AECOM
250 Apollo Drive
Chelmsford, MA 01824

978.905.2100 tel
978.905.2101 fax

Memorandum

To	Marie Esten, Tony Silva	Page 1
Project No.	60565200	
Subject	New Bedford Harbor Groundwater Monitoring – October 2018 Summary	
From	Helen Jones	
Date	March 4, 2019	

Introduction

This Technical Report presents a summary of the groundwater monitoring activities conducted at the Sawyer Street Confined Disposal Facility (CDF) at the New Bedford Harbor Superfund Site (Site) in New Bedford, Massachusetts during the Fall 2018 monitoring period. All field activities were conducted in accordance with the FSP (AECOM, 2018a), Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) Addendum Revision 10.0 (AECOM, 2018b), and Accident Prevention Plan (APP) (AECOM, 2017). No deviations from the FSP, QAPP, or APP were noted.

Field Activity Summary

The six groundwater wells located around the perimeter of the CDF were sampled on October 3 and 4, 2018, continuing the monitoring program that has been ongoing since 2001 (Figure 1). Samples were collected in accordance with SOP NBH-W-04, Low Flow Groundwater Sampling, and the EPA Region I Low Stress (flow) Purging and Sampling Groundwater Procedure for the Collection of Groundwater Samples from Monitoring Wells, Rev.4, September 19, 2017 (EPA, 2017). The objective of the monitoring program is to provide data that can be used to evaluate the integrity of the Sawyer Street CDF, as well as assess trends in groundwater concentrations of polychlorinated biphenyls (PCBs) as Aroclors, selected metals (cadmium, chromium, copper, and lead), volatile organic compounds (VOCs), and total suspended solids (TSS). Results from the sampling will be used to support compliance of ongoing remediation activities at the Site.

The Fall groundwater sampling program consisted of sampling the six wells located around the perimeter of the CDF; MW-1, MW-3, MW-4A, MW-5, MW-6, and MW-7A (Figure 1). Prior to the sampling, the CDF wells were screened for headspace using a photoionization detector (PID) and then developed on October 1 and 2, 2018. Wells were developed using a combination of mechanical agitation and pumping to remove accumulated sediment and debris from the wells and from the gravel pack around the well perimeter Water was removed (16 L to 36 L total) from the wells using a whale pump until turbidity was less than 15 NTU for at least 3 consecutive measurements after purging the wells. All wells were successfully developed, and no issues were noted. Well development records are presented in Attachment A.

Groundwater was removed from each monitoring well, except MW-3, using a bladder pump system and dedicated Teflon bladders and tubing. Because MW-3 is damaged such that a bladder pump cannot be used in it, groundwater samples were removed via peristaltic pump with Teflon tubing from MW-3. As noted during previous groundwater sampling events, MW-3 appears to have a disconnected riser below the ground surface but above the top of the water column. At this time, no repairs are scheduled for this well. Groundwater was slowly purged from each of the wells prior to sampling until it was representative of groundwater within the aquifer. This determination was made by taking successive measurements of water quality parameters (dissolved oxygen [DO], temperature, conductivity, ORP, pH, and turbidity) to ensure that the groundwater had reached a steady state condition prior to sampling. Groundwater levels were measured throughout the purging of the wells to ensure that drawdown was minimized during the pumping and water was withdrawn from approximately the middle of the well screen or the middle of the water column (if the screened interval was not identifiable). Sampling logs are included as Attachment B.

Upon arrival for sample collection, the water level in each well was measured with a decontaminated water level tape and the well volume was calculated. Decontamination procedures, as described in the FSP (AECOM, 2018a), were followed for the water level tape between wells to remove any potential contaminants. A different, clean bladder pump was used at each monitoring well to prevent cross contamination. The dedicated bladder pump was then connected to the dedicated tubing, placed in the well, and activated for pumping at a low rate. The pumping rate was adjusted intermittently when required to ensure that the drawdown in the well was minimized. In-situ measurements were made using a calibrated YSI® multi-meter with a flow-thru cell, used in accordance with the manufacturer's specifications. The flow-thru cell was disconnected from the discharge line during sample collection. Certified clean sample containers were provided by the analytical laboratories. Sample bottles were pre-preserved by the analytical lab using a preservative type and volume suitable to the analysis performed. Cross-contamination was avoided by using dedicated bladders and/or tubing in each of the wells. In this way, the water samples never came in contact with a bladder or piece of tubing that had contact with water from any other well.

Representative water samples were collected from each of the wells, and sample integrity was maintained until the samples were received by the analytical laboratories. A Field Replicate was collected from MW-5. A matrix spike/matric spike duplicate (MS/MSD) sample was collected from MW-7A. In addition, an equipment blank was collected off a bladder pump with Teflon bladder and tubing and VOC samples were accompanied by a laboratory prepared trip blank. All samples were sent via courier to Katahdin Analytical in Scarborough, ME.

In situ Water Quality Summary

Prior to sample collection, water quality parameters were measured during the initial purging of groundwater at each well. In situ measurements were made using a Yellow Springs Instruments (YSI®) multi-meter sonde and a flow-through cell. The YSI® sonde was calibrated and used according to the manufacturer's specifications. Once the diagnostic parameters had stabilized, sample collection was initiated. In situ measurements are summarized in Table 1.

Chemistry Water Quality Summary

Chemical analyses were performed according to the project Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) Addendum (AECOM, 2018b). Groundwater samples were analyzed for PCBs (as Aroclors), metals, VOCs, and TSS. Analyses were performed by Katahdin Analytical in Scarborough, Maine.

Sample results are summarized in Table 2 and are compared to the Massachusetts Contingency Plan (MCP) Method 1 Category GW-3 criteria for groundwater that has a potential to discharge to a surface water body (Massachusetts Department of Environmental Protection [MADEP], 2014). Complete laboratory data packages with test results are provided in Appendix C.

Quality Control

Field and laboratory QC results for the 2018 groundwater survey are summarized below. The types of QC samples used to assess data quality are summarized in Table 3. Data quality was assessed in terms of accuracy/bias and precision. The project QAPP defined the validation levels as Tier 1 Stage 2A (PCB Aroclors, metals and VOC) or Tier 1 Stage 1 (TSS). The data validation was performed using EPA New England Environmental Data Review Supplement for Regional Data Review Elements and Superfund Specific Guidance/Procedures (April 2013), EPA Contract Laboratory Program National Functional Guidelines for Organic Superfund Methods Data Review, January 2017, EPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review, January 2017 and criteria listed in the task order QAPP.

The data have been determined to be useable for the purpose of assessing the presence/absence and quantitative concentrations of the analytes in the media tested (groundwater). Results of the validation are summarized in the data validation report are provided in Appendix D.

Summary

Monitoring was performed in October 2018 at the Sawyer Street CDF as part of an ongoing groundwater monitoring program. Groundwater levels, water quality parameters, organic contaminants, and metals were monitored in all six wells at the facility. Analysis of groundwater samples collected in October 2018 indicates that PCB Aroclors, metals, and VOCs, where detected, were measured at concentrations below the applicable MCP GW-3 criteria. Overall, the groundwater data collected during the 2018 monitoring suggest that the integrity of the CDF is currently maintained.

References

AECOM, 2017. Accident Prevention Plan. Environmental Monitoring, Sampling, and Analysis. New Bedford Harbor Superfund Site, New Bedford, Massachusetts.

AECOM, 2018a. Draft Final Groundwater Monitoring Field Sampling Plan. New Bedford Harbor Superfund Site, New Bedford, MA. Draft Final September 2018.

AECOM, 2018b. Draft Final Quality Assurance Project Plan Addendum Revision 10.0. Environmental Monitoring, Sampling, and Analysis. New Bedford Harbor Superfund Site, New Bedford, Massachusetts.

EPA, 2017. EPA Region I Low Stress (flow) Purging and Sampling Groundwater Procedure for the Collection of Groundwater Samples from Monitoring Wells, Rev. 4, September 19, 2017.

Massachusetts Contingency Plan (MCP), 2017. Method 1 MCP GW-3 standard from 310 CMR 40.0974(2), December 2017.

Figure

N
W E
S

0 50 100 200 Feet

Well Locations

New Bedford Harbor Sawyer Street CDF Groundwater Well Locations

SCALE	DATE	PROJECT NO.
1:1300	11/18	60565200

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Figure Number

1

Tables

Table 1. Summary of In Situ Groundwater Data Collected Immediately Prior to Sampling

	Location ID:	**MW-1**	**MW-3**	**MW-4A**	**MW-5**	**MW-6**	**MW-7A**
	Sample ID:	**MW01-100418**	**MW03-100318**	**MW04A-100318**	**MW05-100318**	**MW06-100418**	**MW07A-100318**
	Date:	**10/4/2018**	**10/3/2018**	**10/3/2018**	**10/3/2018**	**10/4/2018**	**10/3/2018**
	Sample Time:	**11:00**	**17:00**	**13:20**	**14:00/14:10 (FD)**	**10:15**	**12:05**
Parameters	**Units**						
Depth to Water	ft	16.50	19.80	12.30	11.00	13.85	10.90
pH	--	6.92	7.50	7.20	7.48	7.13	6.59
Specific Conductivity	µS/cm	671	8775	5098	5062	2325	660
Temperature	°C	16.5	16.1	16.1	16.2	15.4	16.5
DO	mg/L	0.36	0.47	0.18	0.03	0.1	0.34
Turbidity	NTU	3.86	6.56	2.40	7.90	3.45	0.60
ORP	mV	-6.6	-10.3	-119.6	-251.7	-139.9	8.9
Purge Volume	L	7.5	4.5	6	16	10	19
Flow Rate	mL/min	136	90	59	180	200	200
Color/Odor	--	clear/none	clear/none	clear/minor sulfide-like	clear/none	clear/none	clear/none

Notes:
ft - feet
µS/cm - microsiemens per centimeter
°C - Celcius
mg/L - milligrams per liter
NTU - Nephelometric Turbidity Unit
mV - millivolts
L - liters
mL/min - milliliters per min

Table 2. PCB, Metal, VOC and TSS Groundwater Results with Final Qualifiers, October 2018 Sampling Event

			Location ID:	MW-1	MW-3	MW-4A	MW-5	MW-5	MW-6	MW-7A	MW-7A	MW-7A
			Sample ID:	MW01-100418	MW03-100318	MW04A-100318	MW05-100318	MW05-100318-REP	MW06-100418	MW07A-100318	EB-001-100318	TB-001-092818
			Type:	N	N	N	N	FD	N	N	EB	TB
			Date:	10/4/2018	10/3/2018	10/3/2018	10/3/2018	10/3/2018	10/4/2018	10/3/2018	10/3/2018	9/28/2018
Analyte	**CAS No.**	**Unit**	**MCP GW-3 (a)**									
Total Suspended Solids (TSS) - 2540D												
Total suspended solids	10-32-2	mg/L	--	8.0	15	5.6	4.8	4.8	12	4.0 U	--	--
Inorganics - 6020A												
Cadmium	7440-43-9	µg/L	4	0.40 J	0.46 J	0.14 J	1.0 U	1.0 U	1.0 U	0.91 J	1.0 U	--
Chromium	7440-47-3	µg/L	300	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	--
Copper	7440-50-8	µg/L	--	3.0 U	3.0 U	4.2 J	3.0 U	3.0 U	3.0 U	3.8 J	3.0 U	--
Lead	7439-92-1	µg/L	10	1.2 J	1.0 U	0.643 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--
Polychlorinated Biphenyls - 8082A												
Aroclor-1016	12674-11-2	µg/L	--	0.048 U	0.048 U	0.049 U	0.048 U	0.048 U	0.048 U	0.048 U	0.049 U	--
Aroclor-1221	11104-28-2	µg/L	--	0.048 U	0.048 U	0.049 U	0.048 U	0.048 U	0.048 U	0.048 U	0.049 U	--
Aroclor-1232	11141-16-5	µg/L	--	0.048 U	0.048 U	0.049 U	0.048 U	0.048 U	0.048 U	0.048 U	0.049 U	--
Aroclor-1242	53469-21-9	µg/L	--	0.048 U	0.048 U	0.049 U	0.048 U	0.048 U	0.048 U	0.048 U	0.049 U	--
Aroclor-1248	12672-29-6	µg/L	--	0.048 U	0.048 U	0.049 U	0.048 U	0.048 U	0.048 U	0.048 U	0.049 U	--
Aroclor-1254	11097-69-1	µg/L	--	0.048 U	0.048 U	0.049 U	0.048 U	0.048 U	0.048 U	0.048 U	0.049 U	--
Aroclor-1260	11096-82-5	µg/L	--	0.048 U	0.048 U	0.049 U	0.048 U	0.048 U	0.048 U	0.048 U	0.52 J+	--
Total PCB	1336-36-3	µg/L	10	0.34 U	0.33 U	0.34 U	0.33 U	0.33 U	0.33 U	0.33 U	0.52 J+	--
Volatile Organic Compounds (VOCs) - 8260B												
1,1,1,2-Tetrachloroethane	630-20-6	µg/L	50000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	71-55-6	µg/L	20000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	79-34-5	µg/L	50000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	79-00-5	µg/L	50000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	75-34-3	µg/L	20000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	75-35-4	µg/L	30000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloropropene	563-58-6	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichlorobenzene	87-61-6	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichloropropane	96-18-4	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	120-82-1	µg/L	50000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trimethylbenzene	95-63-6	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane	96-12-8	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane	106-93-4	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	95-50-1	µg/L	2000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	107-06-2	µg/L	20000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	78-87-5	µg/L	50000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	108-67-8	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	541-73-1	µg/L	50000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichloropropane	142-28-9	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	106-46-7	µg/L	8,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dioxane (P-Dioxane)	123-91-1	µg/L	50000	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
2,2-Dichloropropane	594-20-7	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	78-93-3	µg/L	--	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Chlorotoluene	95-49-8	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Hexanone	591-78-6	µg/L	--	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Chlorotoluene	106-43-4	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
4-Methyl-2-Pentanone	108-10-1	µg/L	--	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	67-64-1	µg/L	50000	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	71-43-2	µg/L	10000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromobenzene	108-86-1	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromochloromethane	74-97-5	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	75-27-4	µg/L	50000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	75-25-2	µg/L	50000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

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			Location ID:	MW-1	MW-3	MW-4A	MW-5	MW-5	MW-6	MW-7A	MW-7A	MW-7A
			Sample ID:	MW01-100418	MW03-100318	MW04A-100318	MW05-100318	MW05-100318-REP	MW06-100418	MW07A-100318	EB-001-100318	TB-001-092818
			Type:	N	N	N	N	FD	N	N	EB	TB
			Date:	10/4/2018	10/3/2018	10/3/2018	10/3/2018	10/3/2018	10/4/2018	10/3/2018	10/3/2018	9/28/2018
Analyte	**CAS No.**	**Unit**	**MCP GW-3 (a)**									
Bromomethane	74-83-9	µg/L	800	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon Disulfide	75-15-0	µg/L	--	1.0 U	1.0 U	1.0 U	0.98 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	56-23-5	µg/L	5000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	108-90-7	µg/L	1000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	75-00-3	µg/L	--	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroform	67-66-3	µg/L	20000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	74-87-3	µg/L	--	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Cis-1,2-Dichloroethene	156-59-2	µg/L	50000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cis-1,3-Dichloropropene	10061-01-5	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Di-Isopropyl Ether	108-20-3	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	124-48-1	µg/L	50000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromomethane	74-95-3	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane	75-71-8	µg/L	--	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Diethyl Ether	60-29-7	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethyl Tertiary-Butyl Ether	637-92-3	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	100-41-4	µg/L	5000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Hexachlorobutadiene	87-68-3	µg/L	3000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropylbenzene	98-82-8	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl Tert-Butyl Ether	1634-04-4	µg/L	50000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene Chloride	75-09-2	µg/L	--	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
N-Butylbenzene	104-51-8	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
N-Propylbenzene	103-65-1	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Naphthalene	91-20-3	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
O-Xylene	95-47-6	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
P-Isopropyltoluene	99-87-6	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
P/M Xylene	V-106-42-3/ 108-38-3	µg/L	--	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Sec-Butylbenzene	135-98-8	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Styrene	100-42-5	µg/L	6000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tert-Butylbenzene	98-06-6	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tertiary-Amyl Methyl Ether	994-05-8	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	127-18-4	µg/L	30000	1.0 U	2.5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrahydrofuran	109-99-9	µg/L	--	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Toluene	108-88-3	µg/L	40000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.44 J	1.0 U
Trans-1,2-Dichloroethene	156-60-5	µg/L	50000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trans-1,3-Dichloropropene	10061-02-6	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	79-01-6	µg/L	5000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	75-69-4	µg/L	--	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl Chloride	75-01-4	µg/L	50000	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U

Notes:
U - The analyte was not detected.
J - Estimated value.
J+ - Estimated value, biased high.
µg/L - micrograms per litre
mg/L - miligrams per litre
TSS -Total Suspended Solids
PCB - Polychlorinated Biphenyls
VOC - Volatile Organic Compounds
TB = Trip Blank
EB = Equipment Blank
FD = Field Duplicate
MCP = Massachusetts Contingency Plan
(a) Massachusetts Contingency Plan (MCP), Method 1 MCP GW-3 standard from 310 CMR 40.0974(2).

Table 3. Summary of the Number of Sample Sets Required for Collection

Analyte	Analytical Method	Field Sample (1 per well)	Field Replicate	MS	MSD	Trip Blank	Equipment Blank	Sample Totals
VOC	EPA 8260	6	1	1	1	1	1	11
PCB Aroclors	EPA 8082	6	1	1	1	0	1	10
Metals	EPA 6020A	6	1	1	0(1)	0	1	9
TSS	EPA 2540D	6	1	0	0	0	0	7

Note (1): The metals analysis method only requires one extra aliquot of sample volume for the MS/MSD.

Attachment A

Well Development Logs

Synoptic WL 10.1.18
Development 10.2.18

Well ID: MW-1

Low Flow Ground Water Sample Collection Record

Client: USACE Date: 10.1.18 Time: Start 1400 am/pm
Project No: 60565200.800 Finish 1630 am/pm
Site Location: New Bedford Harbor
Weather Conds: Overcast, breezy, high 60s Collector(s): Stan Hatfield + Ally Sullivan

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 23.96 c. Length of Water Column _____ (a-b)

Casing Diameter/Material 2 in PVC

@(1202) b. Water Table Depth 15.90 d. Calculated System Volume (see back) _____

2. WELL PURGE DATA

a. Purge Method: "Whale" Pump - Waterspout 1 - 1½" dia

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number
Turbidity Hach Lamotte 2020WE - 2742-4512

10.2.18

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	~~Drawdown~~ Starting Depth (feet)	Color/Odor
1420	6						2.38		15.90	
1515	5						23.5		16.50	
1615	5						11.2		16.2	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

(continued on back)

If no or N/A - Explain below.

_____

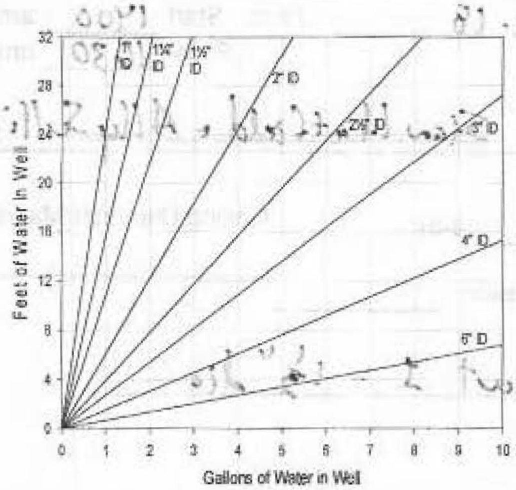
3. SAMPLE COLLECTION: Method: _____

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time

Comments PID @ (1202) (1158) 10.1.18 = 2.8 ppm in wellhead space
Well surged before pumping down to approximately 23' then allowed to recover three (3) times. Recovery depths listed above.

Signature _____ Date 10.1.18
10.2.18

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

Synoptic WL - 10.1.18
Development - 10.2.18

Well ID: MW-3

Low Flow Ground Water Sample Collection Record

Client: USACE Date: 10.1.18 Time: Start 1230 am/pm
Project No: 60565200.800 Finish _____ am/pm
Site Location: New Bedford Harbor
Weather Conds: Overcast, Breezy, high 60 Collector(s): Stan Hatfield / Ally Sullivan

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 23.91 c. Length of Water Column _____ (a-b)

Casing Diameter/Material 2 in PVC

(1232) b. Water Table Depth 12.78 SV d. Calculated System Volume (see back) _____

top of PVC - PID = 2.5 @ 1229

2. WELL PURGE DATA

a. Purge Method: "Whale" Pump - Waterspout - 1, 1½" Diameter

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
Turbidity Hach Lamotte	2020WE	2742-4512

10.2.18

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet) starting WL	Color/Odor
1259	8						4.65		12.75	
1325	8						21.9		15.	
1457	11						16.8		15.6	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

(continued on back)

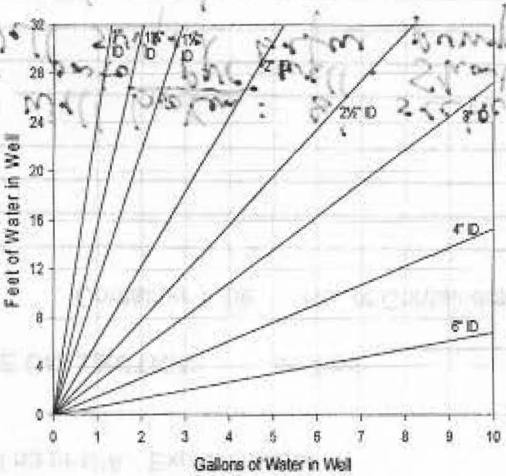
3. SAMPLE COLLECTION: Method: _____

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time

Comments Well broken: 8' section of PVC 2" riser that fits very loose onto PVC well. Should be connected with coupling. Well surged before pumping three (3) times

Signature _____ Date 10.1.18
10.2.18

Purge Volume Calculation



Volume/ Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

Well ID: MW-7A

Low Flow Ground Water Sample Collection Record

Client: USACE Date: 10/1/2018 Time: Start 1405 am/pm
Project No: 60562001800 Finish 1530 am/pm
Site Location: New Bedford
Weather Conds: Overcast, Breezy, ↑60s Collector(s): Stan Hatfield, Ally Sullivan

1. **WATER LEVEL DATA: (measured from Top of Casing)**

@1421 a. Total Well Length 14.55 top of PVC (Σ 15.15 top of casing) c. Length of Water Column _____ (a-b)

@1259 b. Water Table Depth 10.25ft (top of PVC black mark) d. Calculated System Volume (see back) _____

Casing Diameter/Material: 2" PVC; 4" / 8" Steel (outer)

e. PID: 2.4ppm @1257

2. **WELL PURGE DATA**

a. Purge Method: whale pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make: Lamotte Model: 2020we Serial Number: 2742-4512

start 1430 pump

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1435	2						2.1		≈3'	clear
1445	2						8.35		~2'	clear
1455	6 (4 @ 40 sec.)						—		~2.5'	clear
1513	4						—		~2.5'	clear - total 20 L
1515	1						4.09		~1.5'	clear
1520	1						2.83		~1.5'	clear

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

(continued on back)

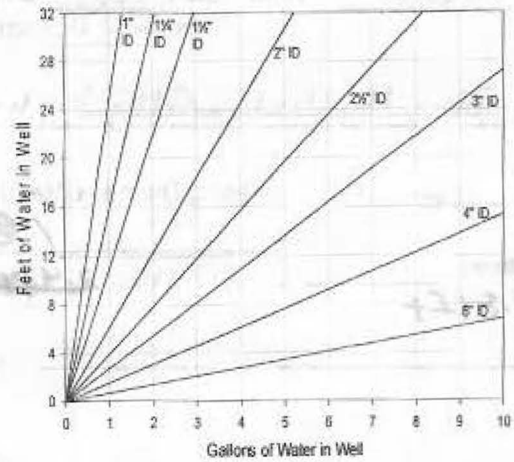
3. **SAMPLE COLLECTION:** Method: _____

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time

Comments: Pumped for 20 L and stopped; restarted after recovery. pump is turned on for very short intervals, ~10 sec.

Signature: [signature] Date: 10/1/2018

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

Synoptic WL 10-1-18
Well Development 10-2-18

Well ID: MW-4A

Low Flow Ground Water Sample Collection Record

Client: USACE Date: 10-1-18 Time: Start 1550 am/pm 10-1-18
Project No: 60565200.800 Finish 1200 am/pm 10-2-18
Site Location: New Bedford
Weather Conds: Cloudy, Breezy, high 60's Collector(s): _____

1. WATER LEVEL DATA: (measured from Top of Casing)

@1551 a. Total Well Length 25.52 TOC c. Length of Water Column _____ (a-b)

Casing Diameter/Material 2" PVC

@1251 b. Water Table Depth 8.8 top PVC d. Calculated System Volume (see back) _____

Black mark, TOC = 9.47

2. WELL PURGE DATA

a. Purge Method: PID = 1.6 ppm @1250 "Waterspout I" pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
Lamotte	2020WE	2742-4512

10-1-18

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	~~Color/Odor~~
1557	18						5.30		8.8 to 13'	clear/sulfide
10-2-18									8.8	
0950	5l						35			Dark Steel Grey
1015	(Recovery)									
1145	4.5l						293			"

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

(1145) 8l turb = 16.6

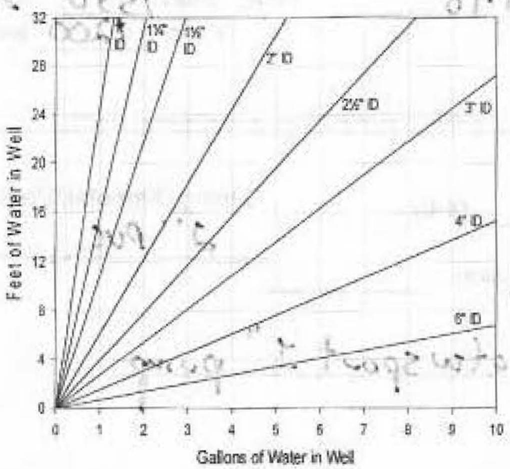
3. SAMPLE COLLECTION: Method: _____

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time

Comments Dark color and precipitate could be manganese? Groundwater has dk color, tints coalesce and form ppt, floc and settle out quickly. During first pumping, surging was done but no thick silt. Some DK grey floc appeared on 10-2-18.

Signature _____ Date 10-1-18
10-2-18

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

Synoptic WL 10.1.18
Well Development 10.2.18

Well ID: MW-5

Low Flow Ground Water Sample Collection Record

Client: USACE Date: 10.1.18 Time: Start 1635 am/pm
Project No: 60565200.800 Finish _____ am/pm
Site Location: New Bedford
Weather Conds: Cloudy, Breezy, 60's Collector(s): Stan Hatfield, Ally Sullivan

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 19.03 TOCasing. c. Length of Water Column _____ (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 7.98 ftbPVC = 8.61 Top of Casing d. Calculated System Volume (see back) _____

2. WELL PURGE DATA

a. Purge Method: "Whale" pump - Waterra pump 1

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
Turbidity Lamotte	2020 WE	2742-4512

10.1.18

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1640	1.5						9.76		7.98 to 13.8'	Grey
10.2.18	—						9.84			Grey
1040	2						4.65			
1050	—									
1055	20						*636			
1210	6						24.5			
1245	0.5						6.9			

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

(continued on back)

*= 636 - maybe overrange error but extreme turbid

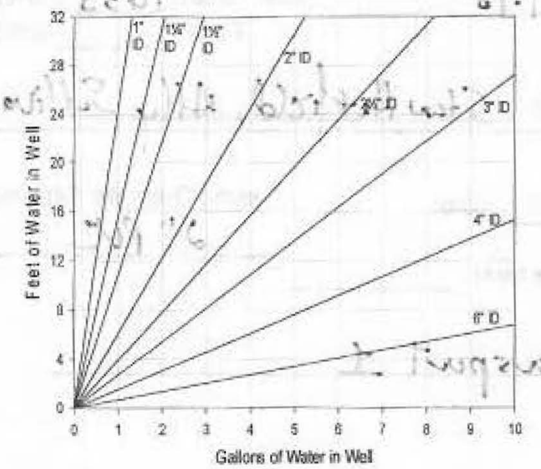
3. SAMPLE COLLECTION: Method: _____

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time

Comments Well Development started on 10.1.18 finished on 10.2.18
Synoptic WL done 10.1.18. Well surged at 1050 on 10.2.18,

Signature _____ Date 10.1.18
10.2.18

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

Synoptic WL 10.1.18
Development 10.2.18

Well ID: MW-6

Low Flow Ground Water Sample Collection Record

Client: USACE Date: 10.1.18 Time: Start 1230 am/pm 10.2.18
Project No: 60565200.800 Finish _____ am/pm
Site Location: New Bedford
Weather Conds: Overcast, Breezy, 60's Collector(s): Stan Hatfield / Ally Sullivan

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 19.12 c. Length of Water Column _____ (a-b)

Casing Diameter/Material 2" PVC

(d) 1220 b. Water Table Depth 12.22 d. Calculated System Volume (see back) _____

↑ Black mark PUC

2. WELL PURGE DATA

a. Purge Method: PID = 22 ppm @ 1216

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
Lamotte	2020WE	2742-7917 4512

10.2.18

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1232	4						"MUD"		down 18'	mud brown
1242	4						clears (last over range)			
1340	5						70.6		12.20	
1440	6						11.2		12.02	

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

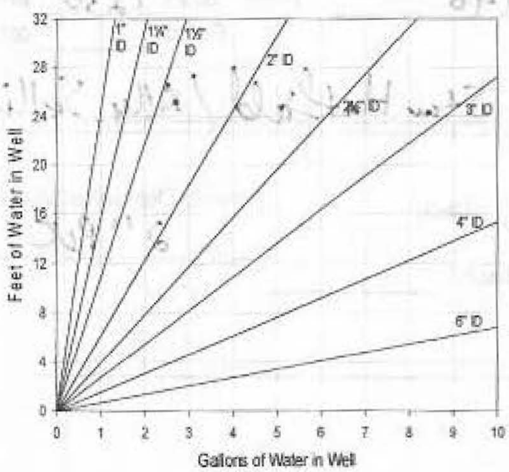
3. SAMPLE COLLECTION: Method: _____

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time

Comments: "Hole in Fence" along road from ACOE trailer to Dock
Surged at 1232.

Signature: Stan Hatfield Date 10.1.18
10.2.18

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

Attachment B

Monitoring Well Sampling Logs

Well ID: MW-1

Low Flow Ground Water Sample Collection Record

Client: ACOE
Project No: 60565200.800
Site Location: New Bedford Harbor
Weather Conds: Overcast, warm
Date: 10.4.18
Time: Start 0900 am/pm
Finish 1200 am/pm
Collector(s): S Hatfield

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 23.96 c. Length of Water Column 8' (a-b)

b. Water Table Depth 15.69' d. Calculated System Volume (see back) 5

Casing Diameter/Material 2" PVC

2. WELL PURGE DATA 100 flow

a. Purge Method: (WL = 15.90' from 10.3.18)

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

(0951) Start Pump. Make: YSI PRO Model: turbo. Serial Number: 18C 103635; 18F 100 180; 2742-4512

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1000	.3	19.0	6.98	829	7.85	3.0	35.6	35	15.95	clear, no odor
1008	.41	15.6	6.81	714	3.31	20.5	19.0	190	16.30	
1014	2 l	15.9	6.83	688	2.60	27.4	13.2	134	16.5	
1020	3 l	16.0	6.83	680	2.28	30.4	10.1	136	16.5	
1032	4.5 l	16.1	6.87	676	1.16	19.2	5.90	136	16.5	
1041	6 l	16.3	6.91	673	0.90	6.1	4.73	136	16.5	
1046	6.5	16.3	6.91	671	0.63	0.2	4.27	136	16.5	

flow adj

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

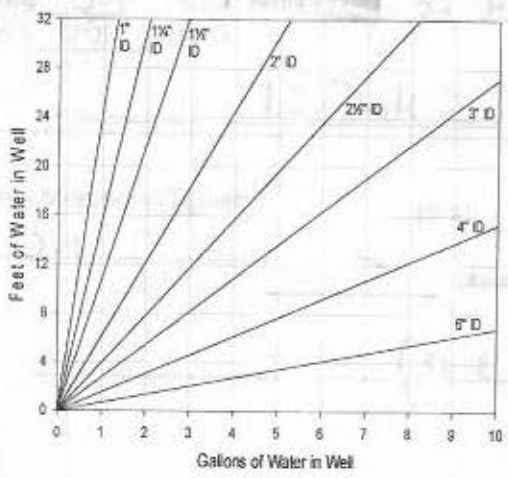
3. SAMPLE COLLECTION: Method: Bladder Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-1 100418	250 ml plastic	1	HNO3	Metals	1100
↓	1 l amber glass	2	—	PCB	1100
	1 l plastic	1	←	TSS	1100
	40 ml VOA vials	3	HCl	VOA	1100

Comments: Pump hung at 21.5' - suction pt. of pump. Looks like DO as soon as pump turned on.

Signature: [signature] Date: 10.4.18

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

24' deep
16' WL
8' of 2" PVC

$8'\left(.62\,l/_{ft.}\right) = 4.8\ l$

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1050	6.8	16.3	6.93	671	0.60	+0.8	4.07	136	16.5	clear/no odor
1055	7.5	16.5	6.92	671	0.36	-6.6	3.86	136	16.5	
Sample time - 1100										

Well ID: MW-3

Low Flow Ground Water Sample Collection Record

Client: ACOE
Project No: 60565200.800
Site Location: New Bed Fuel Farm
Weather Conds: Overcast, mild
Date: 10.3.18
Time: Start 1530 am/pm
Finish 1750 am/pm
Collector(s): S Hatfield

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 23.91
b. Water Table Depth 14.20
c. Length of Water Column ~~6.75~~ 10' (a-b)
d. Calculated System Volume (see back) 6.5 l (from 10.2.18 WL: 12.75')

Casing Diameter/Material: 2" PVC

2. WELL PURGE DATA

a. Purge Method: Peristaltic Pump low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

24' − 14 = 10' × .61

c. Field Testing Equipment used: Make: YSI; Model: PRO; Serial Number: 18C 103635, 18F 100 180, 2742-4512

1554 Start. tub touch

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1601	.25	16.4	7.04	8877	1.26	72.1		130	15.1	no odor, clr
								47.2 =		
1612	.5	16.6	7.01	8877	1.44	55.5	22.6	44.2 =	16.4'	↓
1619	.6	16.5	7.02	8860	1.46	38.7	19.9	43.2 =	17.1'	clear, no odor
1625	≈1.8 l	16.4	7.03	8847	1.32	29.6	18.6	43.2	17.5	
1630	2 l	16.2	7.05	8826	1.12	14.3	17.7	43.2	17.9	
1635	2.3 l	16.3	7.07	8809	0.57	2.6	15.2	45.2	18.2	↓

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

pump off (by itself)

If no or N/A - Explain below.
Drawdown issue

3. SAMPLE COLLECTION: Method: Peristaltic

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-3 100318	250 ml plastic	1	HNO3	met	1706
↓	1 l plastic	1	—	—	↓
	1 l amber	2	—	PCBS	
	40 ml vial	3	HCl	VOA	↓

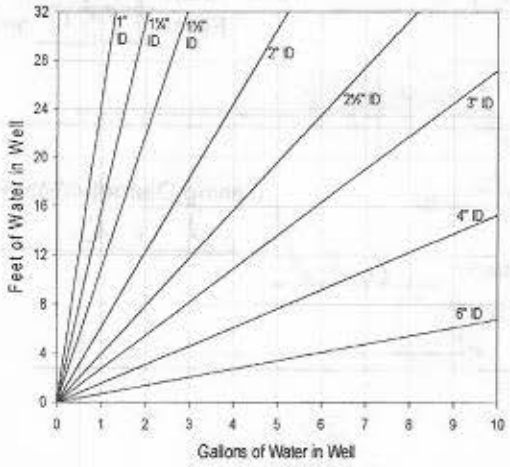
Comments: top 5' riser loose. Immediate dd.

Signature: [signature]
Date: 10.3.18

mean below → (17.5 − 15.1')/2 m / 18 min

MW-3

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

NA

	Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
10.1.18	MW-7A	1720		10.2.18	1720						
10.2.18	MW-4A	1145		10.3.18	Sample times						
	MW-5	1245									
	MW-6	1440									
	MW-3	1457									
	MW-1	1815									
	1645	3 l	16.3	7.06	8813	0.55	1.2	11.1	145→90	18.9	NO odor, clear
	1650	4 l	16.3	7.06	8791	0.48	-6.5	4.29	90	19.6	
	1658	4.5 l	16.1	7.05	8775	0.47	-10.3	6.56	90	19.8	
	Sample =	1700									

Sampling criteria

Well ID: MW-4A

Low Flow Ground Water Sample Collection Record

Client: ACOE Date: 10.3.18 Time: Start 1145 am/pm
Project No: 605652200.800 Finish _____ am/pm
Site Location: New Bedford Harbor
Weather Conds: Overcast Collector(s): S Hatfield

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 25.52 TOC c. Length of Water Column 16.7' (a-b)
Casing Diameter/Material 2" PVC, 4" casing
b. Water Table Depth 8.82 TOC d. Calculated System Volume (see back) 10.3 l
8.82 TOC → = 9.53 TOC

2. WELL PURGE DATA

a. Purge Method: Bladder Pump 1½" low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number
start pump (1145) = 8.82 (9.53 TOC) YSI IDC 103635 / 18F 100180
Turb 2020 WE 2742-4512

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown TOC (feet)	Color/Odor
1210 1150	0.2	16.4	7.0	5325	0.86	181.5	13.2	57	9.10.20	clear, SU fish
1215	0.5 q	15.9	7.06	4893	0.46	186.4	8.82	57 q	10.88	
1225	0.6 q	15.9	7.13	4500	0.35	-156.8	5.52	78	11.35	
1230	0.7 q	15.7	7.16	4372	0.39	-139.4	5.24	84	11.68	
1240	3 l	15.6	7.19	4261 = 4181		-128.1	2.60	88	12.05	
1245	3.5 l	15.8	7.20	4125	0.37	-121.7	2.46	57 q	12.20	
1250	4 l	15.8	7.20	5726	0.36	-116.9	2.42	57	12.22	

flow rate lowered

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☑	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Bladder Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-4A0318	250 ml plstic	1	HNO_3	met	1320
MW-4A100318	1 l plstic	1	—	TSS, PCB's	
	1 l glass	2	—		
	40 ml VOA	3	HCl	~~HCl~~ VOA	

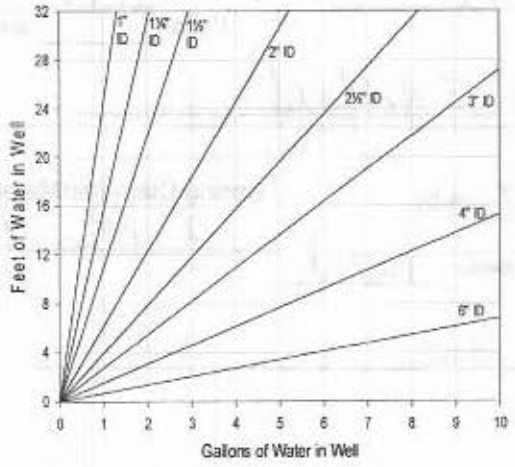
Comments: Pump hung at 22.7' - tried, but obstruction, so depth set at 21.5' (1245) Drawdown continued to approx 2' with low flow rate

Signature _____ Date 10.3.18

25.52 − 8.82 = 16.70' × 0.62 l/ft = 10.3 l

MW-4A

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178 ←
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1303	5	15.8	7.20	5108	0.29	-116.2	2.41	~~12.20~~	12.30	clear, sulfide-minor
1317	6	14.1	7.20	5098	0.18	-119.6	2.40	~~12.30~~ 59	12.30	
Sample:		1320								

Well ID: MW-05

Low Flow Ground Water Sample Collection Record

Client: USACE
Project No: 60562001800
Site Location: New Bedford
Weather Conds: partly cloudy, 1605
Date: 10/3/2018 Time: Start 1400 am/pm Finish 1630 am/pm
Collector(s): B. Morril & A. Sullivan

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 18.7 c. Length of Water Column 10.9 (a-b) Casing Diameter/Material 2in / PVC

b. Water Table Depth 7.8 d. Calculated System Volume (see back) 1.78

2. WELL PURGE DATA

a. Purge Method: low flow - bladder

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	LaMotte	2020we	2099-1412
	Pro DSS		18C105179

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1420	1	16.3	7.46	4973	0.91	-177.9	12.0	240	8.9	clear/none
1425	2	16.5	7.46	5011	0.52	-199.5	14.11	200	10.2	clear/none
1430	3	16.5	7.45	5014	0.38	-204.7	12.53	200	10.4	clear/none
1435	4	16.4	7.45	5026	0.28	-213.1	13.30	200	11.0	clear/none
1440	5	16.3	7.45	5029	0.26	-216.2	7.21	200	11.2	clear/none
1445	6	16.6	7.45	5041	0.24	-220.8	9.32	200	11.05	clear/none
1450	7	17.6	7.44	5059	0.14	-225.9	8.90	200	10.7	clear/none

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

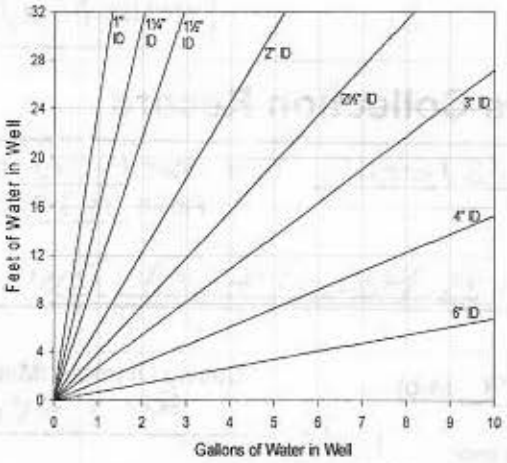
3. SAMPLE COLLECTION: Method: low flow

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW05-100318					14:00
MW05-100318-REP					1410

Comments: pump turned off from 1450 - 1315 for nitrogen tank change

Signature: [signature] Date: 10/3/2018

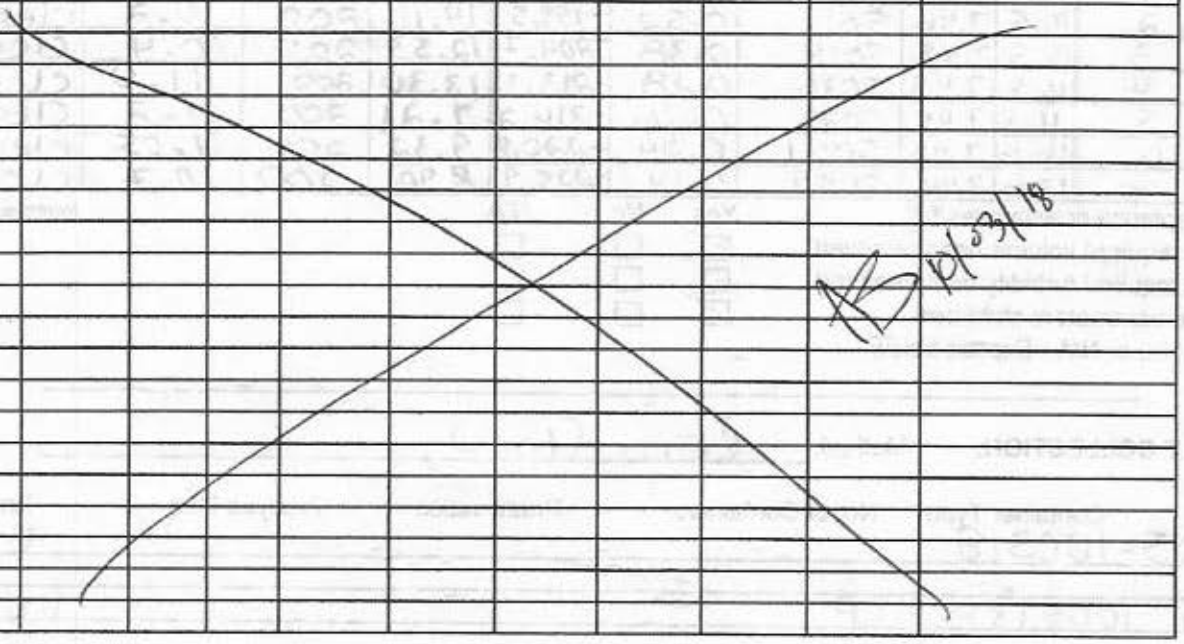
Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1315	8	16.4	7.45	5310	0.33	-238.7	3.75	200	9.3	clear/none
1320	9	16.1	7.48	5085	0.14	-243.9	8.79	200	10.3	clear/none
1325	10	16.1	7.47	5040	0.11	-239.7	4.16	200	10.4	clear/none
1330	11	16.1	7.47	5034	0.12	-240.9	3.77	200	10.55	clear/none
1335	12	16.1	7.47	5023	0.06	-244.9	4.02	200	11.10	clear/none
1340	13	16.4	7.47	5023	0.04	-245.8	29.8	180	11.00	clear/none
1345	14	16.3	7.47	5076	0.03	-251.9	13.2	180	10.90	clear/none
1350	15	16.2	7.48	5066	0.02	-251.6	7.49	180	11.10	clear/none
1355	16	16.2	7.48	5062	0.03	-251.7	7.90	180	11.00	clear/none



AD 01/29/18

Well ID: MW-06

Low Flow Ground Water Sample Collection Record

Client: USACE Date: 10/4/2018 Time: Start 0905 am/pm
Project No: 6056200/800 Finish 1030 am/pm
Site Location: New Bedford
Weather Conds: Overcast, 60S Collector(s): Ally Sullivan

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 19.15 c. Length of Water Column 6.45 (a-b) Casing Diameter/Material 2in/PVC
   b. Water Table Depth 12.70 d. Calculated System Volume (see back) _____

2. **WELL PURGE DATA**
   a. Purge Method: low flow bladder pump
   b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

   c. Field Testing Equipment used:

	Make	Model	Serial Number
	PRODSS	18C105179	18D100312
	LaMotte	2020e	ME11346

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0925	1	16.5	7.23	2680	1.88	-98.9	13.20	200	13.35	clear/none
0930	2	15.8	7.06	2604	0.84	-116.5	12.90	200	13.30	clear/none
0935	3	15.7	7.07	2575	1.66	-122.2	12.70	200	13.50	clear/none
0940	4	15.6	7.08	2522	0.97	-125.9	10.67	200	13.80	clear/none
0945	5	15.5	7.11	2397	0.35	-131.9	11.60	200	13.80	clear/none
0950	6	15.5	7.12	2355	0.22	-134.6	7.47	200	13.85	clear/none
0955	7	15.5	7.12	2342	0.19	-135.5	7.82	200	13.90	clear/none

(continued on back)

   d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

   If no or N/A - Explain below.

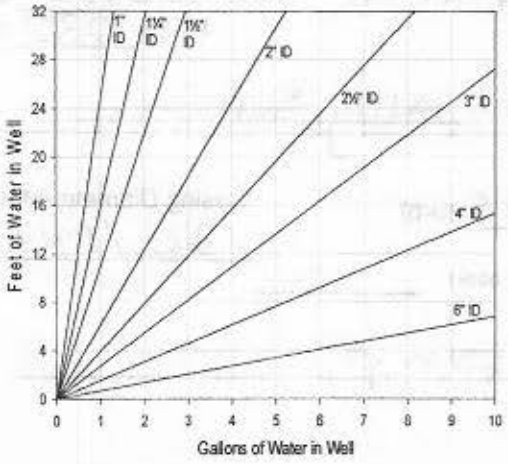
3. **SAMPLE COLLECTION:** Method: _____

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW06-100418					10:15

Comments _____

Signature Ally Sullivan Date 10/4/2018

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1000	8	15.5	7.15	2321	0.13	-138.9	5.51	200	13.90	Clear/none
1005	9	15.4	7.13	2323	0.12	-139.1	4.87	200	13.85	Clear/none
1010	10	15.4	7.13	2325	0.10	-139.9	3.45	200	13.85	Clear/none

Well ID: MW-7A

Low Flow Ground Water Sample Collection Record

Client: USACE Date: 10-3-2018 Time: Start 1025 am/pm
Project No: 605620018000 Finish 1300 am/pm
Site Location: New Bedford
Weather Conds: Overcast, 65 Collector(s): Briley M. & Ally Sullivan

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 14.25 c. Length of Water Column 3.74 (a-b) Casing Diameter/Material 2in / PVC

b. Water Table Depth 10.51 (top of PVC Black mark) d. Calculated System Volume (see back) 0.61

2. WELL PURGE DATA

a. Purge Method: Bladder Pump - Lowflow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	LaMotte	2020 we	2099-1412
	ProDSS		18C105179

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1105	2	16.6	6.53	620	1.33	109.1	1.23	200	10.8	clear/none
1110	4	16.6	6.54	618	0.93	113.9	0.75	200	10.8	clear/none
1115	6	16.6	6.54	631	0.78	101.7	0.59	200	10.8	clear/none
1120	8	16.6	6.55	639	0.63	61.5	0.85	200	10.8	clear/none
1125	10	16.6	6.56	647	0.52	33.3	0.54	200	10.8	clear/none
1130	12	16.6	6.57	652	0.46	24.7	0.62	200	10.9	clear/none
1135	14	16.5	6.57	654	0.45	21.0	0.77	200	10.9	clear/none

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

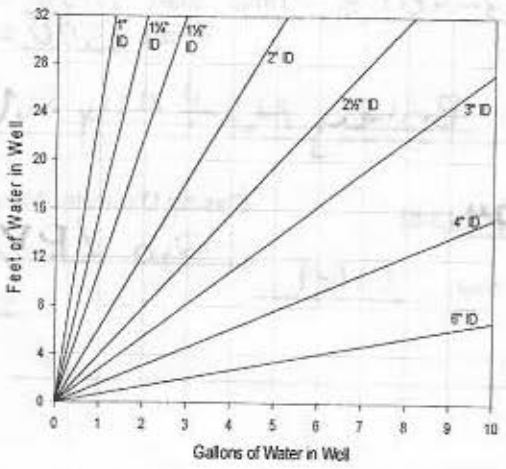
3. SAMPLE COLLECTION: Method: low flow

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW07A-100318		@			12:05

Comments

Signature Ally Sullivan Date 10/3/2018

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1140	15	16.6	6.58	656	0.40	16.0	0.71	200	10.9	clear/none
1145	16	16.5	6.59	658	0.38	13.1	0.86	200	10.9	clear/none
1150	17	16.5	6.59	658	0.35	10.3	0.98	200	10.9	clear/none
1155	18	16.5	6.59	659	0.33	8.3	0.70	200	10.9	clear/none
1200	19	16.5	6.59	660	0.34	8.9	0.60	200	10.9	clear/none

10/03/12

Attachment C

Laboratory Report

AECOM ENVIRONMENT
NEW BEDFORD HARBOR
SL9735

KATAHDIN ANALYTICAL SERVICES
600 TECHNOLOGY WAY
SCARBOROUGH, ME 04074

TABLE OF CONTENTS

Total number of pages: 570

SAMPLE DATA PACKAGE

NARRATIVE
KATAHDIN ANALYTICAL SERVICES
AECOM ENVIRONMENT
NEW BEDFORD HARBOR
SL9735

Sample Receipt

The following samples were received on October 05, 2018 and were logged in under Katahdin Analytical Services work order number SL9735 for a hardcopy due date of October 17, 2018.

KATAHDIN Sample No.	AECOM Sample Identification
SL9735-1	MW01-100418
SL9735-2	MW03-100318
SL9735-3	MW04A-100318
SL9735-4	MW05-100318
SL9735-5	MW05-100318-REP
SL9735-6	MW06-100418
SL9735-7	MW07A-100318
SL9735-8	EB-001-100318
SL9735-9	TB-001-092818

The samples were logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAP standards unless otherwise noted in this narrative or in the Report of Analysis.

We certify that the test results provided in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation L2223.

Analytes which are reported but not listed on our ANAB scope of accreditation will be "^" flagged and the following language will be included in the case narrative for all DoD compliant work: "^" Indicates this analyte is not included on Katahdin Analytical Services DoD-ELAP Scope of Accreditation.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Ms. Heather Manz**. This narrative is an integral part of the Report of Analysis.

Reissue 12/6/18

The VOA section of the report was reissued to correct the client ID for SL9735-9.

Reissue 1/25/19

The PCB section of the report was reissued to report lower detection limits for all analytes.

Organics Analysis

The samples of Work Order # SL9735 were analyzed in accordance with "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846, 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA, and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA and/or for the specific methods listed below or on the Report of Analysis.

Sample SL9735-7 was used for the Matrix Spike (MS) and Matrix Spike Duplicate (MSD), as per client request.

8260B Analysis

The initial calibration analyzed on the T instrument had %RSD values for several analytes that exceeded the method acceptance limit of 15%. For these analytes, either a linear or quadratic model was used for quantitation instead of an average response factor. The analyte 1,4-dioxane failed for both the linear and quadratic models in the initial calibration curve due to the correlation coefficient and the coefficient of determination being less than the method acceptance criteria of 0.995 and 0.990 respectively. This compound was calibrated using the average model.

The reported percent recovery acceptance limits for the Laboratory Control Samples (LCSs) are statistically derived for the full list of spiked compounds. The recoveries of the spiked analytes in the LCS are compared to these acceptance limits. Katahdin standard operating procedure is to take corrective action only if the number of spiked analytes in the LCS that are outside of the QC limits is greater than ten percent of the client compound list.

8082A Analysis

Samples SL9735-1RE and 3RE through 8RE were manually integrated for the target analyte Aroclor-1260 and/or the surrogates TCX and/or DCB. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

Sample SL9735-6RE had a RPD of the results for the target analyte Aroclor-1260 that was outside of the method acceptance limit of 40%. This analyte is flagged with a "J" qualifier on the report of analysis (ROA).

The method blank WG245126-1 had high recoveries for the extraction surrogate TCX on both channels that were outside of the laboratory established acceptance limits. Since the recoveries for the other surrogate, DCB, were acceptable, no further action was taken.

The LCS WG245126-3 had a high recovery for the target analyte Aroclor-1260 that was outside of the laboratory established acceptance limits. The associated samples could not be re-extracted due to a lack of additional sample volume.

The MS WG245126-4 had a high recovery for Aroclor-1016 and a high recovery for the surrogate TCX on channel B that were outside of the laboratory established acceptance limits.

Sample SL9735-2RE had a low recovery for the extraction surrogate DCB on channel A. Sample SL9735-7RE had a high recovery for TCX on channel B. These recoveries were outside of the laboratory established acceptance limits. Since the recoveries were acceptable on the other channel, no further action was taken.

The opening calibration verification standard (CV) (file 7MA488) had high responses for the surrogate TCX both channels. The closing CV (file 7MA504) had a high response for the target analyte Aroclor-1016 on channel A. These responses resulted in %D's that were outside of the method acceptance criteria of ±20%.

There were no other protocol deviations or observations noted by the organics laboratory staff.

Metals Analysis

The samples of Katahdin Work Order SL9735 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Aqueous-matrix Katahdin Sample Numbers SL9735-(1-8) were digested for ICP-MS analysis on 10/09/18 (QC Batch LJ09IMW1) in accordance with USEPA Method 3010A. Katahdin Sample Number SL9735-7 was prepared with duplicate matrix-spiked aliquots, per client request.

ICP-MS analyses of Katahdin Work Order SL9735 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All sample digestates for method 6020A were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. All samples were analyzed within holding times and all analytical run QC criteria were met.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

Internal Standard Element	Associated Analytes
Lithium	Beryllium, Boron
Scandium	Sodium, Magnesium, Aluminum, Potassium, Calcium
Germanium or Yttrium	Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Silver, Cadmium, Strontium, Molybdenum
Terbium	Antimony, Barium, Tin, Tungsten
Bismuth	Lead, Thallium, Thorium, Uranium

Instrument tuning information can also be found in the raw data section in the reports labeled "6020 QC Tune Report". For Method 6020A, the relative standard deviation was determined from 4 replicate measurements and the peak width was measured at 10% of the peak height.

Matrix QC Summary

The measured recoveries of all analytes in the matrix-spiked aliquots of Katahdin Sample Number SL9735-7 are within the project acceptance limits.

The matrix-spike duplicate analysis of Katahdin Sample Numbers SL9735-7 is within the project acceptance limit (<20% relative difference between duplicate matrix-spiked aliquots) for all analytes.

The serial dilution analysis of Katahdin Sample Number SL9735-7 is within the project acceptance limit (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOD) for all analytes.

The measured recoveries of all analytes in the post-digestion spiked aliquot of Katahdin Sample Number SL9735-7 are within the project acceptance criteria (80% - 120% recovery of the added element).

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIIP have been reported using the laboratory's practical quantitation limit (PQL). Results that fall between the method detection limit (MDL) and the PQL are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the PQL is listed in the concentration column. PQLs and MDLs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the PQL is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, MDLs, and PQLs are listed on Form 10 of the accompanying data package.

Wet Chemistry Analysis

The samples of Work Order SL9735 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for nonfilterable residue were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999 APHA-AWWA-WPCF.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Practical Quantitation Limit (PQL) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U PQL", where "PQL" is the numerical value of the Practical Quantitation Limit.

All analyses were performed within analytical holding times, and all quality control criteria were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Quality Assurance Officer, or their designee, as verified by the following signature.

Edmund A Murgo 01-25-19
for

Leslie Dimond
Quality Assurance Officer

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Katahdin Analytical Services, LLC. **Sample Receipt Condition Report**

Client: Aecom	KAS PM: HTM	Sampled By: Client
Project:	KIMS Entry By: JCB	Delivered By: KAS
KAS Work Order#: 5L9735	KIMS Review By: HTM	Received By: JCB
SDG #:	Cooler: 1 of 3	Date/Time Rec.: 10.5.18 1610

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 1.2
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles: **Aqueous:** No bubble larger than a pea?	✓				
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?	✓				
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	✓				
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

Katahdin Analytical Services, LLC. Sample Receipt Condition Report

Client: Aecom	KAS PM: HHM	Sampled By: Client
Project:	KIMS Entry By: JCB	Delivered By: KAS
KAS Work Order#: 5L9735	KIMS Review By: HHM	Received By: JCB
SDG #:	Cooler: 2 of 3	Date/Time Rec.: 10.5.18 1610

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 1.8
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved?					
Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

00000008

Katahdin Analytical Services, LLC. Sample Receipt Condition Report

Client:	Aecom	KAS PM:	HTM	Sampled By:	Client
Project:		KIMS Entry By:	JCB	Delivered By:	KAS
KAS Work Order#:	SLT735	KIMS Review By:	HTM	Received By:	JCB
SDG #:		Cooler: 3 of 3		Date/Time Rec.:	10.5.18 1610

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 6.7
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles: **Aqueous:** No bubble larger than a pea?				✓	
Soil/Sediment: Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				-	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

0000009

SL9735

COC ID: 20181005-CDF GWS **TURNAROUND TIME:** Standard **RUSH:**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO	
Facility Name	NBH - CDF GWS			Lab Name	Katahdin			Email Invoice To	william.humphries@aecom.com
Project Number	60565200			Lab Contact				Invoice Reports	
Department				Email				Email Report To	Helen.Jones@aecom.com
Address	103 Sawyer St			Address				Email Reports	
								Shipping Company	
City	New Bedford	State	MA	City		State		Tracking Number	
Postal Code	02746	Country		Postal Code		Country		Cooler Count	3
Phone Number				Phone Number				Cooler Description	
Deputy Project Manager	Will Humphries			Quote Number				Sampler 2	
Email Address				PO Number				Sampler 3	

SAMPLE DETAILS | **ANALYSIS REQUESTED** (Filtered - F: Field, L: Lab, FL: Field & Lab, N: None)

Sample ID	Start Depth	End Depth	Depth Unit	Field Matrix	Date	Time (24hr)	G=Grab C=Comp	Total # Of Cont.	Fil.	Preserv.	Analysis: PCB aroclor	Metals	TSS	VOC								
MW01-100418				WG	2018/10/04	11:00	G	7			X	X	X	X								
MW03-100318				WG	2018/10/03	17:00	G	7			X	X	X	X								
MW04A-100318				WG	2018/10/03	13:20	G	7			X	X	X	X								
MW05-100318				WG	2018/10/03	14:00	G	7			X	X	X	X								
MW05-100318-REP				WG	2018/10/03	14:10	G	7			X	X	X	X								
MW06-100418				WG	2018/10/04	10:15	G	7			X	X	X	X								
MW07A-100318				WG	2018/10/03	12:05	G	19			X	X	X	X		MS/MSD						
EB-001-100318				EB	2018/10/03	10:00	G	6			X	X		X								
TB-001-092818				TB	2018/09/28	12:00	G	3						X								

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
"H" denotes hold until further instruction	Briley Barra/AECOM	10/05/18 1130		10.5.18 1130
MW07A-100318 is MS/MSD		10.5.18 1610		10.5.18 1610

NB OF BOTTLES RETURNED/DESCRIPTION

Sampler's Name	Briley Barra	Mobile #	781-561-5558
Sampler's Signature	Briley Barra	Date/Time	10/05/18 1130

Katahdin
ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

Dec. 19, 2018
08:58 AM

Quote/Incoming: AECOM-NBH

Login Number: SL9735

Account: METCAL001
AECOM Environment

Web

Project: AECOM-NBH
Mod1 BASE Tasks

Primary Report Address:

William Humphries
AECOM
Two City Center
Suite 200
Portland,ME 04101
william.humphries@aecom.com

Primary Invoice Address:

Accounts Payable
AECOM
PO Box 5604

Glen Allen,VA 23058-5604

Report CC Addresses:
Invoice CC Addresses:

Michael DeChiara
AECOM Environment
701 Edgewater Drive

Wakefield,MA 01880-5371

Login Information:

ANALYSIS INSTRUCTIONS	:	Non-DoD, 8260B/6020
CHECK NO.	:	
CLIENT PO#	:	non-PO;TO:0010,PN:60565200
CLIENT PROJECT MANAGE	:	William Humphries
CONTRACT	:	W912WJ-17-D-0003
COOLER TEMPERATURE	:	1.2, 1.8, 0.7
DELIVERY SERVICES	:	KAS
EDD FORMAT	:	KAS135QC-CSV
LOGIN INITIALS	:	JCB
PM	:	HHM
PROJECT NAME	:	New Bedford Harbor
QC LEVEL	:	IV
REPORT INSTRUCTIONS	:	No HC. Email PDF and EDD to William, Mary.OConnellKozik@aecom.com, Leslie.Logan@aecom.com and kit.williams@aecom.com. Email invoice to william.humphries@aecom.com and Michael.DeChiara@aecom.com.
SDG ID	:	
SDG STATUS	:	
VERBAL TAT	:	

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL9735-1	MW01-100418	04-OCT-18 11:00	05-OCT-18			17-OCT-18	07-NOV-18

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	COURIER-BILLING				
Aqueous	S	SM2540D-TSS	11-OCT-18	250mL Plastic		
Aqueous	S	SW3010MS-PREP	02-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-CADMIUM	02-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-CHROMIUM	02-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-COPPER	02-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-LEAD	02-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW8082-S	03-NOV-18	1L N-Amber Glass		
Aqueous	S	SW8260-S	18-OCT-18	40mL Vial+HCl		

SL9735-2	MW03-100318	03-OCT-18 17:00	05-OCT-18			17-OCT-18	07-NOV-18

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SM2540D-TSS	10-OCT-18	250mL Plastic		
Aqueous	S	SW3010MS-PREP	01-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-CADMIUM	01-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-CHROMIUM	01-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-COPPER	01-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-LEAD	01-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW8082-S	02-NOV-18	1L N-Amber Glass		
Aqueous	S	SW8260-S	17-OCT-18	40mL Vial+HCl		

REISSUE

Login Number: SL9735

Quote/Incoming: AECOM-NBH

Account: METCAL001 Web
AECOM Environment

Project: AECOM-NBH
Mod1 BASE Tasks

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL9735-3	MW04A-100318	03-OCT-18 13:20	05-OCT-18			17-OCT-18	07-NOV-18

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SM2540D-TSS	10-OCT-18	250mL Plastic		
Aqueous	S	SW3010MS-PREP	01-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-CADMIUM	01-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-CHROMIUM	01-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-COPPER	01-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-LEAD	01-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW8082-S	02-NOV-18	1L N-Amber Glass		
Aqueous	S	SW8260-S	17-OCT-18	40mL Vial+HCl		

SL9735-4	MW05-100318	03-OCT-18 14:00	05-OCT-18			17-OCT-18	07-NOV-18

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SM2540D-TSS	10-OCT-18	250mL Plastic		
Aqueous	S	SW3010MS-PREP	01-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-CADMIUM	01-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-CHROMIUM	01-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-COPPER	01-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-LEAD	01-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW8082-S	02-NOV-18	1L N-Amber Glass		
Aqueous	S	SW8260-S	17-OCT-18	40mL Vial+HCl		

SL9735-5	MW05-100318-REP	03-OCT-18 14:10	05-OCT-18			17-OCT-18	07-NOV-18

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SM2540D-TSS	10-OCT-18	250mL Plastic		
Aqueous	S	SW3010MS-PREP	01-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-CADMIUM	01-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-CHROMIUM	01-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-COPPER	01-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-LEAD	01-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW8082-S	02-NOV-18	1L N-Amber Glass		
Aqueous	S	SW8260-S	17-OCT-18	40mL Vial+HCl		

SL9735-6	MW06-100418	04-OCT-18 10:15	05-OCT-18			17-OCT-18	07-NOV-18

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SM2540D-TSS	11-OCT-18	250mL Plastic		
Aqueous	S	SW3010MS-PREP	02-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-CADMIUM	02-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-CHROMIUM	02-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-COPPER	02-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-LEAD	02-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW8082-S	03-NOV-18	1L N-Amber Glass		
Aqueous	S	SW8260-S	18-OCT-18	40mL Vial+HCl		

SL9735-7	MW07A-100318	03-OCT-18 12:05	05-OCT-18			17-OCT-18	07-NOV-18

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SM2540D-TSS	10-OCT-18	250mL Plastic		**MS/MSD**
Aqueous	S	SW3010MS-PREP	01-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-CADMIUM	01-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-CHROMIUM	01-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-COPPER	01-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-LEAD	01-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW8082-S	02-NOV-18	1L N-Amber Glass		
Aqueous	S	SW8260-S	17-OCT-18	40mL Vial+HCl		

Login Number: SL9735

Quote/Incoming: AECOM-NBH

Account: METCAL001 Web
AECOM Environment

Project: AECOM-NBH
Mod1 BASE Tasks

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL9735-8	EB-001-100318	03-OCT-18 10:00	05-OCT-18			17-OCT-18	07-NOV-18

Matrix		*Product*	*Hold Date (shortest)*	*Bottle Type*	*Bottle Count*	*Comments*
Aqueous	S	SW3010MS-PREP	01-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-CADMIUM	01-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-CHROMIUM	01-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-COPPER	01-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW6020-LEAD	01-APR-19	250mL Plastic+HNO3		
Aqueous	S	SW8082-S	02-NOV-18	1L N-Amber Glass		
Aqueous	S	SW8260-S	17-OCT-18	40mL Vial+HCl		

SL9735-9	TB-001-092818	03-OCT-18 00:00	05-OCT-18			17-OCT-18	07-NOV-18

Matrix		*Product*	*Hold Date (shortest)*	*Bottle Type*	*Bottle Count*	*Comments*
Aqueous	S	SW8260-S	17-OCT-18	40mL Vial+HCl		

Total Samples: 9 ***Total Analyses: 65***

SAMPLE DATA SUMMARY PACKAGE

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

METALS SAMPLE FLAGGING

FLAG	SPECIFIED MEANING
E	The reported value is estimated because of the presence of interference (as indicated by serial dilution).
N	The pre-digestion spiked sample recovery is not within control limits.
*	The duplicate sample analysis relative percent difference (RPD) is not within control limits.
B	Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.
A	The post-digestion spiked sample recovery is not within control limits.
•	Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits.
U	The analyte was not detected above the specified level. This level may be the Limit of Quantitation (LOQ) (previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client. Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.
J	The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ) (previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).
Q	One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV).

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL "U" LOQ or "U" LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level (PQL) or LOQ could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

H_ Please note that the regulatory holding time for _____ is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H1 - pH H2 - DO H3 - sulfite H4 - residual chlorine

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

M1 The matrix spike and/or matrix spike duplicate recovery performed on this sample was outside of the laboratory acceptance criteria. Sample matrix is suspected. The laboratory criteria was met for the Laboratory Control Sample (LCS) analyzed concurrently with this sample.

M2 The matrix spike and/or matrix spike duplicate recovery was outside of the laboratory acceptance criteria. The native sample concentration is greater than four times the spike added concentration so the spike added could not be distinguished from the native sample concentration.

R1 The relative percent difference (RPD) between the duplicate analyses performed on this sample was outside of the laboratory acceptance criteria (when both values are greater than ten times the PQL).

MCL	Maximum Contaminant Level	NL	No limit
NFL	No Free Liquid Present	FLP	Free Liquid Present
NOD	No Odor Detected	TON	Threshold Odor Number

D-1 As required by Method 5210B, APHA Standard Methods for the Examination of Water and Wastewater (21st edition), the BOD value reported for this sample is 'qualified' because the check standard run concurrently with the sample analysis did not meet the criteria specified in the method (198 +/- 30.5 mg/L). These results may not be reportable for compliance purposes.

D-2 The measured final dissolved oxygen concentrations of all dilutions were less than the method-specified limit of 1 mg/L. The reported BOD result was calculated assuming a final oxygen concentration equal to 1 mg/L. The reported value should be considered a minimum value.

D-3 The dilution water used to prepare this sample did not meet the method and/or regulatory criteria of less than 0.2 or 0.4 mg/L dissolved oxygen (DO) uptake over the five day period of incubation. These results may not be reportable for compliance purposes.

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-1
Client ID: MW01-100418
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7750.D

Sample Date: 04-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Dichlorodifluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Chloromethane	U	2.0	ug/L	1	2	2.0	0.36
Vinyl Chloride	U	2.0	ug/L	1	2	2.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	2.0	ug/L	1	2	2.0	0.55
Trichlorofluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Diethyl Ether	U	1.0	ug/L	1	1	1.0	0.40
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
Methyl tert-butyl Ether	U	1.0	ug/L	1	1	1.0	0.36
Di-Isopropyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
Ethyl Tertiary-Butyl Ether	U	1.0	ug/L	1	1	1.0	0.23
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
2,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromochloromethane	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
Tetrahydrofuran	U	5.0	ug/L	1	5	5.0	1.7
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
1,1-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.21
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
Tertiary-Amyl Methyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
Dibromomethane	U	1.0	ug/L	1	1	1.0	0.46
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
1,4-Dioxane	U	100	ug/L	1	100	100	8.8
Toluene	U	1.0	ug/L	1	1	1.0	0.27

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-1
Client ID: MW01-100418
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7750.D

Sample Date: 04-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
1,3-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.22
1,2-Dibromoethane	U	1.0	ug/L	1	1	1.0	0.22
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,1,1,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.19
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23
Isopropylbenzene	U	1.0	ug/L	1	1	1.0	0.23
Bromobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Propylbenzene	U	1.0	ug/L	1	1	1.0	0.26
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
1,3,5-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.20
2-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.20
1,2,3-Trichloropropane	U	1.0	ug/L	1	1	1.0	0.19
4-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.26
tert-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.31
1,2,4-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.19
P-Isopropyltoluene	U	1.0	ug/L	1	1	1.0	0.25
1,3-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.26
1,4-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.23
sec-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.15
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	1	1	1.0	0.50
Hexachlorobutadiene	U	1.0	ug/L	1	1	1.0	0.52
1,2,4-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.37
Naphthalene	U	1.0	ug/L	1	1	1.0	0.30

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-1
Client ID: MW01-100418
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7750.D

Sample Date: 04-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,2,3-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.27
P-Bromofluorobenzene		103.	%				
Toluene-d8		104.	%				
1,2-Dichloroethane-d4		129.	%				
Dibromofluoromethane		116.	%				

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-2
Client ID: MW03-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7751.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Dichlorodifluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Chloromethane	U	2.0	ug/L	1	2	2.0	0.36
Vinyl Chloride	U	2.0	ug/L	1	2	2.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	2.0	ug/L	1	2	2.0	0.55
Trichlorofluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Diethyl Ether	U	1.0	ug/L	1	1	1.0	0.40
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
Methyl tert-butyl Ether	U	1.0	ug/L	1	1	1.0	0.36
Di-Isopropyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
Ethyl Tertiary-Butyl Ether	U	1.0	ug/L	1	1	1.0	0.23
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
2,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromochloromethane	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
Tetrahydrofuran	U	5.0	ug/L	1	5	5.0	1.7
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
1,1-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.21
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
Tertiary-Amyl Methyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
Dibromomethane	U	1.0	ug/L	1	1	1.0	0.46
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
1,4-Dioxane	U	100	ug/L	1	100	100	8.8
Toluene	U	1.0	ug/L	1	1	1.0	0.27

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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-2
Client ID: MW03-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7751.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene		2.5	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
1,3-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.22
1,2-Dibromoethane	U	1.0	ug/L	1	1	1.0	0.22
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,1,1,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.19
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23
Isopropylbenzene	U	1.0	ug/L	1	1	1.0	0.23
Bromobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Propylbenzene	U	1.0	ug/L	1	1	1.0	0.26
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
1,3,5-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.20
2-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.20
1,2,3-Trichloropropane	U	1.0	ug/L	1	1	1.0	0.19
4-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.26
tert-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.31
1,2,4-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.19
P-Isopropyltoluene	U	1.0	ug/L	1	1	1.0	0.25
1,3-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.26
1,4-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.23
sec-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.15
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	1	1	1.0	0.50
Hexachlorobutadiene	U	1.0	ug/L	1	1	1.0	0.52
1,2,4-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.37
Naphthalene	U	1.0	ug/L	1	1	1.0	0.30

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-2
Client ID: MW03-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7751.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,2,3-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.27
P-Bromofluorobenzene		100.	%				
Toluene-d8		103.	%				
1,2-Dichloroethane-d4		130.	%				
Dibromofluoromethane		116.	%				

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-3
Client ID: MW04A-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7752.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Dichlorodifluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Chloromethane	U	2.0	ug/L	1	2	2.0	0.36
Vinyl Chloride	U	2.0	ug/L	1	2	2.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	2.0	ug/L	1	2	2.0	0.55
Trichlorofluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Diethyl Ether	U	1.0	ug/L	1	1	1.0	0.40
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
Methyl tert-butyl Ether	U	1.0	ug/L	1	1	1.0	0.36
Di-Isopropyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
Ethyl Tertiary-Butyl Ether	U	1.0	ug/L	1	1	1.0	0.23
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
2,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromochloromethane	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
Tetrahydrofuran	U	5.0	ug/L	1	5	5.0	1.7
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
1,1-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.21
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
Tertiary-Amyl Methyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
Dibromomethane	U	1.0	ug/L	1	1	1.0	0.46
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
1,4-Dioxane	U	100	ug/L	1	100	100	8.8
Toluene	U	1.0	ug/L	1	1	1.0	0.27

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-3
Client ID: MW04A-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7752.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
1,3-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.22
1,2-Dibromoethane	U	1.0	ug/L	1	1	1.0	0.22
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,1,1,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.19
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23
Isopropylbenzene	U	1.0	ug/L	1	1	1.0	0.23
Bromobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Propylbenzene	U	1.0	ug/L	1	1	1.0	0.26
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
1,3,5-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.20
2-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.20
1,2,3-Trichloropropane	U	1.0	ug/L	1	1	1.0	0.19
4-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.26
tert-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.31
1,2,4-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.19
P-Isopropyltoluene	U	1.0	ug/L	1	1	1.0	0.25
1,3-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.26
1,4-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.23
sec-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.15
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	1	1	1.0	0.50
Hexachlorobutadiene	U	1.0	ug/L	1	1	1.0	0.52
1,2,4-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.37
Naphthalene	U	1.0	ug/L	1	1	1.0	0.30

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-3
Client ID: MW04A-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7752.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,2,3-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.27
P-Bromofluorobenzene		101.	%				
Toluene-d8		102.	%				
1,2-Dichloroethane-d4		129.	%				
Dibromofluoromethane		115.	%				

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Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-4
Client ID: MW05-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7753.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Dichlorodifluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Chloromethane	U	2.0	ug/L	1	2	2.0	0.36
Vinyl Chloride	U	2.0	ug/L	1	2	2.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	2.0	ug/L	1	2	2.0	0.55
Trichlorofluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Diethyl Ether	U	1.0	ug/L	1	1	1.0	0.40
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	J	0.98	ug/L	1	1	1.0	0.25
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
Methyl tert-butyl Ether	U	1.0	ug/L	1	1	1.0	0.36
Di-Isopropyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
Ethyl Tertiary-Butyl Ether	U	1.0	ug/L	1	1	1.0	0.23
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
2,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromochloromethane	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
Tetrahydrofuran	U	5.0	ug/L	1	5	5.0	1.7
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
1,1-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.21
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
Tertiary-Amyl Methyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
Dibromomethane	U	1.0	ug/L	1	1	1.0	0.46
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
1,4-Dioxane	U	100	ug/L	1	100	100	8.8
Toluene	U	1.0	ug/L	1	1	1.0	0.27

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Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-4
Client ID: MW05-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7753.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
1,3-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.22
1,2-Dibromoethane	U	1.0	ug/L	1	1	1.0	0.22
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,1,1,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.19
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23
Isopropylbenzene	U	1.0	ug/L	1	1	1.0	0.23
Bromobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Propylbenzene	U	1.0	ug/L	1	1	1.0	0.26
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
1,3,5-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.20
2-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.20
1,2,3-Trichloropropane	U	1.0	ug/L	1	1	1.0	0.19
4-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.26
tert-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.31
1,2,4-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.19
P-Isopropyltoluene	U	1.0	ug/L	1	1	1.0	0.25
1,3-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.26
1,4-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.23
sec-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.15
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	1	1	1.0	0.50
Hexachlorobutadiene	U	1.0	ug/L	1	1	1.0	0.52
1,2,4-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.37
Naphthalene	U	1.0	ug/L	1	1	1.0	0.30

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-4
Client ID: MW05-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7753.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,2,3-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.27
P-Bromofluorobenzene		98.1	%				
Toluene-d8		104.	%				
1,2-Dichloroethane-d4		120.	%				
Dibromofluoromethane		117.	%				

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-5
Client ID: MW05-100318-REP
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7754.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Dichlorodifluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Chloromethane	U	2.0	ug/L	1	2	2.0	0.36
Vinyl Chloride	U	2.0	ug/L	1	2	2.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	2.0	ug/L	1	2	2.0	0.55
Trichlorofluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Diethyl Ether	U	1.0	ug/L	1	1	1.0	0.40
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
Methyl tert-butyl Ether	U	1.0	ug/L	1	1	1.0	0.36
Di-Isopropyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
Ethyl Tertiary-Butyl Ether	U	1.0	ug/L	1	1	1.0	0.23
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
2,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromochloromethane	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
Tetrahydrofuran	U	5.0	ug/L	1	5	5.0	1.7
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
1,1-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.21
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
Tertiary-Amyl Methyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
Dibromomethane	U	1.0	ug/L	1	1	1.0	0.46
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
1,4-Dioxane	U	100	ug/L	1	100	100	8.8
Toluene	U	1.0	ug/L	1	1	1.0	0.27

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-5
Client ID: MW05-100318-REP
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7754.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
1,3-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.22
1,2-Dibromoethane	U	1.0	ug/L	1	1	1.0	0.22
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,1,1,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.19
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23
Isopropylbenzene	U	1.0	ug/L	1	1	1.0	0.23
Bromobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Propylbenzene	U	1.0	ug/L	1	1	1.0	0.26
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
1,3,5-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.20
2-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.20
1,2,3-Trichloropropane	U	1.0	ug/L	1	1	1.0	0.19
4-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.26
tert-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.31
1,2,4-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.19
P-Isopropyltoluene	U	1.0	ug/L	1	1	1.0	0.25
1,3-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.26
1,4-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.23
sec-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.15
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	1	1	1.0	0.50
Hexachlorobutadiene	U	1.0	ug/L	1	1	1.0	0.52
1,2,4-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.37
Naphthalene	U	1.0	ug/L	1	1	1.0	0.30

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Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-5
Client ID: MW05-100318-REP
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7754.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,2,3-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.27
P-Bromofluorobenzene		101.	%				
Toluene-d8		103.	%				
1,2-Dichloroethane-d4		125.	%				
Dibromofluoromethane		112.	%				

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Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-6
Client ID: MW06-100418
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7755.D

Sample Date: 04-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Dichlorodifluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Chloromethane	U	2.0	ug/L	1	2	2.0	0.36
Vinyl Chloride	U	2.0	ug/L	1	2	2.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	2.0	ug/L	1	2	2.0	0.55
Trichlorofluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Diethyl Ether	U	1.0	ug/L	1	1	1.0	0.40
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
Methyl tert-butyl Ether	U	1.0	ug/L	1	1	1.0	0.36
Di-Isopropyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
Ethyl Tertiary-Butyl Ether	U	1.0	ug/L	1	1	1.0	0.23
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
2,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromochloromethane	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
Tetrahydrofuran	U	5.0	ug/L	1	5	5.0	1.7
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
1,1-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.21
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
Tertiary-Amyl Methyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
Dibromomethane	U	1.0	ug/L	1	1	1.0	0.46
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
1,4-Dioxane	U	100	ug/L	1	100	100	8.8
Toluene	U	1.0	ug/L	1	1	1.0	0.27

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Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-6
Client ID: MW06-100418
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7755.D

Sample Date: 04-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
1,3-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.22
1,2-Dibromoethane	U	1.0	ug/L	1	1	1.0	0.22
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,1,1,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.19
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23
Isopropylbenzene	U	1.0	ug/L	1	1	1.0	0.23
Bromobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Propylbenzene	U	1.0	ug/L	1	1	1.0	0.26
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
1,3,5-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.20
2-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.20
1,2,3-Trichloropropane	U	1.0	ug/L	1	1	1.0	0.19
4-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.26
tert-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.31
1,2,4-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.19
P-Isopropyltoluene	U	1.0	ug/L	1	1	1.0	0.25
1,3-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.26
1,4-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.23
sec-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.15
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	1	1	1.0	0.50
Hexachlorobutadiene	U	1.0	ug/L	1	1	1.0	0.52
1,2,4-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.37
Naphthalene	U	1.0	ug/L	1	1	1.0	0.30

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Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-6
Client ID: MW06-100418
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7755.D

Sample Date: 04-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,2,3-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.27
P-Bromofluorobenzene		102.	%				
Toluene-d8		102.	%				
1,2-Dichloroethane-d4		126.	%				
Dibromofluoromethane		112.	%				

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Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-7
Client ID: MW07A-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7756.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Dichlorodifluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Chloromethane	U	2.0	ug/L	1	2	2.0	0.36
Vinyl Chloride	U	2.0	ug/L	1	2	2.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	2.0	ug/L	1	2	2.0	0.55
Trichlorofluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Diethyl Ether	U	1.0	ug/L	1	1	1.0	0.40
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
Methyl tert-butyl Ether	U	1.0	ug/L	1	1	1.0	0.36
Di-Isopropyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
Ethyl Tertiary-Butyl Ether	U	1.0	ug/L	1	1	1.0	0.23
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
2,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromochloromethane	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
Tetrahydrofuran	U	5.0	ug/L	1	5	5.0	1.7
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
1,1-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.21
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
Tertiary-Amyl Methyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
Dibromomethane	U	1.0	ug/L	1	1	1.0	0.46
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
1,4-Dioxane	U	100	ug/L	1	100	100	8.8
Toluene	U	1.0	ug/L	1	1	1.0	0.27

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-7
Client ID: MW07A-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7756.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
1,3-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.22
1,2-Dibromoethane	U	1.0	ug/L	1	1	1.0	0.22
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,1,1,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.19
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23
Isopropylbenzene	U	1.0	ug/L	1	1	1.0	0.23
Bromobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Propylbenzene	U	1.0	ug/L	1	1	1.0	0.26
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
1,3,5-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.20
2-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.20
1,2,3-Trichloropropane	U	1.0	ug/L	1	1	1.0	0.19
4-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.26
tert-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.31
1,2,4-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.19
P-Isopropyltoluene	U	1.0	ug/L	1	1	1.0	0.25
1,3-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.26
1,4-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.23
sec-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.15
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	1	1	1.0	0.50
Hexachlorobutadiene	U	1.0	ug/L	1	1	1.0	0.52
1,2,4-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.37
Naphthalene	U	1.0	ug/L	1	1	1.0	0.30

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Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-7
Client ID: MW07A-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7756.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,2,3-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.27
P-Bromofluorobenzene		101.	%				
Toluene-d8		105.	%				
1,2-Dichloroethane-d4		126.	%				
Dibromofluoromethane		114.	%				

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Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-8
Client ID: EB-001-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7746.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Dichlorodifluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Chloromethane	U	2.0	ug/L	1	2	2.0	0.36
Vinyl Chloride	U	2.0	ug/L	1	2	2.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	2.0	ug/L	1	2	2.0	0.55
Trichlorofluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Diethyl Ether	U	1.0	ug/L	1	1	1.0	0.40
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
Methyl tert-butyl Ether	U	1.0	ug/L	1	1	1.0	0.36
Di-Isopropyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
Ethyl Tertiary-Butyl Ether	U	1.0	ug/L	1	1	1.0	0.23
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
2,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromochloromethane	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
Tetrahydrofuran	U	5.0	ug/L	1	5	5.0	1.7
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
1,1-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.21
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
Tertiary-Amyl Methyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
Dibromomethane	U	1.0	ug/L	1	1	1.0	0.46
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
1,4-Dioxane	U	100	ug/L	1	100	100	8.8
Toluene	J	0.44	ug/L	1	1	1.0	0.27

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Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-8
Client ID: EB-001-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7746.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
1,3-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.22
1,2-Dibromoethane	U	1.0	ug/L	1	1	1.0	0.22
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,1,1,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.19
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23
Isopropylbenzene	U	1.0	ug/L	1	1	1.0	0.23
Bromobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Propylbenzene	U	1.0	ug/L	1	1	1.0	0.26
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
1,3,5-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.20
2-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.20
1,2,3-Trichloropropane	U	1.0	ug/L	1	1	1.0	0.19
4-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.26
tert-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.31
1,2,4-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.19
P-Isopropyltoluene	U	1.0	ug/L	1	1	1.0	0.25
1,3-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.26
1,4-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.23
sec-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.15
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	1	1	1.0	0.50
Hexachlorobutadiene	U	1.0	ug/L	1	1	1.0	0.52
1,2,4-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.37
Naphthalene	U	1.0	ug/L	1	1	1.0	0.30

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-8
Client ID: EB-001-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7746.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,2,3-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.27
P-Bromofluorobenzene		102.	%				
Toluene-d8		104.	%				
1,2-Dichloroethane-d4		127.	%				
Dibromofluoromethane		115.	%				

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-9
Client ID: TB-001-092818
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7745.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 19-DEC-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Dichlorodifluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Chloromethane	U	2.0	ug/L	1	2	2.0	0.36
Vinyl Chloride	U	2.0	ug/L	1	2	2.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	2.0	ug/L	1	2	2.0	0.55
Trichlorofluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Diethyl Ether	U	1.0	ug/L	1	1	1.0	0.40
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
Methyl tert-butyl Ether	U	1.0	ug/L	1	1	1.0	0.36
Di-Isopropyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
Ethyl Tertiary-Butyl Ether	U	1.0	ug/L	1	1	1.0	0.23
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
2,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromochloromethane	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
Tetrahydrofuran	U	5.0	ug/L	1	5	5.0	1.7
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
1,1-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.21
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
Tertiary-Amyl Methyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
Dibromomethane	U	1.0	ug/L	1	1	1.0	0.46
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
1,4-Dioxane	U	100	ug/L	1	100	100	8.8
Toluene	U	1.0	ug/L	1	1	1.0	0.27

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REISSUE **Katahdin Analytical Services A0000029**

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-9
Client ID: TB-001-092818
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7745.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 19-DEC-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
1,3-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.22
1,2-Dibromoethane	U	1.0	ug/L	1	1	1.0	0.22
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,1,1,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.19
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23
Isopropylbenzene	U	1.0	ug/L	1	1	1.0	0.23
Bromobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Propylbenzene	U	1.0	ug/L	1	1	1.0	0.26
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
1,3,5-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.20
2-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.20
1,2,3-Trichloropropane	U	1.0	ug/L	1	1	1.0	0.19
4-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.26
tert-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.31
1,2,4-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.19
P-Isopropyltoluene	U	1.0	ug/L	1	1	1.0	0.25
1,3-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.26
1,4-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.23
sec-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.15
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	1	1	1.0	0.50
Hexachlorobutadiene	U	1.0	ug/L	1	1	1.0	0.52
1,2,4-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.37
Naphthalene	U	1.0	ug/L	1	1	1.0	0.30

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REISSUE

Katahdin Analytical Services A0000030

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-9
Client ID: TB-001-092818
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7745.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 19-DEC-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,2,3-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.27
P-Bromofluorobenzene		99.8	%				
Toluene-d8		102.	%				
1,2-Dichloroethane-d4		120.	%				
Dibromofluoromethane		114.	%				

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-1RE
Client ID: MW01-100418
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: 7MA496.D

Sample Date: 04-OCT-18
Received Date: 05-OCT-18
Extract Date: 23-JAN-19
Extracted By: BP/JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG245126

Analysis Date: 23-JAN-19
Analyst: BF
Analysis Method: SW846 8082A
Matrix: AQ
% Solids: NA
Report Date: 24-JAN-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Aroclor-1016	U	0.048	ug/L	1	.5	0.048	0.014
Aroclor-1221	U	0.048	ug/L	1	.5	0.048	0.019
Aroclor-1232	U	0.048	ug/L	1	.5	0.048	0.0086
Aroclor-1242	U	0.048	ug/L	1	.5	0.048	0.017
Aroclor-1248	U	0.048	ug/L	1	.5	0.048	0.019
Aroclor-1254	U	0.048	ug/L	1	.5	0.048	0.0079
Aroclor-1260	J	0.036	ug/L	1	.5	0.048	0.016
Total PCBs	J	0.036	ug/L	1	3.5	0.34	0.0079
Tetrachloro-M-Xylene		109.	%				
Decachlorobiphenyl		69.4	%				

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ANALYTICAL SERVICES

Form 10
Pesticide Identification Summary

Lab Name : Katahdin Analytical Services
Project : New Bedford Harbor

SDG : SL9735
Lab Sample ID : SL9735-1RE
Client Sample ID : MW01-100418

Column A
Instrument ID : GC07
Date Analyzed : 01/23/19
Time Analyzed : 19:12

Column B
Instrument ID : GC07
Date Analyzed : 01/23/19
Time Analyzed : 19:12

Analyte	Peak	Column	RT	Concentration	Mean	RPD
Aroclor-1260	1	A	15.19	.0229		
	2	A	16.49	.0225		
	3	A	17.97	.0314		
	4	A	18.61	.0553		
	5	A	19.99	.0424	.0349	
	1	B	15.21	.0225		
	2	B	16.52	.0193		
	3	B	17.88	.023		
	4	B	18.69	.0639		
	5	B	19.93	.0488	.0355	1.7

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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-2RE
Client ID: MW03-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: 7MA497.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 23-JAN-19
Extracted By: BP/JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG245126

Analysis Date: 23-JAN-19
Analyst: BF
Analysis Method: SW846 8082A
Matrix: AQ
% Solids: NA
Report Date: 24-JAN-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Aroclor-1016	U	0.048	ug/L	1	.5	0.048	0.014
Aroclor-1221	U	0.048	ug/L	1	.5	0.048	0.019
Aroclor-1232	U	0.048	ug/L	1	.5	0.048	0.0085
Aroclor-1242	U	0.048	ug/L	1	.5	0.048	0.017
Aroclor-1248	U	0.048	ug/L	1	.5	0.048	0.019
Aroclor-1254	U	0.048	ug/L	1	.5	0.048	0.0078
Aroclor-1260	U	0.048	ug/L	1	.5	0.048	0.016
Total PCBs	U	0.33	ug/L	1	3.5	0.33	0.0078
Tetrachloro-M-Xylene		89.2	%				
Decachlorobiphenyl		44.7	%				

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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-3RE
Client ID: MW04A-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: 7MA498.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 23-JAN-19
Extracted By: BP/JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG245126

Analysis Date: 23-JAN-19
Analyst: BF
Analysis Method: SW846 8082A
Matrix: AQ
% Solids: NA
Report Date: 24-JAN-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Aroclor-1016	U	0.049	ug/L	1	.5	0.049	0.015
Aroclor-1221	U	0.049	ug/L	1	.5	0.049	0.020
Aroclor-1232	U	0.049	ug/L	1	.5	0.049	0.0087
Aroclor-1242	U	0.049	ug/L	1	.5	0.049	0.018
Aroclor-1248	U	0.049	ug/L	1	.5	0.049	0.020
Aroclor-1254	U	0.049	ug/L	1	.5	0.049	0.0080
Aroclor-1260	J	0.026	ug/L	1	.5	0.049	0.017
Total PCBs	J	0.026	ug/L	1	3.5	0.34	0.0080
Tetrachloro-M-Xylene		73.8	%				
Decachlorobiphenyl		46.8	%				

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Katahdin
ANALYTICAL SERVICES

Form 10
Pesticide Identification Summary

Lab Name : Katahdin Analytical Services
Project : New Bedford Harbor

SDG : SL9735
Lab Sample ID : SL9735-3RE
Client Sample ID : MW04A-100318

Column A
Instrument ID : GC07
Date Analyzed : 01/23/19
Time Analyzed : 20:07

Column B
Instrument ID : GC07
Date Analyzed : 01/23/19
Time Analyzed : 20:07

Analyte	Peak	Column	RT	Concentration	Mean	RPD
Aroclor-1260	1	A	15.2	.0243		
	2	A	16.5	.0213		
	3	A	17.97	.0228		
	4	A	18.61	.0262		
	5	A	19.99	.0344	.0258	
	1	B	15.22	.013		
	2	B	16.52	.0162		
	3	B	17.89	.0173		
	4	B	18.7	0		
	5	B	19.93	.0338	.0201	24.8

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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-4RE
Client ID: MW05-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: 7MA499.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 23-JAN-19
Extracted By: BP/JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG245126

Analysis Date: 23-JAN-19
Analyst: BF
Analysis Method: SW846 8082A
Matrix: AQ
% Solids: NA
Report Date: 24-JAN-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Aroclor-1016	U	0.048	ug/L	1	.5	0.048	0.014
Aroclor-1221	U	0.048	ug/L	1	.5	0.048	0.019
Aroclor-1232	U	0.048	ug/L	1	.5	0.048	0.0085
Aroclor-1242	U	0.048	ug/L	1	.5	0.048	0.017
Aroclor-1248	U	0.048	ug/L	1	.5	0.048	0.019
Aroclor-1254	U	0.048	ug/L	1	.5	0.048	0.0078
Aroclor-1260		0.068	ug/L	1	.5	0.048	0.016
Total PCBs	J	0.068	ug/L	1	3.5	0.33	0.0078
Tetrachloro-M-Xylene		103.	%				
Decachlorobiphenyl		65.6	%				

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Katahdin
ANALYTICAL SERVICES

Form 10
Pesticide Identification Summary

Lab Name : Katahdin Analytical Services
Project : New Bedford Harbor

SDG : SL9735
Lab Sample ID : SL9735-4RE
Client Sample ID : MW05-100318

Column A
Instrument ID : GC07
Date Analyzed : 01/23/19
Time Analyzed : 20:35

Column B
Instrument ID : GC07
Date Analyzed : 01/23/19
Time Analyzed : 20:35

Analyte	Peak	Column	RT	Concentration	Mean	RPD
Aroclor-1260	1	A	15.19	.0489		
	2	A	16.49	.0378		
	3	A	17.98	.0763		
	4	A	18.61	.0813		
	5	A	20	.0975	.0684	
	1	B	15.22	.0465		
	2	B	16.52	.0562		
	3	B	17.89	.0676		
	4	B	18.7	0		
	5	B	19.93	.0644	.0587	15.3

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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-5RE
Client ID: MW05-100318-REP
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: 7MA500.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 23-JAN-19
Extracted By: BP/JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG245126

Analysis Date: 23-JAN-19
Analyst: BF
Analysis Method: SW846 8082A
Matrix: AQ
% Solids: NA
Report Date: 24-JAN-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Aroclor-1016	U	0.048	ug/L	1	.5	0.048	0.014
Aroclor-1221	U	0.048	ug/L	1	.5	0.048	0.019
Aroclor-1232	U	0.048	ug/L	1	.5	0.048	0.0085
Aroclor-1242	U	0.048	ug/L	1	.5	0.048	0.017
Aroclor-1248	U	0.048	ug/L	1	.5	0.048	0.019
Aroclor-1254	U	0.048	ug/L	1	.5	0.048	0.0078
Aroclor-1260	U	0.048	ug/L	1	.5	0.048	0.016
Total PCBs	U	0.33	ug/L	1	3.5	0.33	0.0078
Tetrachloro-M-Xylene		95.6	%				
Decachlorobiphenyl		63.6	%				

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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-6RE
Client ID: MW06-100418
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: 7MA501.D

Sample Date: 04-OCT-18
Received Date: 05-OCT-18
Extract Date: 23-JAN-19
Extracted By: BP/JM
Extraction Method: SW846 3510C
Lab Prep Batch: WG245126

Analysis Date: 23-JAN-19
Analyst: BF
Analysis Method: SW846 8082A
Matrix: AQ
% Solids: NA
Report Date: 24-JAN-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Aroclor-1016	U	0.048	ug/L	1	.5	0.048	0.014
Aroclor-1221	U	0.048	ug/L	1	.5	0.048	0.019
Aroclor-1232	U	0.048	ug/L	1	.5	0.048	0.0085
Aroclor-1242	U	0.048	ug/L	1	.5	0.048	0.017
Aroclor-1248	U	0.048	ug/L	1	.5	0.048	0.019
Aroclor-1254	U	0.048	ug/L	1	.5	0.048	0.0078
Aroclor-1260	JJ	0.024	ug/L	1	.5	0.048	0.016
Total PCBs	J	0.024	ug/L	1	3.5	0.33	0.0078
Tetrachloro-M-Xylene		102.	%				
Decachlorobiphenyl		71.4	%				

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Katahdin
ANALYTICAL SERVICES

Form 10
Pesticide Identification Summary

Lab Name : Katahdin Analytical Services
Project : New Bedford Harbor

SDG : SL9735
Lab Sample ID : SL9735-6RE
Client Sample ID : MW06-100418

Column A
Instrument ID : GC07
Date Analyzed : 01/23/19
Time Analyzed : 21:31

Column B
Instrument ID : GC07
Date Analyzed : 01/23/19
Time Analyzed : 21:31

Analyte	Peak	Column	RT	Concentration	Mean	RPD
Aroclor-1260	1	A	15.19	.0212		
	2	A	16.49	.0192		
	3	A	17.98	.0255		
	4	A	18.61	.0302		
	5	A	20	0	.024	
	1	B	15.21	.0108		
	2	B	16.51	.00307		
	3	B	17.89	.0196		
	4	B	18.7	0		
	5	B	19.93	.0173	.0127	61.6

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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-7RE
Client ID: MW07A-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: 7MA502.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 23-JAN-19
Extracted By: BP/JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG245126

Analysis Date: 23-JAN-19
Analyst: BF
Analysis Method: SW846 8082A
Matrix: AQ
% Solids: NA
Report Date: 24-JAN-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Aroclor-1016	U	0.048	ug/L	1	.5	0.048	0.014
Aroclor-1221	U	0.048	ug/L	1	.5	0.048	0.019
Aroclor-1232	U	0.048	ug/L	1	.5	0.048	0.0085
Aroclor-1242	U	0.048	ug/L	1	.5	0.048	0.017
Aroclor-1248	U	0.048	ug/L	1	.5	0.048	0.019
Aroclor-1254	U	0.048	ug/L	1	.5	0.048	0.0078
Aroclor-1260	J	0.032	ug/L	1	.5	0.048	0.016
Total PCBs	J	0.032	ug/L	1	3.5	0.33	0.0078
Tetrachloro-M-Xylene	*	113.	%				
Decachlorobiphenyl		87.6	%				

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ANALYTICAL SERVICES

Form 10
Pesticide Identification Summary

Lab Name : Katahdin Analytical Services
Project : New Bedford Harbor

SDG : SL9735
Lab Sample ID : SL9735-7RE
Client Sample ID : MW07A-100318

Column A
Instrument ID : GC07
Date Analyzed : 01/23/19
Time Analyzed : 21:58

Column B
Instrument ID : GC07
Date Analyzed : 01/23/19
Time Analyzed : 21:58

Analyte	Peak	Column	RT	Concentration	Mean	RPD
Aroclor-1260	1	A	15.19	.0293		
	2	A	16.49	.0323		
	3	A	17.98	.0346		
	4	A	18.62	.024		
	5	A	20	.0255	.0291	
	1	B	15.21	.024		
	2	B	16.52	.0276		
	3	B	17.89	.0311		
	4	B	18.7	0		
	5	B	19.93	.0436	.0315	7.9

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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-8RE
Client ID: EB-001-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: 7MA503.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 23-JAN-19
Extracted By: BP/JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG245126

Analysis Date: 23-JAN-19
Analyst: BF
Analysis Method: SW846 8082A
Matrix: AQ
% Solids: NA
Report Date: 24-JAN-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Aroclor-1016	U	0.049	ug/L	1	.5	0.049	0.015
Aroclor-1221	U	0.049	ug/L	1	.5	0.049	0.020
Aroclor-1232	U	0.049	ug/L	1	.5	0.049	0.0087
Aroclor-1242	U	0.049	ug/L	1	.5	0.049	0.018
Aroclor-1248	U	0.049	ug/L	1	.5	0.049	0.020
Aroclor-1254	U	0.049	ug/L	1	.5	0.049	0.0080
Aroclor-1260		0.52	ug/L	1	.5	0.049	0.017
Total PCBs		0.52	ug/L	1	3.5	0.34	0.0080
Tetrachloro-M-Xylene		101.	%				
Decachlorobiphenyl		59.1	%				

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ANALYTICAL SERVICES

Form 10
Pesticide Identification Summary

Lab Name : Katahdin Analytical Services
Project : New Bedford Harbor

SDG : SL9735
Lab Sample ID : SL9735-8RE
Client Sample ID : EB-001-100318

Column A
Instrument ID : GC07
Date Analyzed : 01/23/19
Time Analyzed : 22:26

Column B
Instrument ID : GC07
Date Analyzed : 01/23/19
Time Analyzed : 22:26

Analyte	Peak	Column	RT	Concentration	Mean	RPD
Aroclor-1260	1	A	15.19	.399		
	2	A	16.49	.43		
	3	A	17.98	.585		
	4	A	18.61	.556		
	5	A	20	.637	.521	
	1	B	15.21	.336		
	2	B	16.52	.307		
	3	B	17.89	.479		
	4	B	18.7	.509		
	5	B	19.93	.562	.438	17.3

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INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** MW01-100418

Matrix: WATER **SDG Name:** SL9735

Percent Solids: 0.00 **Lab Sample ID:** SL9735-001

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	Adj. PQL	Adj. MDL
7440-43-9	CADMIUM, TOTAL	0.40	J		MS	5	1.0	0.13
7440-47-3	CHROMIUM, TOTAL	2.8	J		MS	5	5.0	0.65
7440-50-8	COPPER, TOTAL	2.8	J		MS	5	3.0	0.43
7439-92-1	LEAD, TOTAL	1.20			MS	5	1.0	0.024

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** MW03-100318

Matrix: WATER **SDG Name:** SL9735

Percent Solids: 0.00 **Lab Sample ID:** SL9735-002

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	Adj. PQL	Adj. MDL
7440-43-9	CADMIUM, TOTAL	0.46	J		MS	5	1.0	0.13
7440-47-3	CHROMIUM, TOTAL	4.4	J		MS	5	5.0	0.65
7440-50-8	COPPER, TOTAL	1.6	J		MS	5	3.0	0.43
7439-92-1	LEAD, TOTAL	0.12	J		MS	5	1.0	0.024

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** MW04A-100318

Matrix: WATER **SDG Name:** SL9735

Percent Solids: 0.00 **Lab Sample ID:** SL9735-003

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	Adj. PQL	Adj. MDL
7440-43-9	CADMIUM, TOTAL	0.14	J		MS	5	1.0	0.13
7440-47-3	CHROMIUM, TOTAL	4.5	J		MS	5	5.0	0.65
7440-50-8	COPPER, TOTAL	4.2			MS	5	3.0	0.43
7439-92-1	LEAD, TOTAL	0.643	J		MS	5	1.0	0.024

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** MW05-100318

Matrix: WATER **SDG Name:** SL9735

Percent Solids: 0.00 **Lab Sample ID:** SL9735-004

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	Adj. PQL	Adj. MDL
7440-43-9	CADMIUM, TOTAL	1.0	U		MS	5	1.0	0.13
7440-47-3	CHROMIUM, TOTAL	5.4			MS	5	5.0	0.65
7440-50-8	COPPER, TOTAL	2.7	J		MS	5	3.0	0.43
7439-92-1	LEAD, TOTAL	0.413	J		MS	5	1.0	0.024

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** MW05-100318-REP

Matrix: WATER **SDG Name:** SL9735

Percent Solids: 0.00 **Lab Sample ID:** SL9735-005

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	Adj. PQL	Adj. MDL
7440-43-9	CADMIUM, TOTAL	1.0	U		MS	5	1.0	0.13
7440-47-3	CHROMIUM, TOTAL	4.1	J		MS	5	5.0	0.65
7440-50-8	COPPER, TOTAL	2.5	J		MS	5	3.0	0.43
7439-92-1	LEAD, TOTAL	0.23	J		MS	5	1.0	0.024

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** MW06-100418

Matrix: WATER **SDG Name:** SL9735

Percent Solids: 0.00 **Lab Sample ID:** SL9735-006

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	Adj. PQL	Adj. MDL
7440-43-9	CADMIUM, TOTAL	1.0	U		MS	5	1.0	0.13
7440-47-3	CHROMIUM, TOTAL	3.0	J		MS	5	5.0	0.65
7440-50-8	COPPER, TOTAL	2.2	J		MS	5	3.0	0.43
7439-92-1	LEAD, TOTAL	0.20	J		MS	5	1.0	0.024

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** MW07A-100318

Matrix: WATER **SDG Name:** SL9735

Percent Solids: 0.00 **Lab Sample ID:** SL9735-007

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	Adj. PQL	Adj. MDL
7440-43-9	CADMIUM, TOTAL	0.91	J		MS	5	1.0	0.13
7440-47-3	CHROMIUM, TOTAL	2.5	J		MS	5	5.0	0.65
7440-50-8	COPPER, TOTAL	3.8			MS	5	3.0	0.43
7439-92-1	LEAD, TOTAL	0.093	J		MS	5	1.0	0.024

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** EB-001-100318

Matrix: WATER **SDG Name:** SL9735

Percent Solids: 0.00 **Lab Sample ID:** SL9735-008

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	Adj. PQL	Adj. MDL
7440-43-9	CADMIUM, TOTAL	1.0	U		MS	5	1.0	0.13
7440-47-3	CHROMIUM, TOTAL	2.0	J		MS	5	5.0	0.65
7440-50-8	COPPER, TOTAL	0.50	J		MS	5	3.0	0.43
7439-92-1	LEAD, TOTAL	0.10	J		MS	5	1.0	0.024

Comments:

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: William Humphries
AECOM
Two City Center
Portland,ME 04101

Lab Sample ID: SL9735-1
Report Date: 05-NOV-18
Client PO: non-PO;TO:0010,PN:60565200
Project: New Bedford Harbor
SDG: SL9735

Sample Description	Matrix	Date Sampled	Date Received
MW01-100418	AQ	04-OCT-18 11:00:00	05-OCT-18

Parameter	Result	Adj PQL	Adj MDL	Anal. Method	QC Batch	Analysis Date	Prep. Method	Prep. Date	Analyst	Footnotes	RPD/RSD
Solids-Nonfilterable Residue	8.0 mg/L	4.0	1.22	SM 2540D	WG238231	09-OCT-18 16:12:00	SM 2540D	08-OCT-18	SC		

Report of Analytical Results

Client: William Humphries
AECOM
Two City Center
Portland,ME 04101

Lab Sample ID: SL9735-2
Report Date: 05-NOV-18
Client PO: non-PO;TO:0010,PN:60565200
Project: New Bedford Harbor
SDG: SL9735

Sample Description	Matrix	Date Sampled	Date Received
MW03-100318	AQ	03-OCT-18 17:00:00	05-OCT-18

Parameter	Result	Adj PQL	Adj MDL	Anal. Method	QC Batch	Analysis Date	Prep. Method	Prep. Date	Analyst	Footnotes	RPD/RSD
Solids-Nonfilterable Residue	15. mg/L	4.0	1.22	SM 2540D	WG238231	09-OCT-18 16:12:00	SM 2540D	08-OCT-18	SC		

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: William Humphries
AECOM
Two City Center
Portland,ME 04101

Lab Sample ID: SL9735-3
Report Date: 05-NOV-18
Client PO: non-PO;TO:0010,PN:60565200
Project: New Bedford Harbor
SDG: SL9735

Sample Description	Matrix	Date Sampled	Date Received
MW04A-100318	AQ	03-OCT-18 13:20:00	05-OCT-18

Parameter	Result	Adj PQL	Adj MDL	Anal. Method	QC Batch	Analysis Date	Prep. Method	Prep. Date	Analyst	Footnotes	RPD/RSD
Solids-Nonfilterable Residue	5.6 mg/L	4.0	1.22	SM 2540D	WG238231	09-OCT-18 16:12:00	SM 2540D	08-OCT-18	SC		

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: William Humphries
AECOM
Two City Center
Portland,ME 04101

Lab Sample ID: SL9735-4
Report Date: 05-NOV-18
Client PO: non-PO;TO:0010,PN:60565200
Project: New Bedford Harbor
SDG: SL9735

Sample Description	Matrix	Date Sampled	Date Received
MW05-100318	AQ	03-OCT-18 14:00:00	05-OCT-18

Parameter	Result	Adj PQL	Adj MDL	Anal. Method	QC Batch	Analysis Date	Prep. Method	Prep. Date	Analyst	Footnotes	RPD/RSD
Solids-Nonfilterable Residue	4.8 mg/L	4.0	1.22	SM 2540D	WG238231	09-OCT-18 16:12:00	SM 2540D	08-OCT-18	SC		

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: William Humphries
AECOM
Two City Center
Portland,ME 04101

Lab Sample ID: SL9735-5
Report Date: 05-NOV-18
Client PO: non-PO;TO:0010,PN:60565200
Project: New Bedford Harbor
SDG: SL9735

Sample Description	Matrix	Date Sampled	Date Received
MW05-100318-REP	AQ	03-OCT-18 14:10:00	05-OCT-18

Parameter	Result	Adj PQL	Adj MDL	Anal. Method	QC Batch	Analysis Date	Prep. Method	Prep. Date	Analyst	Footnotes	RPD/RSD
Solids-Nonfilterable Residue	4.8 mg/L	4.0	1.22	SM 2540D	WG238231	09-OCT-18 16:12:00	SM 2540D	08-OCT-18	SC		

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: William Humphries
AECOM
Two City Center
Portland,ME 04101

Lab Sample ID: SL9735-6
Report Date: 05-NOV-18
Client PO: non-PO;TO:0010,PN:60565200
Project: New Bedford Harbor
SDG: SL9735

Sample Description	Matrix	Date Sampled	Date Received
MW06-100418	AQ	04-OCT-18 10:15:00	05-OCT-18

Parameter	Result	Adj PQL	Adj MDL	Anal. Method	QC Batch	Analysis Date	Prep. Method	Prep. Date	Analyst	Footnotes	RPD/RSD
Solids-Nonfilterable Residue	12. mg/L	4.0	1.22	SM 2540D	WG238231	09-OCT-18 16:12:00	SM 2540D	08-OCT-18	SC		

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: William Humphries
AECOM
Two City Center
Portland,ME 04101

Lab Sample ID: SL9735-7
Report Date: 05-NOV-18
Client PO: non-PO;TO:0010,PN:60565200
Project: New Bedford Harbor
SDG: SL9735

Sample Description	Matrix	Date Sampled	Date Received
MW07A-100318	AQ	03-OCT-18 12:05:00	05-OCT-18

Parameter	Result	Adj PQL	Adj MDL	Anal. Method	QC Batch	Analysis Date	Prep. Method	Prep. Date	Analyst	Footnotes	RPD/RSD
Solids-Nonfilterable Residue	U4.0 mg/L	4.0	1.22	SM 2540D	WG238231	09-OCT-18 16:12:00	SM 2540D	08-OCT-18	SC		

VOLATILES DATA

QC Summary Section

Katahdin
ANALYTICAL SERVICES

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** New Bedford Harbor **Matrix:** AQ
Lab Code: KAS **SDG:** SL9735

Client Sample ID	Lab Sample ID	Col. ID	BFB	#	DBF	#	DCA	#	TOL	#
MW01-100418	SL9735-1		103.		116.		129.		104.	
MW03-100318	SL9735-2		100.		116.		130.		103.	
MW04A-100318	SL9735-3		101.		115.		129.		102.	
MW05-100318	SL9735-4		98.1		117.		120.		104.	
MW05-100318-REP	SL9735-5		101.		112.		125.		103.	
MW06-100418	SL9735-6		102.		112.		126.		102.	
MW07A-100318	SL9735-7		101.		114.		126.		105.	
EB-001-100318	SL9735-8		102.		115.		127.		104.	
TB-001-092818	SL9735-9		99.8		114.		120.		102.	
Laboratory Control S	WG238427-1		105.		96.8		99.8		101.	
Method Blank Sample	WG238427-2		100.		111.		118.		102.	
Matrix Spike	WG238427-8		105.		98.1		108.		102.	
Matrix Spike Duplica	WG238427-9		102.		101.		105.		99.8	

		QC Limits
DBF	DIBROMOFLUOROMETHANE	68-128
BFB	P-BROMOFLUOROBENZENE	56-133
TOL	TOLUENE-D8	65-128
DCA	1,2-DICHLOROETHANE-D4	67-135

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : New Bedford Harbor
Lab File ID : T7743.D
Instrument ID : GCMS-T
Heated Purge : No

SDG : SL9735
Lab Sample ID : WG238427-2
Date Analyzed : 12-OCT-18
Time Analyzed : 10:15

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG238427-1	T7741.D	10/12/18	08:53
TB-001-092818	SL9735-9	T7745.D	10/12/18	11:15
EB-001-100318	SL9735-8	T7746.D	10/12/18	11:45
MW01-100418	SL9735-1	T7750.D	10/12/18	13:45
MW03-100318	SL9735-2	T7751.D	10/12/18	14:15
MW04A-100318	SL9735-3	T7752.D	10/12/18	14:45
MW05-100318	SL9735-4	T7753.D	10/12/18	15:15
MW05-100318-REP	SL9735-5	T7754.D	10/12/18	15:45
MW06-100418	SL9735-6	T7755.D	10/12/18	16:15
MW07A-100318	SL9735-7	T7756.D	10/12/18	16:45
Matrix Spike	WG238427-8	T7757.D	10/12/18	17:15
Matrix Spike Duplica	WG238427-9	T7758.D	10/12/18	17:45

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ANALYTICAL SERVICES

Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : New Bedford Harbor
Lab File ID : TB758A.D
Instrument ID : GCMS-T

SDG : SL9735
Date Analyzed : 12-OCT-18
Time Analyzed : 07:50
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	21.2		
75	30.0 - 60.0% of mass 95	57.1		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	7.3		
173	Less than 2.0% of mass 174	0.5	0.78	1
174	Greater than 50.0% of mass 95	69.2		
175	5.0 - 9.0% of mass 174	5.0	7.28	1
176	95.0 - 101.0% of mass 174	69.2	99.86	1
177	5.0 - 9.0% of mass 176	4.8	6.88	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG238427-4	T7740.D	10/12/18	08:11
Laboratory Control S	WG238427-1	T7741.D	10/12/18	08:53
Independent Source	WG238427-6	T7741A.D	10/12/18	08:53
Method Blank Sample	WG238427-2	T7743.D	10/12/18	10:15
TB-001-092818	SL9735-9	T7745.D	10/12/18	11:15
EB-001-100318	SL9735-8	T7746.D	10/12/18	11:45
MW01-100418	SL9735-1	T7750.D	10/12/18	13:45
MW03-100318	SL9735-2	T7751.D	10/12/18	14:15
MW04A-100318	SL9735-3	T7752.D	10/12/18	14:45
MW05-100318	SL9735-4	T7753.D	10/12/18	15:15
MW05-100318-REP	SL9735-5	T7754.D	10/12/18	15:45
MW06-100418	SL9735-6	T7755.D	10/12/18	16:15
MW07A-100318	SL9735-7	T7756.D	10/12/18	16:45
Matrix Spike	WG238427-8	T7757.D	10/12/18	17:15
Matrix Spike Duplica	WG238427-9	T7758.D	10/12/18	17:45
Continuing Calibrati	WG238427-5	T7759.D	10/12/18	18:15

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

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ANALYTICAL SERVICES

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : New Bedford Harbor
Lab ID : WG238427-4
Lab File ID : T7740.D

SDG: SL9735
Analytical Date: 10/12/18 08:11
Instrument ID: GCMS-T

		PENTAFLUOROBENZENE				1,4-DIFLUOROBENZENE				CHLOROBENZENE-D5			
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	333136		5.79		503699		6.59		459807		10.64	
	Upper Limit	666272		5.96		1007398		6.75		919614		10.81	
	Lower Limit	166568		5.62		251849.5		6.42		229903.5		10.47	
Client Sample ID	Lab Sample ID												
Laboratory Control S	WG238427-1	350025		5.79		528705		6.59		475942		10.64	
Method Blank Sample	WG238427-2	294724		5.79		477789		6.59		419739		10.64	
TB-001-092818	SL9735-9	278719		5.79		449901		6.59		393129		10.64	
EB-001-100318	SL9735-8	270165		5.79		440148		6.59		398207		10.64	
MW01-100418	SL9735-1	257848		5.79		420169		6.59		381639		10.65	
MW03-100318	SL9735-2	252801		5.79		417755		6.59		371103		10.64	
MW04A-100318	SL9735-3	256595		5.79		421296		6.59		375782		10.64	
MW05-100318	SL9735-4	238093		5.78		394276		6.59		347412		10.64	
MW05-100318-REP	SL9735-5	260177		5.79		415048		6.59		375567		10.65	
MW06-100418	SL9735-6	258440		5.79		419304		6.59		374566		10.64	
MW07A-100318	SL9735-7	256968		5.79		411277		6.59		373218		10.64	
Matrix Spike	WG238427-8	314429		5.79		482276		6.59		443436		10.64	
Matrix Spike Duplica	WG238427-9	334141		5.79		527405		6.59		462980		10.64	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

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ANALYTICAL SERVICES

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : New Bedford Harbor
Lab ID : WG238427-4
Lab File ID : T7740.D

SDG: SL9735
Analytical Date: 10/12/18 08:11
Instrument ID: GCMS-T

		1,4-DICHLOROBENZENE-D4			
		Area	#	RT	#
	Std .	249085		13.73	
	Upper Limit	498170		13.89	
	Lower Limit	124542.5		13.56	
Client Sample ID	Lab Sample ID				
Laboratory Control S	WG238427-1	254792		13.73	
Method Blank Sample	WG238427-2	207725		13.73	
TB-001-092818	SL9735-9	193343		13.73	
EB-001-100318	SL9735-8	194975		13.73	
MW01-100418	SL9735-1	191068		13.73	
MW03-100318	SL9735-2	186941		13.73	
MW04A-100318	SL9735-3	187311		13.73	
MW05-100318	SL9735-4	166173		13.73	
MW05-100318-REP	SL9735-5	183803		13.73	
MW06-100418	SL9735-6	187892		13.73	
MW07A-100318	SL9735-7	184488		13.73	
Matrix Spike	WG238427-8	235052		13.73	
Matrix Spike Duplica	WG238427-9	255172		13.73	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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sales@katahdinlab.com

Sample Data Section

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

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Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-1
Client ID: MW01-100418
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7750.D

Sample Date: 04-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Dichlorodifluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Chloromethane	U	2.0	ug/L	1	2	2.0	0.36
Vinyl Chloride	U	2.0	ug/L	1	2	2.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	2.0	ug/L	1	2	2.0	0.55
Trichlorofluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Diethyl Ether	U	1.0	ug/L	1	1	1.0	0.40
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
Methyl tert-butyl Ether	U	1.0	ug/L	1	1	1.0	0.36
Di-Isopropyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
Ethyl Tertiary-Butyl Ether	U	1.0	ug/L	1	1	1.0	0.23
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
2,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromochloromethane	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
Tetrahydrofuran	U	5.0	ug/L	1	5	5.0	1.7
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
1,1-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.21
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
Tertiary-Amyl Methyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
Dibromomethane	U	1.0	ug/L	1	1	1.0	0.46
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
1,4-Dioxane	U	100	ug/L	1	100	100	8.8
Toluene	U	1.0	ug/L	1	1	1.0	0.27

600 Technology Way
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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-1
Client ID: MW01-100418
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7750.D

Sample Date: 04-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
1,3-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.22
1,2-Dibromoethane	U	1.0	ug/L	1	1	1.0	0.22
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,1,1,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.19
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23
Isopropylbenzene	U	1.0	ug/L	1	1	1.0	0.23
Bromobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Propylbenzene	U	1.0	ug/L	1	1	1.0	0.26
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
1,3,5-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.20
2-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.20
1,2,3-Trichloropropane	U	1.0	ug/L	1	1	1.0	0.19
4-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.26
tert-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.31
1,2,4-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.19
P-Isopropyltoluene	U	1.0	ug/L	1	1	1.0	0.25
1,3-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.26
1,4-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.23
sec-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.15
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	1	1	1.0	0.50
Hexachlorobutadiene	U	1.0	ug/L	1	1	1.0	0.52
1,2,4-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.37
Naphthalene	U	1.0	ug/L	1	1	1.0	0.30

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-1
Client ID: MW01-100418
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7750.D

Sample Date: 04-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,2,3-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.27
P-Bromofluorobenzene		103.	%				
Toluene-d8		104.	%				
1,2-Dichloroethane-d4		129.	%				
Dibromofluoromethane		116.	%				

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Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7750.D
Report Date: 05-Nov-2018 13:42

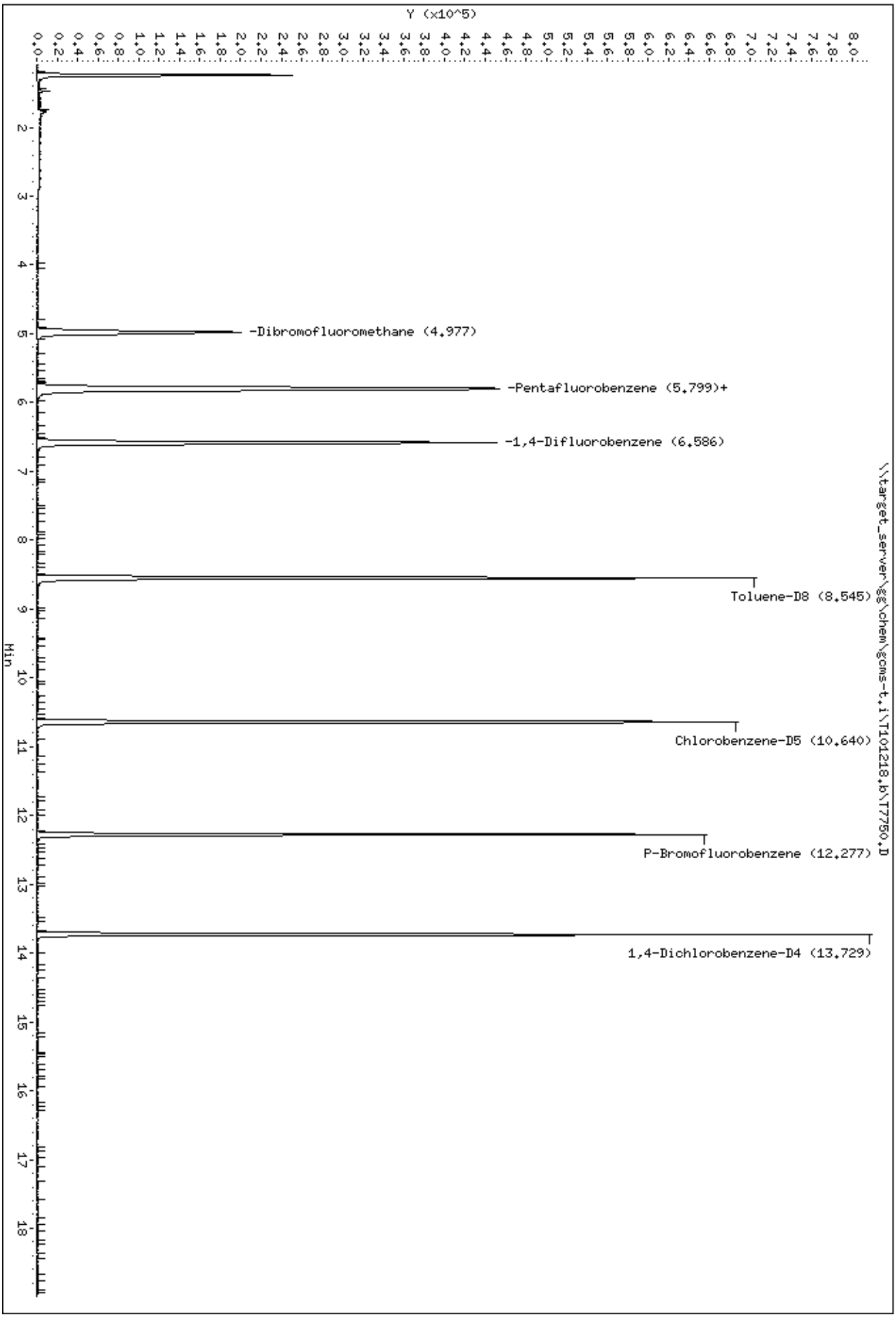
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T101218.b\T7750.D
Lab Smp Id: SL9735-1 Client Smp ID: MW01-100418
Inj Date : 12-OCT-2018 13:45 MS Autotune Date: 31-AUG-2018 16:19
Operator : HG/JR Inst ID: gcms-t.i
Smp Info : SL9735-1
Misc Info : WG238427,WG238351-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T101218.b\T8A05(56)D.m
Meth Date : 05-Nov-2018 13:33 tcote Quant Type: ISTD
Cal Date : 11-OCT-2018 12:28 Cal File: T7724.D
Als bottle: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
$ 34 Dibromofluoromethane	113	4.976	4.977	(0.859)	191604	57.7911	57.8	
* 41 Pentafluorobenzene	168	5.792	5.785	(1.000)	257848	50.0000		
$ 42 1,2-Dichloroethane-D4	65	5.813	5.813	(1.004)	309079	64.4682	64.5	
* 48 1,4-Difluorobenzene	114	6.585	6.586	(1.000)	420169	50.0000		
$ 56 Toluene-D8	98	8.544	8.545	(1.297)	539107	52.1225	52.1	
* 68 Chlorobenzene-D5	117	10.647	10.640	(1.000)	381639	50.0000		
$ 77 P-Bromofluorobenzene	95	12.277	12.277	(1.864)	228770	51.5143	51.5	
* 93 1,4-Dichlorobenzene-D4	152	13.728	13.729	(1.000)	191068	50.0000		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Date : 12-OCT-2018 13:45
Client ID: MW01-100418
Sample Info: SL9735-1
Instrument: gcms-t.i
Y (x10^5)
Min
-Dibromofluoromethane (4.977)
-Pentafluorobenzene (5.799)+
-1,4-Difluorobenzene (6.586)
Toluene-D8 (8.545)
Chlorobenzene-D5 (10.640)
P-Bromofluorobenzene (12.277)
1,4-Dichlorobenzene-D4 (13.729)
\\target_server\gg\chem\gcms-t.i\T101218.b\T7750.D

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-2
Client ID: MW03-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7751.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Dichlorodifluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Chloromethane	U	2.0	ug/L	1	2	2.0	0.36
Vinyl Chloride	U	2.0	ug/L	1	2	2.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	2.0	ug/L	1	2	2.0	0.55
Trichlorofluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Diethyl Ether	U	1.0	ug/L	1	1	1.0	0.40
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
Methyl tert-butyl Ether	U	1.0	ug/L	1	1	1.0	0.36
Di-Isopropyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
Ethyl Tertiary-Butyl Ether	U	1.0	ug/L	1	1	1.0	0.23
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
2,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromochloromethane	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
Tetrahydrofuran	U	5.0	ug/L	1	5	5.0	1.7
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
1,1-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.21
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
Tertiary-Amyl Methyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
Dibromomethane	U	1.0	ug/L	1	1	1.0	0.46
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
1,4-Dioxane	U	100	ug/L	1	100	100	8.8
Toluene	U	1.0	ug/L	1	1	1.0	0.27

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-2
Client ID: MW03-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7751.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene		2.5	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
1,3-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.22
1,2-Dibromoethane	U	1.0	ug/L	1	1	1.0	0.22
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,1,1,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.19
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23
Isopropylbenzene	U	1.0	ug/L	1	1	1.0	0.23
Bromobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Propylbenzene	U	1.0	ug/L	1	1	1.0	0.26
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
1,3,5-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.20
2-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.20
1,2,3-Trichloropropane	U	1.0	ug/L	1	1	1.0	0.19
4-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.26
tert-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.31
1,2,4-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.19
P-Isopropyltoluene	U	1.0	ug/L	1	1	1.0	0.25
1,3-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.26
1,4-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.23
sec-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.15
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	1	1	1.0	0.50
Hexachlorobutadiene	U	1.0	ug/L	1	1	1.0	0.52
1,2,4-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.37
Naphthalene	U	1.0	ug/L	1	1	1.0	0.30

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-2
Client ID: MW03-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7751.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,2,3-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.27
P-Bromofluorobenzene		100.	%				
Toluene-d8		103.	%				
1,2-Dichloroethane-d4		130.	%				
Dibromofluoromethane		116.	%				

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Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7751.D
Report Date: 05-Nov-2018 13:42

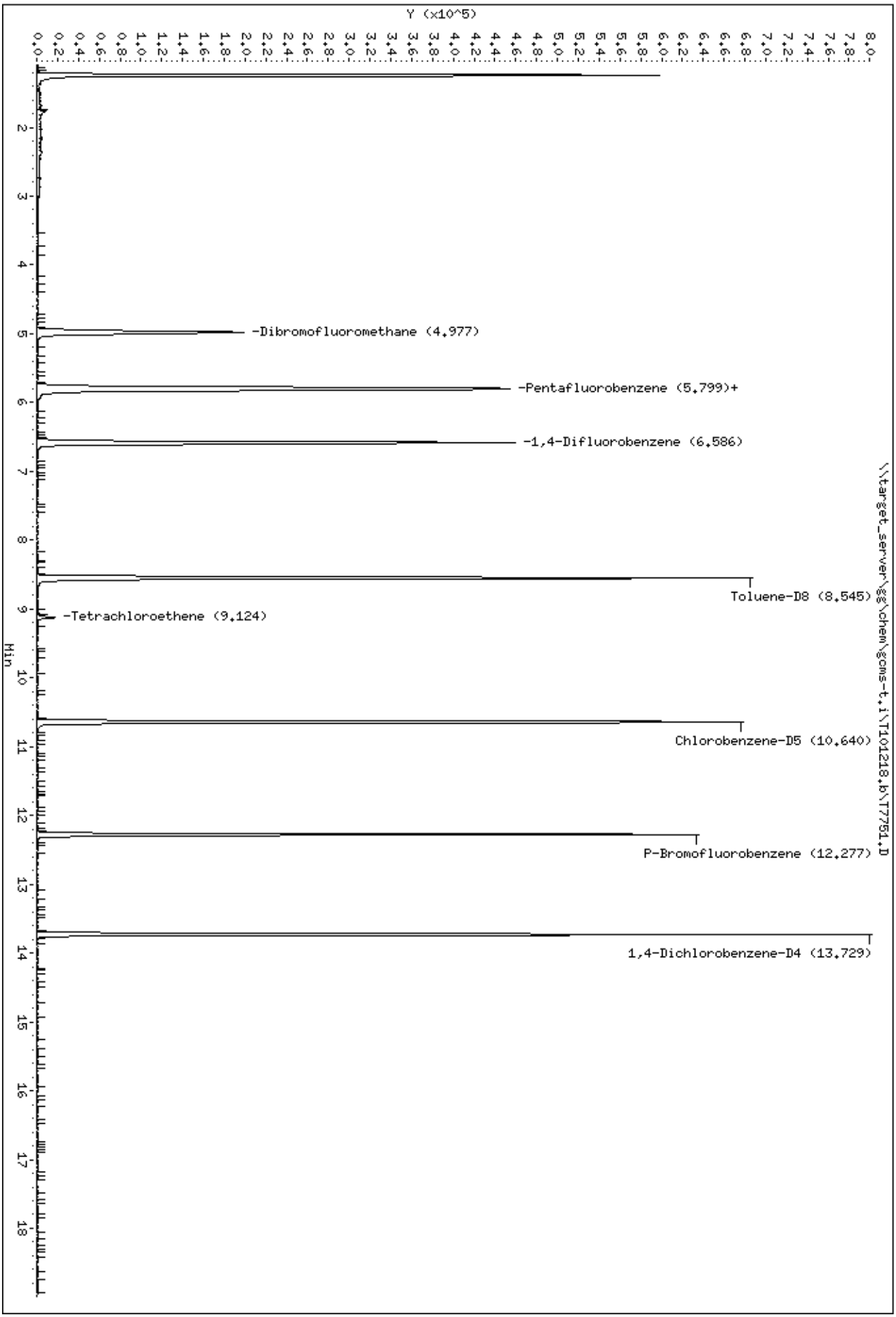
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T101218.b\T7751.D
Lab Smp Id: SL9735-2 Client Smp ID: MW03-100318
Inj Date : 12-OCT-2018 14:15 MS Autotune Date: 31-AUG-2018 16:19
Operator : HG/JR Inst ID: gcms-t.i
Smp Info : SL9735-2
Misc Info : WG238427,WG238351-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T101218.b\T8A05(56)D.m
Meth Date : 05-Nov-2018 13:33 tcote Quant Type: ISTD
Cal Date : 11-OCT-2018 12:28 Cal File: T7724.D
Als bottle: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
$	34 Dibromofluoromethane	113	4.976	4.977	(0.859)	189451	58.2825	58.3	
*	41 Pentafluorobenzene	168	5.791	5.785	(1.000)	252801	50.0000		
$	42 1,2-Dichloroethane-D4	65	5.813	5.813	(1.004)	305661	65.0281	65.0	
*	48 1,4-Difluorobenzene	114	6.585	6.586	(1.000)	417755	50.0000		
$	56 Toluene-D8	98	8.544	8.545	(1.297)	530404	51.5774	51.6	
	58 Tetrachloroethene	164	9.123	9.124	(0.858)	4294	2.49152	2.5	
*	68 Chlorobenzene-D5	117	10.639	10.640	(1.000)	371103	50.0000		
$	77 P-Bromofluorobenzene	95	12.277	12.277	(1.864)	221375	50.1372	50.1	
*	93 1,4-Dichlorobenzene-D4	152	13.728	13.729	(1.000)	186941	50.0000		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Date : 12-OCT-2018 14:15
Client ID: MW03-100318
Sample Info: SL9735-2
Instrument: gcms-t.i
Y (x10^5)
Min
-Dibromofluoromethane (4.977)
-Pentafluorobenzene (5.799)+
-1,4-Difluorobenzene (6.586)
Toluene-D8 (8.545)
-Tetrachloroethene (9.124)
Chlorobenzene-D5 (10.640)
P-Bromofluorobenzene (12.277)
1,4-Dichlorobenzene-D4 (13.729)
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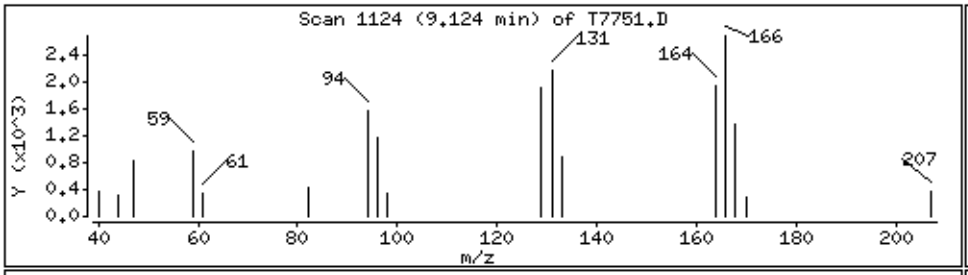
Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7751.D

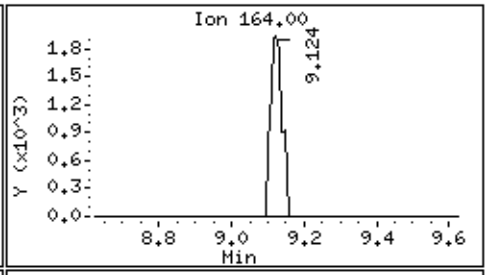
Date : 12-OCT-2018 14:15

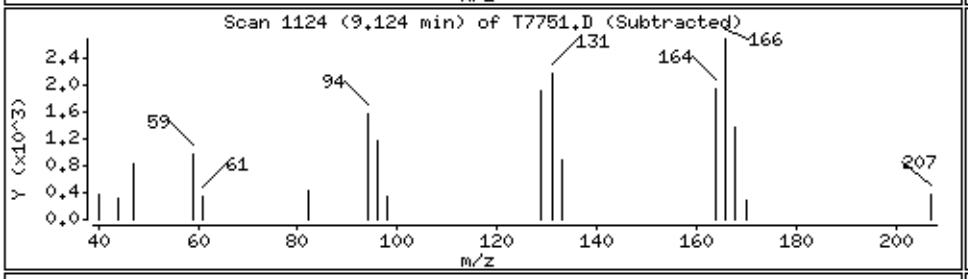
Client ID: MW03-100318 Instrument: gcms-t.i

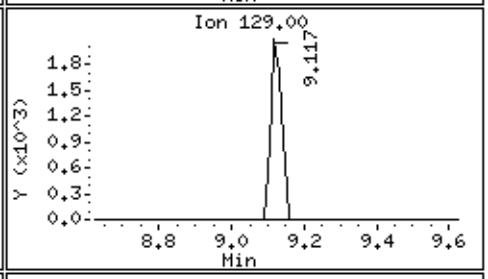
Sample Info: SL9735-2

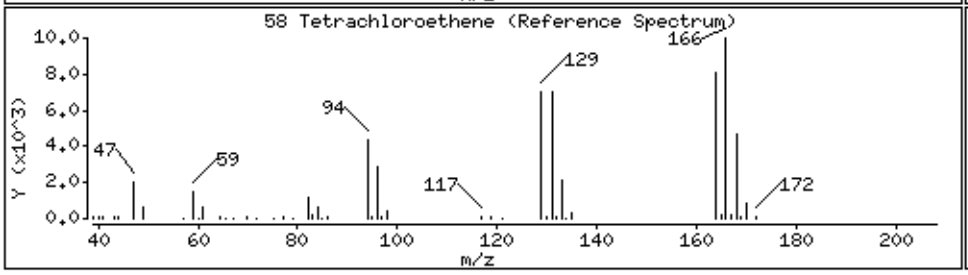
58 Tetrachloroethene Concentration: 2.5 ug/l

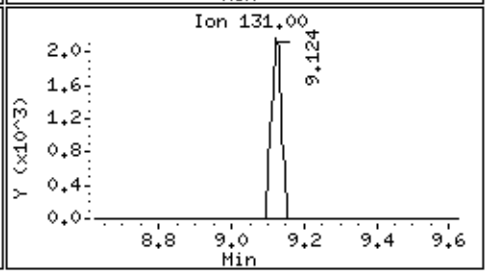












Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-3
Client ID: MW04A-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7752.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Dichlorodifluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Chloromethane	U	2.0	ug/L	1	2	2.0	0.36
Vinyl Chloride	U	2.0	ug/L	1	2	2.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	2.0	ug/L	1	2	2.0	0.55
Trichlorofluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Diethyl Ether	U	1.0	ug/L	1	1	1.0	0.40
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
Methyl tert-butyl Ether	U	1.0	ug/L	1	1	1.0	0.36
Di-Isopropyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
Ethyl Tertiary-Butyl Ether	U	1.0	ug/L	1	1	1.0	0.23
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
2,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromochloromethane	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
Tetrahydrofuran	U	5.0	ug/L	1	5	5.0	1.7
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
1,1-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.21
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
Tertiary-Amyl Methyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
Dibromomethane	U	1.0	ug/L	1	1	1.0	0.46
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
1,4-Dioxane	U	100	ug/L	1	100	100	8.8
Toluene	U	1.0	ug/L	1	1	1.0	0.27

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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-3
Client ID: MW04A-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7752.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
1,3-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.22
1,2-Dibromoethane	U	1.0	ug/L	1	1	1.0	0.22
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,1,1,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.19
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23
Isopropylbenzene	U	1.0	ug/L	1	1	1.0	0.23
Bromobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Propylbenzene	U	1.0	ug/L	1	1	1.0	0.26
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
1,3,5-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.20
2-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.20
1,2,3-Trichloropropane	U	1.0	ug/L	1	1	1.0	0.19
4-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.26
tert-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.31
1,2,4-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.19
P-Isopropyltoluene	U	1.0	ug/L	1	1	1.0	0.25
1,3-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.26
1,4-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.23
sec-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.15
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	1	1	1.0	0.50
Hexachlorobutadiene	U	1.0	ug/L	1	1	1.0	0.52
1,2,4-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.37
Naphthalene	U	1.0	ug/L	1	1	1.0	0.30

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-3
Client ID: MW04A-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7752.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,2,3-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.27
P-Bromofluorobenzene		101.	%				
Toluene-d8		102.	%				
1,2-Dichloroethane-d4		129.	%				
Dibromofluoromethane		115.	%				

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Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7752.D
Report Date: 05-Nov-2018 13:42

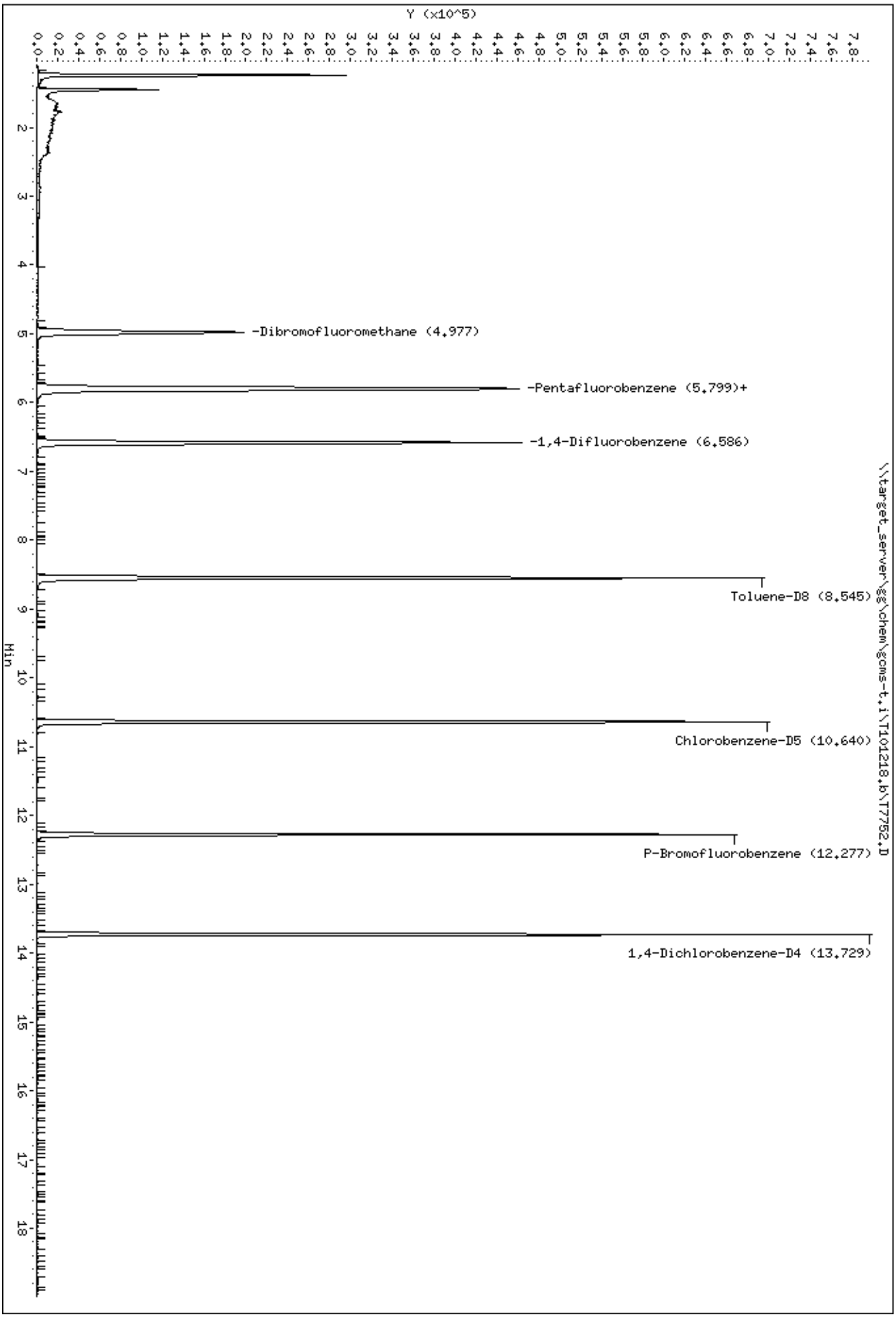
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T101218.b\T7752.D
Lab Smp Id: SL9735-3 Client Smp ID: MW04A-100318
Inj Date : 12-OCT-2018 14:45 MS Autotune Date: 31-AUG-2018 16:19
Operator : HG/JR Inst ID: gcms-t.i
Smp Info : SL9735-3
Misc Info : WG238427,WG238351-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T101218.b\T8A05(56)D.m
Meth Date : 05-Nov-2018 13:33 tcote Quant Type: ISTD
Cal Date : 11-OCT-2018 12:28 Cal File: T7724.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
$ 34 Dibromofluoromethane	113	4.976	4.977	(0.859)	189315	57.3795	57.4	
* 41 Pentafluorobenzene	168	5.791	5.785	(1.000)	256595	50.0000		
$ 42 1,2-Dichloroethane-D4	65	5.820	5.813	(1.005)	308034	64.5640	64.6	
* 48 1,4-Difluorobenzene	114	6.585	6.586	(1.000)	421296	50.0000		
$ 56 Toluene-D8	98	8.544	8.545	(1.297)	529726	51.0785	51.1	
* 68 Chlorobenzene-D5	117	10.639	10.640	(1.000)	375782	50.0000		
$ 77 P-Bromofluorobenzene	95	12.277	12.277	(1.864)	224020	50.3098	50.3	
* 93 1,4-Dichlorobenzene-D4	152	13.728	13.729	(1.000)	187311	50.0000		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Date : 12-OCT-2018 14:45
Client ID: MW04A-100318
Sample Info: SL9735-3
Instrument: gcms-t.i
Y (x10^5)
Min
-Dibromofluoromethane (4.977)
-Pentafluorobenzene (5.799)+
-1,4-Difluorobenzene (6.586)
Toluene-D8 (8.545)
Chlorobenzene-D5 (10.640)
P-Bromofluorobenzene (12.277)
1,4-Dichlorobenzene-D4 (13.729)
\\target_server\gg\chem\gcms-t.i\T101218.b\T7752.D

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-4
Client ID: MW05-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7753.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Dichlorodifluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Chloromethane	U	2.0	ug/L	1	2	2.0	0.36
Vinyl Chloride	U	2.0	ug/L	1	2	2.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	2.0	ug/L	1	2	2.0	0.55
Trichlorofluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Diethyl Ether	U	1.0	ug/L	1	1	1.0	0.40
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	J	0.98	ug/L	1	1	1.0	0.25
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
Methyl tert-butyl Ether	U	1.0	ug/L	1	1	1.0	0.36
Di-Isopropyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
Ethyl Tertiary-Butyl Ether	U	1.0	ug/L	1	1	1.0	0.23
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
2,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromochloromethane	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
Tetrahydrofuran	U	5.0	ug/L	1	5	5.0	1.7
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
1,1-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.21
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
Tertiary-Amyl Methyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
Dibromomethane	U	1.0	ug/L	1	1	1.0	0.46
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
1,4-Dioxane	U	100	ug/L	1	100	100	8.8
Toluene	U	1.0	ug/L	1	1	1.0	0.27

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-4
Client ID: MW05-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7753.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
1,3-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.22
1,2-Dibromoethane	U	1.0	ug/L	1	1	1.0	0.22
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,1,1,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.19
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23
Isopropylbenzene	U	1.0	ug/L	1	1	1.0	0.23
Bromobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Propylbenzene	U	1.0	ug/L	1	1	1.0	0.26
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
1,3,5-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.20
2-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.20
1,2,3-Trichloropropane	U	1.0	ug/L	1	1	1.0	0.19
4-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.26
tert-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.31
1,2,4-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.19
P-Isopropyltoluene	U	1.0	ug/L	1	1	1.0	0.25
1,3-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.26
1,4-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.23
sec-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.15
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	1	1	1.0	0.50
Hexachlorobutadiene	U	1.0	ug/L	1	1	1.0	0.52
1,2,4-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.37
Naphthalene	U	1.0	ug/L	1	1	1.0	0.30

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-4
Client ID: MW05-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7753.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,2,3-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.27
P-Bromofluorobenzene		98.1	%				
Toluene-d8		104.	%				
1,2-Dichloroethane-d4		120.	%				
Dibromofluoromethane		117.	%				

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Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7753.D
Report Date: 05-Nov-2018 13:42

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T101218.b\T7753.D
Lab Smp Id: SL9735-4 Client Smp ID: MW05-100318
Inj Date : 12-OCT-2018 15:15 MS Autotune Date: 31-AUG-2018 16:19
Operator : HG/JR Inst ID: gcms-t.i
Smp Info : SL9735-4
Misc Info : WG238427,WG238351-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T101218.b\T8A05(56)D.m
Meth Date : 05-Nov-2018 13:33 tcote Quant Type: ISTD
Cal Date : 11-OCT-2018 12:28 Cal File: T7724.D
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

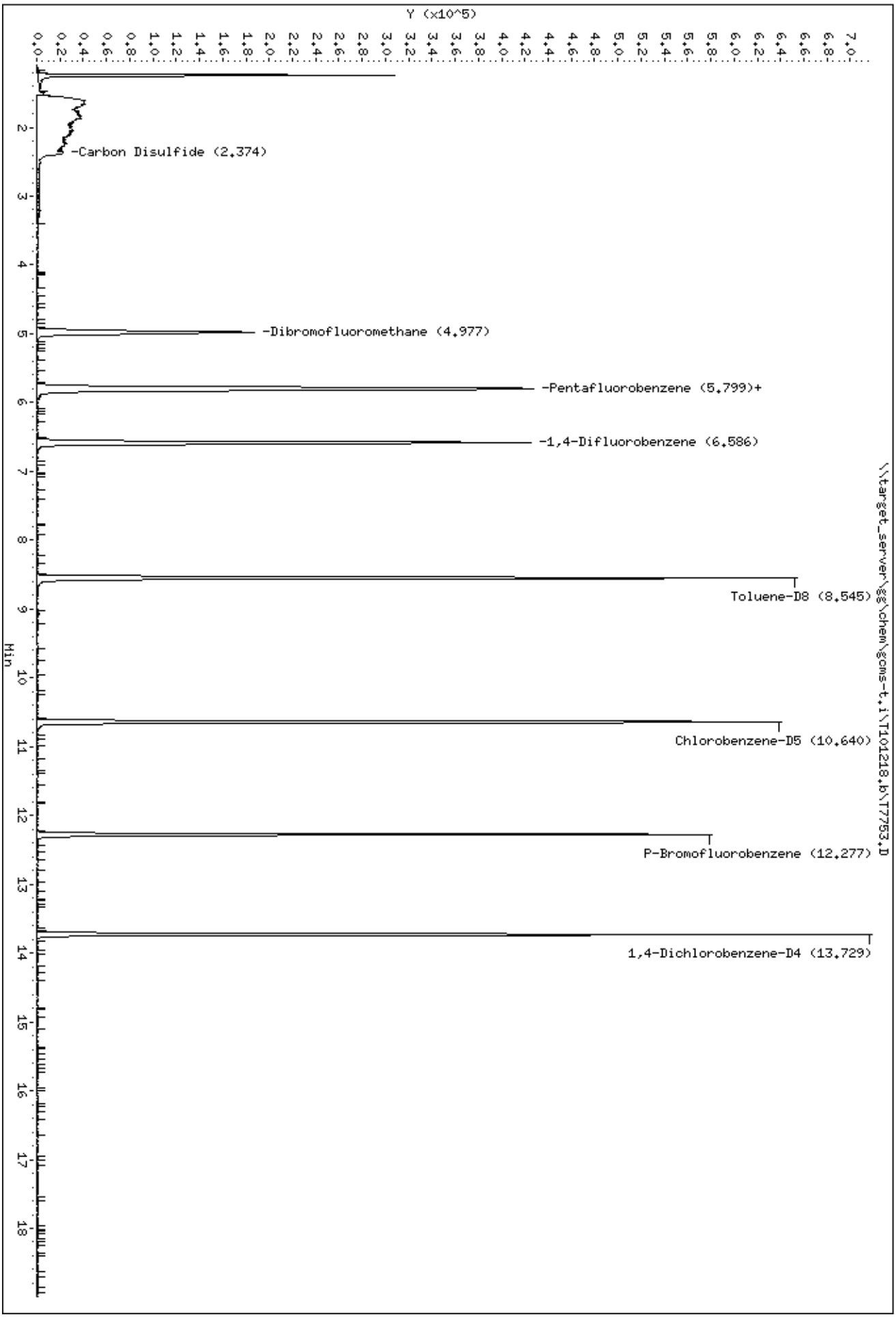
Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
	10 Carbon Disulfide	76	2.374	2.360	(0.410)	5441	0.98101	0.98(a)	
$	34 Dibromofluoromethane	113	4.983	4.977	(0.862)	178707	58.3734	58.4	
*	41 Pentafluorobenzene	168	5.784	5.785	(1.000)	238093	50.0000		
$	42 1,2-Dichloroethane-D4	65	5.813	5.813	(1.005)	266317	60.1578	60.2	
*	48 1,4-Difluorobenzene	114	6.585	6.586	(1.000)	394276	50.0000		
$	56 Toluene-D8	98	8.544	8.545	(1.297)	504642	51.9945	52.0	
*	68 Chlorobenzene-D5	117	10.639	10.640	(1.000)	347412	50.0000		
$	77 P-Bromofluorobenzene	95	12.277	12.277	(1.864)	204423	49.0549	49.0	
*	93 1,4-Dichlorobenzene-D4	152	13.728	13.729	(1.000)	166173	50.0000		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).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Date : 12-OCT-2018 15:15
Client ID: MW05-100318
Sample Info: SL9735-4
Instrument: gcms-t.i
Y (x10^5)
Min
-Carbon Disulfide (2.374)
-Dibromofluoromethane (4.977)
-Pentafluorobenzene (5.799)+
-1,4-Difluorobenzene (6.586)
Toluene-D8 (8.545)
Chlorobenzene-D5 (10.640)
P-Bromofluorobenzene (12.277)
1,4-Dichlorobenzene-D4 (13.729)
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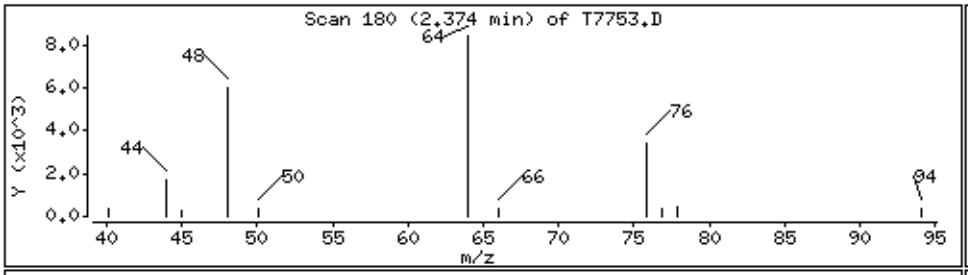
Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7753.D

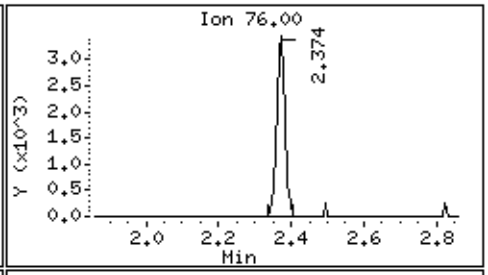
Date : 12-OCT-2018 15:15

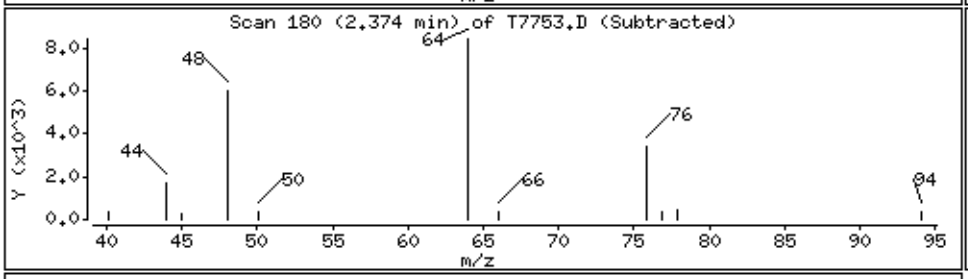
Client ID: MW05-100318 Instrument: gcms-t.i

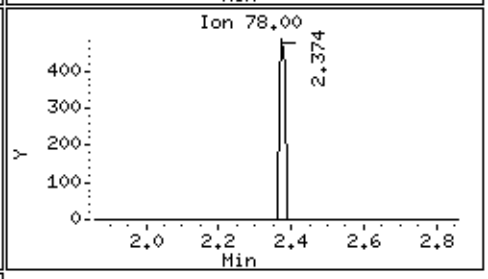
Sample Info: SL9735-4

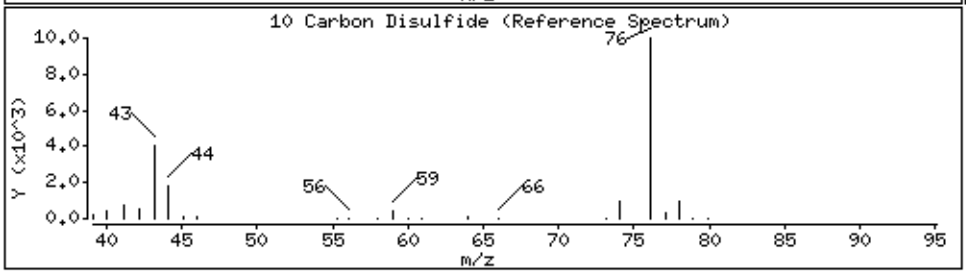
10 Carbon Disulfide Concentration: 0.98 ug/l











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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-5
Client ID: MW05-100318-REP
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7754.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Dichlorodifluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Chloromethane	U	2.0	ug/L	1	2	2.0	0.36
Vinyl Chloride	U	2.0	ug/L	1	2	2.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	2.0	ug/L	1	2	2.0	0.55
Trichlorofluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Diethyl Ether	U	1.0	ug/L	1	1	1.0	0.40
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
Methyl tert-butyl Ether	U	1.0	ug/L	1	1	1.0	0.36
Di-Isopropyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
Ethyl Tertiary-Butyl Ether	U	1.0	ug/L	1	1	1.0	0.23
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
2,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromochloromethane	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
Tetrahydrofuran	U	5.0	ug/L	1	5	5.0	1.7
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
1,1-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.21
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
Tertiary-Amyl Methyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
Dibromomethane	U	1.0	ug/L	1	1	1.0	0.46
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
1,4-Dioxane	U	100	ug/L	1	100	100	8.8
Toluene	U	1.0	ug/L	1	1	1.0	0.27

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-5
Client ID: MW05-100318-REP
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7754.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
1,3-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.22
1,2-Dibromoethane	U	1.0	ug/L	1	1	1.0	0.22
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,1,1,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.19
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23
Isopropylbenzene	U	1.0	ug/L	1	1	1.0	0.23
Bromobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Propylbenzene	U	1.0	ug/L	1	1	1.0	0.26
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
1,3,5-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.20
2-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.20
1,2,3-Trichloropropane	U	1.0	ug/L	1	1	1.0	0.19
4-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.26
tert-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.31
1,2,4-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.19
P-Isopropyltoluene	U	1.0	ug/L	1	1	1.0	0.25
1,3-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.26
1,4-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.23
sec-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.15
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	1	1	1.0	0.50
Hexachlorobutadiene	U	1.0	ug/L	1	1	1.0	0.52
1,2,4-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.37
Naphthalene	U	1.0	ug/L	1	1	1.0	0.30

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-5
Client ID: MW05-100318-REP
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7754.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,2,3-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.27
P-Bromofluorobenzene		101.	%				
Toluene-d8		103.	%				
1,2-Dichloroethane-d4		125.	%				
Dibromofluoromethane		112.	%				

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Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7754.D
Report Date: 05-Nov-2018 13:42

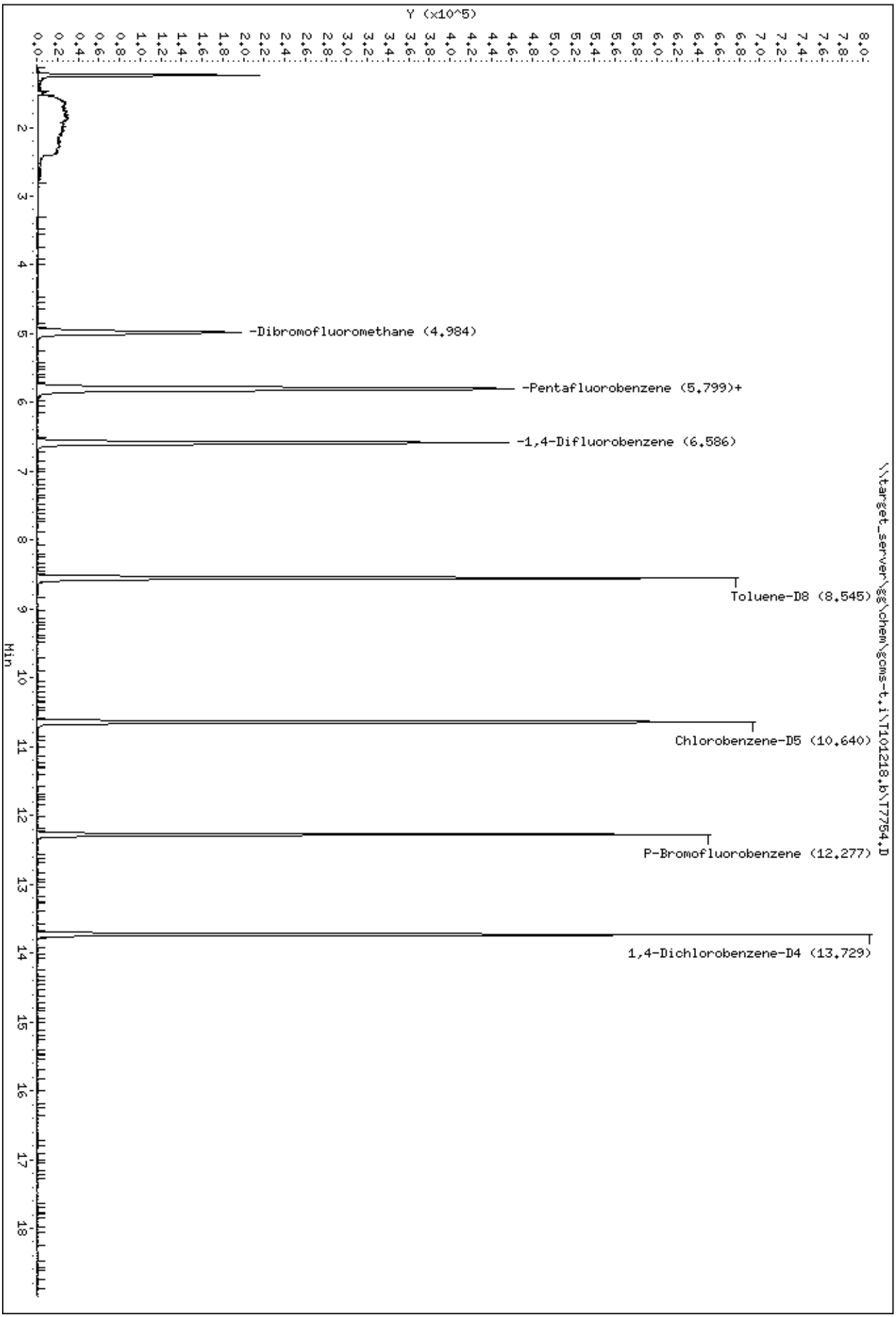
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T101218.b\T7754.D
Lab Smp Id: SL9735-5 Client Smp ID: MW05-100318-REP
Inj Date : 12-OCT-2018 15:45 MS Autotune Date: 31-AUG-2018 16:19
Operator : HG/JR Inst ID: gcms-t.i
Smp Info : SL9735-5
Misc Info : WG238427,WG238351-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T101218.b\T8A05(56)D.m
Meth Date : 05-Nov-2018 13:33 tcote Quant Type: ISTD
Cal Date : 11-OCT-2018 12:28 Cal File: T7724.D
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
$ 34 Dibromofluoromethane	113	4.976	4.977	(0.859)	187839	56.1483	56.1	
* 41 Pentafluorobenzene	168	5.791	5.785	(1.000)	260177	50.0000		
$ 42 1,2-Dichloroethane-D4	65	5.813	5.813	(1.004)	302603	62.5524	62.6	
* 48 1,4-Difluorobenzene	114	6.585	6.586	(1.000)	415048	50.0000		
$ 56 Toluene-D8	98	8.544	8.545	(1.297)	524833	51.3685	51.4	
* 68 Chlorobenzene-D5	117	10.646	10.640	(1.000)	375567	50.0000		
$ 77 P-Bromofluorobenzene	95	12.277	12.277	(1.864)	221763	50.5526	50.6	
* 93 1,4-Dichlorobenzene-D4	152	13.728	13.729	(1.000)	183803	50.0000		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Date : 12-OCT-2018 15:45
Client ID: MW05-100318-REP
Sample Info: SL9735-5
Instrument: gcms-t.i
Y (x10^5)
Min
-Dibromofluoromethane (4.984)
-Pentafluorobenzene (5.799)+
-1,4-Difluorobenzene (6.586)
Toluene-D8 (8.545)
Chlorobenzene-D5 (10.640)
P-Bromofluorobenzene (12.277)
1,4-Dichlorobenzene-D4 (13.729)
\\target_server\gg\chem\gcms-t.i\T101218.b\T7754.D

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-6
Client ID: MW06-100418
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7755.D

Sample Date: 04-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Dichlorodifluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Chloromethane	U	2.0	ug/L	1	2	2.0	0.36
Vinyl Chloride	U	2.0	ug/L	1	2	2.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	2.0	ug/L	1	2	2.0	0.55
Trichlorofluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Diethyl Ether	U	1.0	ug/L	1	1	1.0	0.40
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
Methyl tert-butyl Ether	U	1.0	ug/L	1	1	1.0	0.36
Di-Isopropyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
Ethyl Tertiary-Butyl Ether	U	1.0	ug/L	1	1	1.0	0.23
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
2,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromochloromethane	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
Tetrahydrofuran	U	5.0	ug/L	1	5	5.0	1.7
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
1,1-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.21
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
Tertiary-Amyl Methyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
Dibromomethane	U	1.0	ug/L	1	1	1.0	0.46
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
1,4-Dioxane	U	100	ug/L	1	100	100	8.8
Toluene	U	1.0	ug/L	1	1	1.0	0.27

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-6
Client ID: MW06-100418
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7755.D

Sample Date: 04-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
1,3-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.22
1,2-Dibromoethane	U	1.0	ug/L	1	1	1.0	0.22
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,1,1,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.19
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23
Isopropylbenzene	U	1.0	ug/L	1	1	1.0	0.23
Bromobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Propylbenzene	U	1.0	ug/L	1	1	1.0	0.26
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
1,3,5-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.20
2-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.20
1,2,3-Trichloropropane	U	1.0	ug/L	1	1	1.0	0.19
4-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.26
tert-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.31
1,2,4-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.19
P-Isopropyltoluene	U	1.0	ug/L	1	1	1.0	0.25
1,3-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.26
1,4-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.23
sec-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.15
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	1	1	1.0	0.50
Hexachlorobutadiene	U	1.0	ug/L	1	1	1.0	0.52
1,2,4-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.37
Naphthalene	U	1.0	ug/L	1	1	1.0	0.30

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-6
Client ID: MW06-100418
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7755.D

Sample Date: 04-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,2,3-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.27
P-Bromofluorobenzene		102.	%				
Toluene-d8		102.	%				
1,2-Dichloroethane-d4		126.	%				
Dibromofluoromethane		112.	%				

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Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7755.D
Report Date: 05-Nov-2018 13:42

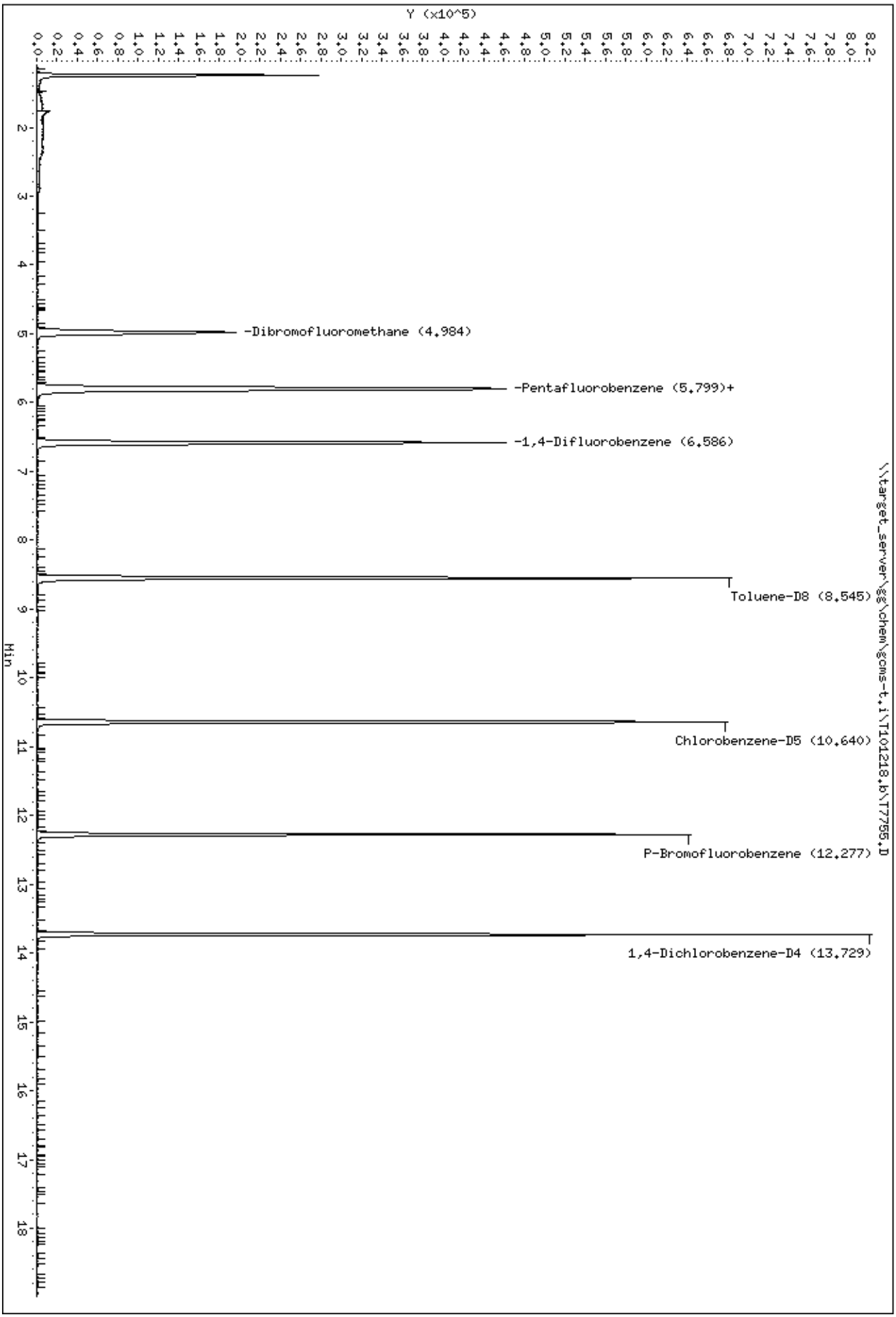
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T101218.b\T7755.D
Lab Smp Id: SL9735-6 Client Smp ID: MW06-100418
Inj Date : 12-OCT-2018 16:15 MS Autotune Date: 31-AUG-2018 16:19
Operator : HG/JR Inst ID: gcms-t.i
Smp Info : SL9735-6
Misc Info : WG238427,WG238351-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T101218.b\T8A05(56)D.m
Meth Date : 05-Nov-2018 13:33 tcote Quant Type: ISTD
Cal Date : 11-OCT-2018 12:28 Cal File: T7724.D
Als bottle: 11
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
$ 34 Dibromofluoromethane	113	4.983	4.977	(0.860)	186500	56.1228	56.1	
* 41 Pentafluorobenzene	168	5.791	5.785	(1.000)	258440	50.0000		
$ 42 1,2-Dichloroethane-D4	65	5.813	5.813	(1.004)	303183	63.0935	63.1	
* 48 1,4-Difluorobenzene	114	6.585	6.586	(1.000)	419304	50.0000		
$ 56 Toluene-D8	98	8.544	8.545	(1.297)	525668	50.9280	50.9	
* 68 Chlorobenzene-D5	117	10.639	10.640	(1.000)	374566	50.0000		
$ 77 P-Bromofluorobenzene	95	12.277	12.277	(1.864)	225158	50.8056	50.8	
* 93 1,4-Dichlorobenzene-D4	152	13.728	13.729	(1.000)	187892	50.0000		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Date : 12-OCT-2018 16:15
Client ID: MW06-100418
Sample Info: SL9735-6
Instrument: gcms-t.i
Y (x10^5)
-Dibromofluoromethane (4.984)
-Pentafluorobenzene (5.799)+
-1,4-Difluorobenzene (6.586)
Toluene-D8 (8.545)
Chlorobenzene-D5 (10.640)
P-Bromofluorobenzene (12.277)
1,4-Dichlorobenzene-D4 (13.729)
\\target_server\gg\chem\gcms-t.i\T101218.b\T7755.D
Min

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-7
Client ID: MW07A-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7756.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Dichlorodifluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Chloromethane	U	2.0	ug/L	1	2	2.0	0.36
Vinyl Chloride	U	2.0	ug/L	1	2	2.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	2.0	ug/L	1	2	2.0	0.55
Trichlorofluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Diethyl Ether	U	1.0	ug/L	1	1	1.0	0.40
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
Methyl tert-butyl Ether	U	1.0	ug/L	1	1	1.0	0.36
Di-Isopropyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
Ethyl Tertiary-Butyl Ether	U	1.0	ug/L	1	1	1.0	0.23
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
2,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromochloromethane	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
Tetrahydrofuran	U	5.0	ug/L	1	5	5.0	1.7
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
1,1-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.21
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
Tertiary-Amyl Methyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
Dibromomethane	U	1.0	ug/L	1	1	1.0	0.46
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
1,4-Dioxane	U	100	ug/L	1	100	100	8.8
Toluene	U	1.0	ug/L	1	1	1.0	0.27

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-7
Client ID: MW07A-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7756.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
1,3-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.22
1,2-Dibromoethane	U	1.0	ug/L	1	1	1.0	0.22
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,1,1,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.19
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23
Isopropylbenzene	U	1.0	ug/L	1	1	1.0	0.23
Bromobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Propylbenzene	U	1.0	ug/L	1	1	1.0	0.26
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
1,3,5-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.20
2-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.20
1,2,3-Trichloropropane	U	1.0	ug/L	1	1	1.0	0.19
4-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.26
tert-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.31
1,2,4-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.19
P-Isopropyltoluene	U	1.0	ug/L	1	1	1.0	0.25
1,3-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.26
1,4-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.23
sec-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.15
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	1	1	1.0	0.50
Hexachlorobutadiene	U	1.0	ug/L	1	1	1.0	0.52
1,2,4-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.37
Naphthalene	U	1.0	ug/L	1	1	1.0	0.30

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-7
Client ID: MW07A-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7756.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,2,3-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.27
P-Bromofluorobenzene		101.	%				
Toluene-d8		105.	%				
1,2-Dichloroethane-d4		126.	%				
Dibromofluoromethane		114.	%				

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Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7756.D
Report Date: 05-Nov-2018 13:42

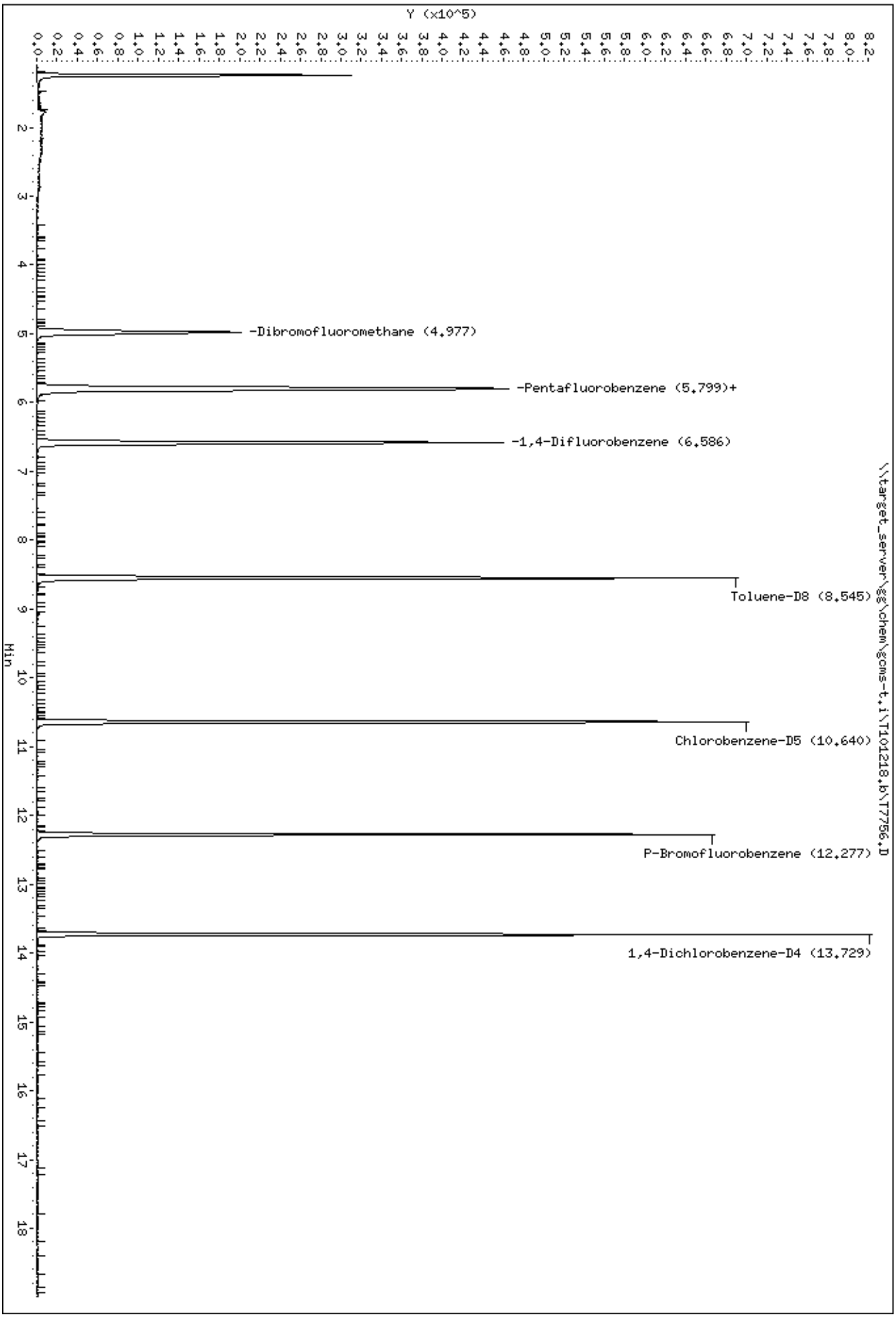
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T101218.b\T7756.D
Lab Smp Id: SL9735-7 Client Smp ID: MW07A-100318
Inj Date : 12-OCT-2018 16:45 MS Autotune Date: 31-AUG-2018 16:19
Operator : HG/JR Inst ID: gcms-t.i
Smp Info : SL9735-7
Misc Info : WG238427,WG238351-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T101218.b\T8A05(56)D.m
Meth Date : 05-Nov-2018 13:33 tcote Quant Type: ISTD
Cal Date : 11-OCT-2018 12:28 Cal File: T7724.D
Als bottle: 12
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
$ 34 Dibromofluoromethane	113	4.976	4.977	(0.859)	187579	56.7708	56.8	
* 41 Pentafluorobenzene	168	5.792	5.785	(1.000)	256968	50.0000		
$ 42 1,2-Dichloroethane-D4	65	5.813	5.813	(1.004)	301636	63.1312	63.1	
* 48 1,4-Difluorobenzene	114	6.585	6.586	(1.000)	411277	50.0000		
$ 56 Toluene-D8	98	8.544	8.545	(1.297)	531035	52.4521	52.4	
* 68 Chlorobenzene-D5	117	10.639	10.640	(1.000)	373218	50.0000		
$ 77 P-Bromofluorobenzene	95	12.277	12.277	(1.864)	220299	50.6793	50.7	
* 93 1,4-Dichlorobenzene-D4	152	13.728	13.729	(1.000)	184488	50.0000		


Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7756.D
Date : 12-OCT-2018 16:45
Client ID: MW07A-100318
Sample Info: SL9735-7
Instrument: gcms-t.i
Y (x10^5)
Min
-Dibromofluoromethane (4.977)
-Pentafluorobenzene (5.799)+
-1,4-Difluorobenzene (6.586)
Toluene-D8 (8.545)
Chlorobenzene-D5 (10.640)
P-Bromofluorobenzene (12.277)
1,4-Dichlorobenzene-D4 (13.729)
\\target_server\gg\chem\gcms-t.i\T101218.b\T7756.D

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-8
Client ID: EB-001-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7746.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Dichlorodifluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Chloromethane	U	2.0	ug/L	1	2	2.0	0.36
Vinyl Chloride	U	2.0	ug/L	1	2	2.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	2.0	ug/L	1	2	2.0	0.55
Trichlorofluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Diethyl Ether	U	1.0	ug/L	1	1	1.0	0.40
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
Methyl tert-butyl Ether	U	1.0	ug/L	1	1	1.0	0.36
Di-Isopropyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
Ethyl Tertiary-Butyl Ether	U	1.0	ug/L	1	1	1.0	0.23
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
2,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromochloromethane	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
Tetrahydrofuran	U	5.0	ug/L	1	5	5.0	1.7
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
1,1-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.21
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
Tertiary-Amyl Methyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
Dibromomethane	U	1.0	ug/L	1	1	1.0	0.46
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
1,4-Dioxane	U	100	ug/L	1	100	100	8.8
Toluene	J	0.44	ug/L	1	1	1.0	0.27

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-8
Client ID: EB-001-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7746.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
1,3-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.22
1,2-Dibromoethane	U	1.0	ug/L	1	1	1.0	0.22
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,1,1,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.19
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23
Isopropylbenzene	U	1.0	ug/L	1	1	1.0	0.23
Bromobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Propylbenzene	U	1.0	ug/L	1	1	1.0	0.26
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
1,3,5-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.20
2-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.20
1,2,3-Trichloropropane	U	1.0	ug/L	1	1	1.0	0.19
4-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.26
tert-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.31
1,2,4-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.19
P-Isopropyltoluene	U	1.0	ug/L	1	1	1.0	0.25
1,3-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.26
1,4-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.23
sec-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.15
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	1	1	1.0	0.50
Hexachlorobutadiene	U	1.0	ug/L	1	1	1.0	0.52
1,2,4-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.37
Naphthalene	U	1.0	ug/L	1	1	1.0	0.30

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-8
Client ID: EB-001-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7746.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,2,3-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.27
P-Bromofluorobenzene		102.	%				
Toluene-d8		104.	%				
1,2-Dichloroethane-d4		127.	%				
Dibromofluoromethane		115.	%				

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Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7746.D
Report Date: 05-Nov-2018 13:42

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T101218.b\T7746.D
Lab Smp Id: SL9735-8 Client Smp ID: EB-001-100318
Inj Date : 12-OCT-2018 11:45 MS Autotune Date: 31-AUG-2018 16:19
Operator : HG/JR Inst ID: gcms-t.i
Smp Info : SL9735-8
Misc Info : WG238427,WG238351-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T101218.b\T8A05(56)D.m
Meth Date : 05-Nov-2018 13:33 tcote Quant Type: ISTD
Cal Date : 11-OCT-2018 12:28 Cal File: T7724.D
Als bottle: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

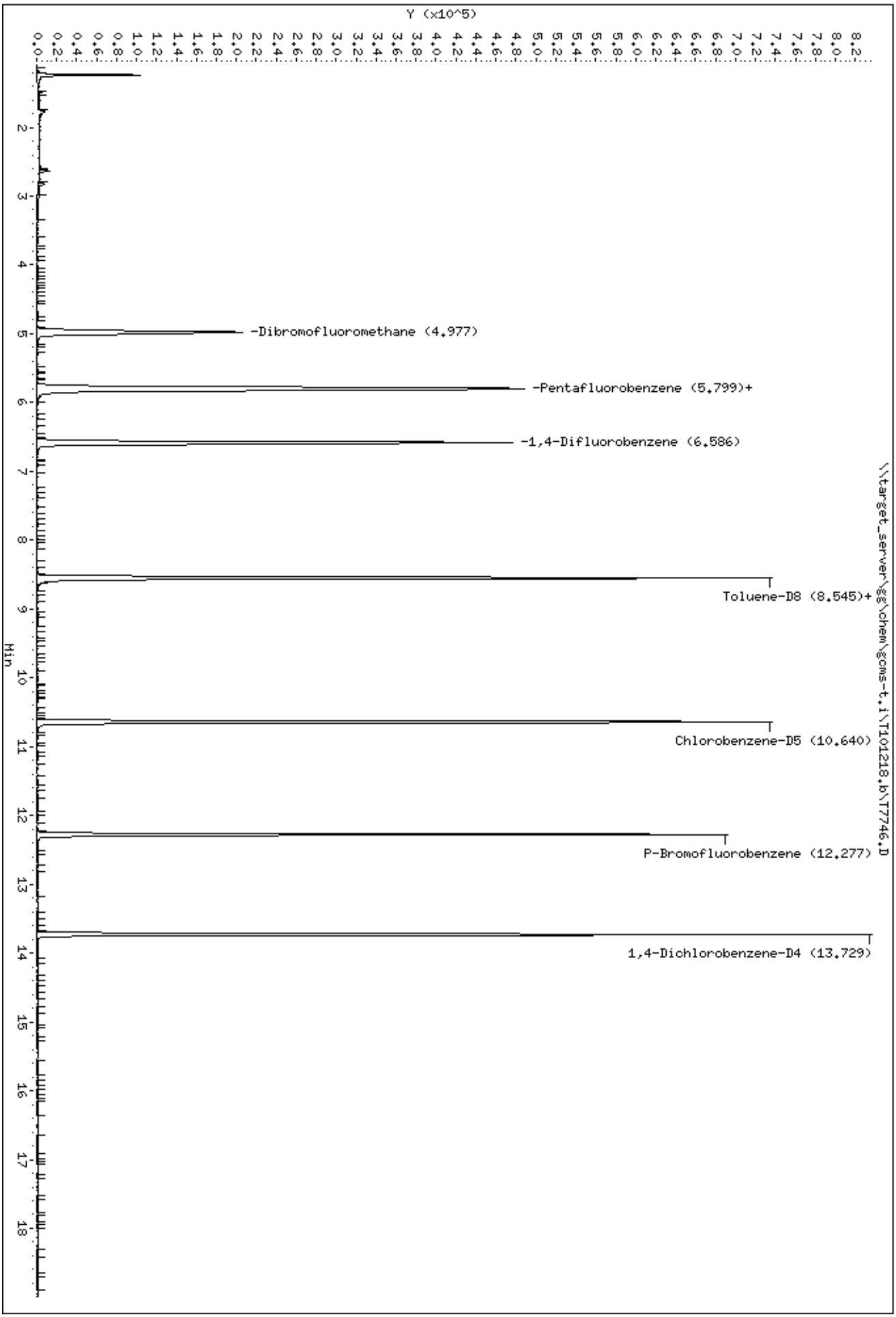
Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
$	34 Dibromofluoromethane	113	4.984	4.977	(0.861)	199288	57.3683	57.4	
*	41 Pentafluorobenzene	168	5.792	5.785	(1.000)	270165	50.0000		
$	42 1,2-Dichloroethane-D4	65	5.813	5.813	(1.004)	319028	63.5096	63.5	
*	48 1,4-Difluorobenzene	114	6.585	6.586	(1.000)	440148	50.0000		
$	56 Toluene-D8	98	8.544	8.545	(1.297)	561999	51.8694	51.9	
	57 Toluene	92	8.616	8.616	(1.308)	2451	0.44587	0.44(a)	
*	68 Chlorobenzene-D5	117	10.639	10.640	(1.000)	398207	50.0000		
$	77 P-Bromofluorobenzene	95	12.277	12.277	(1.864)	238106	51.1829	51.2	
*	93 1,4-Dichlorobenzene-D4	152	13.728	13.729	(1.000)	194975	50.0000		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).


Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7746.D
Date : 12-OCT-2018 11:45
Client ID: EB-001-100318
Sample Info: SL9735-8
Instrument: gcms-t.i
Y (x10^5)
-Dibromofluoromethane (4.977)
-Pentafluorobenzene (5.799)+
-1,4-Difluorobenzene (6.586)
Toluene-D8 (8.545)+
Chlorobenzene-D5 (10.640)
P-Bromofluorobenzene (12.277)
1,4-Dichlorobenzene-D4 (13.729)
\\target_server\gg\chem\gcms-t.i\T101218.b\T7746.D
Min

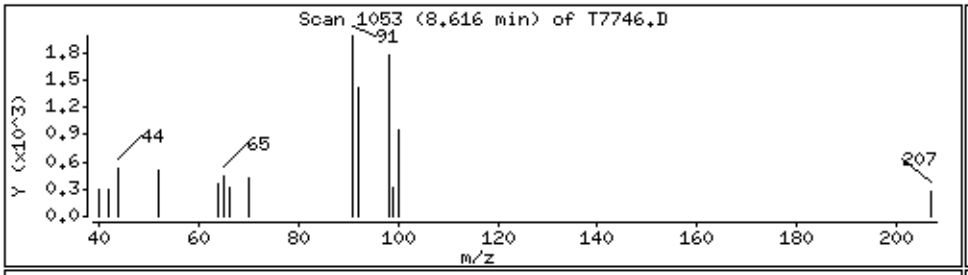
Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7746.D

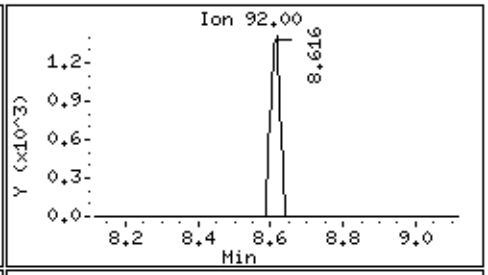
Date : 12-OCT-2018 11:45

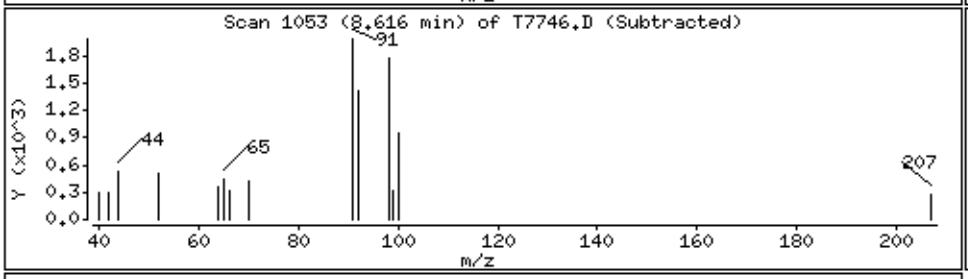
Client ID: EB-001-100318 Instrument: gcms-t.i

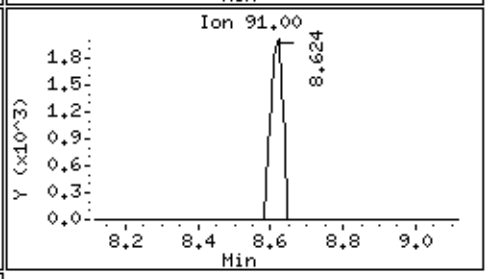
Sample Info: SL9735-8

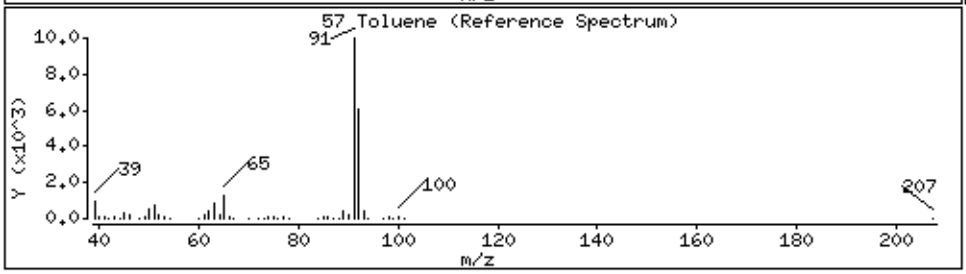
57 Toluene Concentration: 0.44 ug/l











Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-9
Client ID: TB-001-092818
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7745.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 19-DEC-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Dichlorodifluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Chloromethane	U	2.0	ug/L	1	2	2.0	0.36
Vinyl Chloride	U	2.0	ug/L	1	2	2.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	2.0	ug/L	1	2	2.0	0.55
Trichlorofluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Diethyl Ether	U	1.0	ug/L	1	1	1.0	0.40
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
Methyl tert-butyl Ether	U	1.0	ug/L	1	1	1.0	0.36
Di-Isopropyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
Ethyl Tertiary-Butyl Ether	U	1.0	ug/L	1	1	1.0	0.23
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
2,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromochloromethane	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
Tetrahydrofuran	U	5.0	ug/L	1	5	5.0	1.7
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
1,1-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.21
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
Tertiary-Amyl Methyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
Dibromomethane	U	1.0	ug/L	1	1	1.0	0.46
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
1,4-Dioxane	U	100	ug/L	1	100	100	8.8
Toluene	U	1.0	ug/L	1	1	1.0	0.27

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P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
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REISSUE **Katahdin Analytical Services 1000054**

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-9
Client ID: TB-001-092818
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7745.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 19-DEC-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
1,3-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.22
1,2-Dibromoethane	U	1.0	ug/L	1	1	1.0	0.22
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,1,1,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.19
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23
Isopropylbenzene	U	1.0	ug/L	1	1	1.0	0.23
Bromobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Propylbenzene	U	1.0	ug/L	1	1	1.0	0.26
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
1,3,5-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.20
2-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.20
1,2,3-Trichloropropane	U	1.0	ug/L	1	1	1.0	0.19
4-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.26
tert-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.31
1,2,4-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.19
P-Isopropyltoluene	U	1.0	ug/L	1	1	1.0	0.25
1,3-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.26
1,4-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.23
sec-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.15
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	1	1	1.0	0.50
Hexachlorobutadiene	U	1.0	ug/L	1	1	1.0	0.52
1,2,4-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.37
Naphthalene	U	1.0	ug/L	1	1	1.0	0.30

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P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
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REISSUE **Katahdin Analytical Services 1000055**

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-9
Client ID: TB-001-092818
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: T7745.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 19-DEC-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,2,3-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.27
P-Bromofluorobenzene		99.8	%				
Toluene-d8		102.	%				
1,2-Dichloroethane-d4		120.	%				
Dibromofluoromethane		114.	%				

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Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7745.D
Report Date: 05-Nov-2018 13:42

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T101218.b\T7745.D
Lab Smp Id: SL9735-9 Client Smp ID: TB-001-100318
Inj Date : 12-OCT-2018 11:15 MS Autotune Date: 31-AUG-2018 16:19
Operator : HG/JR Inst ID: gcms-t.i
Smp Info : SL9735-9
Misc Info : WG238427,WG238351-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T101218.b\T8A05(56)D.m
Meth Date : 05-Nov-2018 13:33 tcote Quant Type: ISTD
Cal Date : 11-OCT-2018 12:28 Cal File: T7724.D
Als bottle: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
$ 34 Dibromofluoromethane	113	4.976	4.977	(0.859)	204767	57.1365	57.1	
* 41 Pentafluorobenzene	168	5.791	5.785	(1.000)	278719	50.0000		
$ 42 1,2-Dichloroethane-D4	65	5.813	5.813	(1.004)	312333	60.2686	60.3	
* 48 1,4-Difluorobenzene	114	6.585	6.586	(1.000)	449901	50.0000		
$ 56 Toluene-D8	98	8.544	8.545	(1.297)	564197	50.9434	50.9	
* 68 Chlorobenzene-D5	117	10.639	10.640	(1.000)	393129	50.0000		
$ 77 P-Bromofluorobenzene	95	12.277	12.277	(1.864)	237363	49.9171	49.9	
* 93 1,4-Dichlorobenzene-D4	152	13.728	13.729	(1.000)	193343	50.0000		

Data File: \\target_server\gc\chem\gcms-t.i\T101218.b\T7745.D
Date : 12-OCT-2018 11:15
Client ID: TB-001-100318
Sample Info: SL9735-9
Instrument: gcms-t.i
\\target_server\gc\chem\gcms-t.i\T101218.b\T7745.D
Y (x10^5)
Min
-Dibromofluoromethane (4.977)
-Pentafluorobenzene (5.799)+
-1,4-Difluorobenzene (6.586)
Toluene-D8 (8.545)
Chlorobenzene-D5 (10.640)
P-Bromofluorobenzene (12.277)
1,4-Dichlorobenzene-D4 (13.729)

Standards Data Section

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SL9735
Project : New Bedford Harbor **Instrument ID:** GCMS-T
Lab File IDs : T7722.D T7721.D T7720.D T7719.D T7724.D T7723.D **Column ID:**
Calibration Date(s): 11-OCT-18 09:58 11-OCT-18 12:28

	1.0000 Level 1	5.0000 Level 2	20.0000 Level 3	50.0000 Level 4	100.0000 Level 5	150.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Dichlorodifluoromethane	0.38539	0.44534	0.51820	0.50535	0.38916	0.40605	AVG		0.44158		13.2510	15.00000	O
Chloromethane	0.37025	0.37046	0.44375	0.43054	0.35541	0.32985	AVG		0.38338		11.5805	15.00000	O
Vinyl chloride	0.41341	0.46071	0.56129	0.51555	0.42987	0.42961	AVG		0.46840		12.4207	15.00000	O
Bromomethane	3833	14227	64190	129143	258344	357339	LNR	-0.05374	0.32082		0.99750	0.99000	O
Chloroethane	0.29054	0.30193	0.32142	0.30835	0.24557	0.25872	AVG		0.28776		10.2951	15.00000	O
Trichlorofluoromethane	0.94189	0.91652	1.10453	1.05611	0.82419	0.88759	AVG		0.95514		11.0690	15.00000	O
Diethyl Ether	0.38988	0.40356	0.40398	0.40146	0.36241	0.36217	AVG		0.38724		5.16527	15.00000	O
1,1-Dichloroethene	2268	13738	75765	178683	342466	468895	LNR	-0.03699	0.42660		0.99670	0.99000	O
Carbon Disulfide	1.28322	1.03523	1.34576	1.22790	1.06591	1.03044	AVG		1.16474		11.8576	15.00000	O
Methylene Chloride	5186	18135	83319	204921	404774	557523	LNR	-0.03137	0.50527		0.99838	0.99000	O
Acetone	0.15898	0.13979	0.15170	0.15967	0.11343	+++++	AVG		0.14471		13.2862	15.00000	O
trans-1,2-Dichloroethene	0.55305	0.36600	0.48708	0.50223	0.46945	0.46546	AVG		0.47388		12.9996	15.00000	O
Methyl tert-butyl ether	1.28951	1.09832	1.38683	1.55025	1.28559	1.22689	AVG		1.30623		11.6742	15.00000	O
Di-isopropyl ether	0.88929	1.18443	1.28836	1.25990	1.23001	1.17917	AVG		1.17186		12.3520	15.00000	O
1,1-Dichloroethane	0.93664	0.80120	0.98147	0.91850	0.85547	0.81728	AVG		0.88509		8.08068	15.00000	O
Ethyl tertiary-butyl ether	0.94219	1.21517	1.41003	1.42908	1.35415	1.34537	AVG		1.28266		14.2558	15.00000	O
cis-1,2-Dichloroethene	0.47034	0.36278	0.47064	0.46154	0.44163	0.42728	AVG		0.43904		9.36072	15.00000	O
2,2-Dichloropropane	0.85678	0.78790	1.01642	0.98608	0.89951	0.88041	AVG		0.90452		9.33643	15.00000	O
Bromochloromethane	0.16422	0.17463	0.20890	0.19589	0.19227	0.17137	AVG		0.18455		9.28026	15.00000	O
Chloroform	1.01980	0.92934	1.15703	1.10885	1.02571	0.99963	AVG		1.04006		7.80194	15.00000	O
Carbon Tetrachloride	0.41370	0.48892	0.63157	0.62607	0.55343	0.55948	AVG		0.54553		15.2775	15.00000	W
Tetrahydrofuran	1750	13311	68075	174632	370517	520624	LNR	0.01460	0.09442		0.99985	0.99000	O
1,1,1-Trichloroethane	0.86862	0.89731	1.16079	1.09373	0.98063	0.97752	AVG		0.99643		11.2875	15.00000	O
1,1-Dichloropropene	3185	17992	107246	263847	515986	722718	LNR	-0.01726	0.42722		0.99845	0.99000	O
2-Butanone	0.13042	0.14938	0.16559	0.16993	0.16256	0.15724	AVG		0.15585		9.20292	15.00000	O
Benzene	0.92027	0.93246	1.13205	1.11204	1.04156	1.00048	AVG		1.02314		8.67853	15.00000	O
Tertiary-amyl methyl ether	1.05876	1.19717	1.25090	1.28062	1.21562	1.23228	AVG		1.20589		6.43671	15.00000	O
1,2-Dichloroethane	0.71860	0.57693	0.63185	0.60437	0.56327	0.56346	AVG		0.60975		9.77086	15.00000	O
Trichloroethene	0.26202	0.28651	0.35454	0.34337	0.31201	0.30852	AVG		0.31116		11.0861	15.00000	O
Dibromomethane	0.18920	0.20438	0.22492	0.22929	0.22134	0.21868	AVG		0.21463		7.01644	15.00000	O
1,2-Dichloropropane	1745	12537	66014	159957	334170	458888	LNR	-0.01053	0.27246		0.99926	0.99000	O
Bromodichloromethane	0.46426	0.43280	0.53557	0.54498	0.51193	0.51172	AVG		0.50021		8.64979	15.00000	O
1,4-Dioxane	0.00347	0.00518	0.00356	0.00253	0.00272	0.00157	AVG		0.00317		38.5205	15.00000	W
cis-1,3-dichloropropene	0.41006	0.42127	0.57117	0.58080	0.55781	0.54519	AVG		0.51438		15.0652	15.00000	W
Toluene	0.56462	0.56244	0.68133	0.67092	0.64197	0.62554	AVG		0.62447		8.20505	15.00000	O
Tetrachloroethene	0.19799	0.19211	0.26470	0.25955	0.24284	0.23604	AVG		0.23221		13.2173	15.00000	O
4-methyl-2-pentanone	0.17408	0.19388	0.22852	0.23845	0.22255	0.21862	AVG		0.21268		11.3063	15.00000	O

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http://katahdinlab.com
sales@katahdinlab.com

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SL9735
Project : New Bedford Harbor **Instrument ID:** GCMS-T
Lab File IDs : T7722.D T7721.D T7720.D T7719.D T7724.D T7723.D **Column ID:**
Calibration Date(s): 11-OCT-18 09:58 11-OCT-18 12:28

trans-1,3-Dichloropropene	0.48748	0.45283	0.55017	0.57275	0.54295	0.52872	AVG		0.52248		8.48564	15.00000	O
1,1,2-Trichloroethane	0.19121	0.19737	0.23071	0.23736	0.23464	0.22889	AVG		0.22003		9.20325	15.00000	O
Dibromochloromethane	0.37438	0.34335	0.39694	0.41797	0.39788	0.39830	AVG		0.38813		6.67990	15.00000	O
1,3-Dichloropropane	0.44146	0.45868	0.54562	0.55339	0.54044	0.53474	AVG		0.51239		9.55635	15.00000	O
1,2-Dibromoethane	0.31104	0.23532	0.28761	0.30486	0.29389	0.29307	AVG		0.28763		9.39333	15.00000	O
2-Hexanone	4753	33093	182097	465000	949301	1316096	LNR	-0.05313	0.17101		0.99903	0.99000	O
Chlorobenzene	0.75863	0.69008	0.83917	0.81680	0.77074	0.74394	AVG		0.76989		6.91487	15.00000	O
Ethylbenzene	1.24861	1.25551	1.59860	1.54233	1.39440	1.35448	AVG		1.39899		10.3878	15.00000	O
1,1,1,2-Tetrachloroethane	0.31880	0.33875	0.36732	0.36303	0.34440	0.34733	AVG		0.34661		5.06170	15.00000	O
m+p-Xylenes	15362	93248	517667	1229720	2348302	3094149	LNR	-0.09703	1.01747		0.99396	0.99000	O
o-Xylene	6054	40632	246752	632963	1272309	1766111	LNR	-0.01138	1.14821		0.99866	0.99000	O
Styrene	4943	29782	172596	440922	914677	1290660	LNR	-0.00131	0.83521		0.99957	0.99000	O
Bromoform	0.20396	0.23098	0.27431	0.28352	0.27401	0.27728	AVG		0.25735		12.5238	15.00000	O
Isopropylbenzene	6846	41237	273692	703048	1388715	1895370	LNR	-0.01543	2.42709		0.99804	0.99000	O
Bromobenzene	0.64158	0.61251	0.74637	0.73935	0.68665	0.68248	AVG		0.68482		7.69076	15.00000	O
N-Propylbenzene	2.50483	2.73340	3.59178	3.47405	3.01097	2.95914	AVG		3.04569		13.7778	15.00000	O
1,1,2,2-Tetrachloroethane	0.73826	0.66921	0.74156	0.75365	0.68974	0.71012	AVG		0.71709		4.61336	15.00000	O
2-Chlorotoluene	1.77089	1.69378	2.23599	2.17437	1.96350	1.95163	AVG		1.96503		10.8835	15.00000	O
1,2,3-Trichloropropane	0.69295	0.65209	0.70874	0.72578	0.66249	0.68316	AVG		0.68753		4.03304	15.00000	O
1,3,5-Trimethylbenzene	6475	44248	256702	636386	1231796	1708456	LNR	-0.02230	2.17334		0.99781	0.99000	O
4-Chlorotoluene	1.70852	1.84013	2.40380	2.34162	2.11353	2.06075	AVG		2.07806		13.0958	15.00000	O
tert-Butylbenzene	6025	40608	242278	588979	1185118	1643411	LNR	-0.01469	2.08992		0.99883	0.99000	O
1,2,4-Trimethylbenzene	6685	42764	256485	636153	1258102	1732076	LNR	-0.01865	2.20811		0.99831	0.99000	O
sec-Butylbenzene	7186	52199	302477	740996	1412452	2001449	LNR	-0.02091	2.53197		0.99754	0.99000	O
P-Isopropyltoluene	5982	38540	258474	632595	1270620	1748863	LNR	-0.01407	2.23116		0.99859	0.99000	O
1,3-Dichlorobenzene	0.98191	1.08070	1.22482	1.20531	1.13173	1.13901	AVG		1.12725		7.84103	15.00000	O
1,4-Dichlorobenzene	1.16491	1.05494	1.25195	1.22676	1.14003	1.15259	AVG		1.16520		5.97871	15.00000	O
N-Butylbenzene	6870	39748	252925	630684	1222322	1722933	LNR	-0.01513	2.18503		0.99804	0.99000	O
1,2-Dichlorobenzene	1.06391	0.95515	1.17538	1.17398	1.07369	1.07884	AVG		1.08683		7.53587	15.00000	O
1,2-Dibromo-3-Chloropropane	349	4219	16415	44747	93429	132056	LNR	0.00304	0.16732		0.99966	0.99000	O
Hexachlorobutadiene	0.35780	0.34574	0.44212	0.42676	0.39874	0.39923	AVG		0.39507		9.51947	15.00000	O
1,2,4-Trichlorobenzene	0.61655	0.53766	0.73290	0.79873	0.76989	0.77897	AVG		0.70578		14.8693	15.00000	O
Naphthalene	4235	24257	152202	423811	910419	1260586	LNR	0.01447	1.61300		0.99973	0.99000	O
1,2,3-Trichlorobenzene	2401	12738	70828	190515	410799	569231	LNR	0.00965	0.72659		0.99985	0.99000	O
Dibromofluoromethane	0.66653	0.64855	0.63095	0.64040	0.63951	0.63151	AVG		0.64291		2.06395	15.00000	
1,2-Dichloroethane-D4	1.00428	0.94150	0.90733	0.93582	0.86954	0.91958	AVG		0.92967		4.80125	15.00000	
Toluene-D8	1.23628	1.22838	1.18989	1.22814	1.26053	1.24173	AVG		1.23082		1.89482	15.00000	
P-Bromofluorobenzene	0.52719	0.52584	0.51947	0.53540	0.53140	0.53151	AVG		0.52847		1.05507	15.00000	

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL9735
Project : New Bedford Harbor
Instrument ID: GCMS-T
Lab File IDs : T7722.D T7721.D T7720.D T7719.D T7724.D T7723.D
Column ID:
Calibration Date(s): 11-OCT-18 09:58
11-OCT-18 12:28

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7741A.D
Report Date: 14-Oct-2018 19:47

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa02236
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: WG238427-1
Level: LOW Operator: HG/JR
Data Type: MS DATA SampleType: LCS
SpikeList File: IND_CHECK.spk Quant Type: ISTD
Sublist File: all.sub
Method File: \\target_server\gg\chem\gcms-t.i\T101218.b\T8A05(56)D.m
Misc Info: WG238427,WG238351-4

SPIKE	COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
1	Dichlorodifluorome	50.0	82.4	164.71*	80-120
2	Chloromethane	50.0	65.2	130.33*	80-120
3	Vinyl chloride	50.0	62.5	124.96*	80-120
4	Bromomethane	50.0	54.3	108.67	80-120
5	Chloroethane	50.0	60.5	120.98*	80-120
6	Trichlorofluoromet	50.0	57.6	115.21	80-120
7	Diethyl Ether	50.0	49.4	98.83	80-120
19	Tertiary-butyl alc	250	220	88.08	80-120
8	1,1-Dichloroethene	50.0	53.4	106.80	80-120
10	Carbon Disulfide	50.0	55.0	109.91	80-120
9	Freon-113	50.0	54.5	109.02	80-120
11	Iodomethane	50.0	48.9	97.77	80-120
12	Acrolein	250	242	96.90	80-120
14	Methylene Chloride	50.0	52.5	105.02	80-120
15	Acetone	50.0	47.0	94.04	80-120
45	Isobutyl Alcohol	1000	976	97.58	80-120
16	trans-1,2-Dichloro	50.0	44.2	88.32	80-120
13	Allyl Chloride	50.0	51.3	102.52	80-120
18	Methyl tert-butyl	50.0	54.8	109.69	80-120
20	Acetonitrile	500	458	91.53	80-120
21	Di-isopropyl ether	50.0	52.5	104.95	80-120
22	Chloroprene	50.0	52.3	104.64	80-120
39	Propionitrile	500	484	96.81	80-120
40	Methacrylonitrile	500	522	104.50	80-120
23	1,1-Dichloroethane	50.0	51.7	103.42	80-120
24	Acrylonitrile	250	248	99.27	80-120
25	Ethyl tertiary-but	50.0	53.6	107.19	80-120
26	Vinyl Acetate	50.0	54.2	108.30	80-120
27	cis-1,2-Dichloroet	50.0	49.9	99.88	80-120
M 103	1,2-Dichloroethyle	100	94.1	94.10	80-120
52	Methyl Methacrylat	50.0	48.8	97.68	80-120
28	2,2-Dichloropropan	50.0	54.1	108.19	80-120
30	Bromochloromethane	50.0	55.7	111.46	80-120
31	Chloroform	50.0	51.2	102.37	80-120
32	Carbon Tetrachlori	50.0	56.5	113.03	80-120
33	Tetrahydrofuran	50.0	49.3	98.68	80-120
35	1,1,1-Trichloroeth	50.0	52.3	104.53	80-120
36	1,1-Dichloropropen	50.0	53.7	107.47	80-120
37	2-Butanone	50.0	53.1	106.28	80-120
38	Benzene	50.0	51.9	103.80	80-120

Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7741A.D
Report Date: 14-Oct-2018 19:47

	SPIKE COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	29 Cyclohexane	50.0	57.3	114.69	80-120
	62 Ethyl Methacrylate	50.0	48.8	97.54	80-120
	43 Tertiary-amyl meth	50.0	51.3	102.59	80-120
	44 1,2-Dichloroethane	50.0	50.2	100.42	80-120
	47 Trichloroethene	50.0	53.3	106.65	80-120
	49 Dibromomethane	50.0	52.5	105.05	80-120
	50 1,2-Dichloropropan	50.0	51.1	102.18	80-120
	51 Bromodichlorometha	50.0	56.5	112.93	80-120
	55 cis-1,3-dichloropr	50.0	53.4	106.72	80-120
	53 1,4-Dioxane	1000	717	71.75*	80-120
	54 2-Chloroethylvinyl	50.0	45.0	90.09	80-120
	57 Toluene	50.0	52.8	105.57	80-120
	59 4-methyl-2-pentano	50.0	53.6	107.13	80-120
	58 Tetrachloroethene	50.0	53.3	106.53	80-120
	60 trans-1,3-Dichloro	50.0	53.9	107.79	80-120
	61 1,1,2-Trichloroeth	50.0	52.6	105.22	80-120
	63 Dibromochlorometha	50.0	54.7	109.39	80-120
	64 1,3-Dichloropropan	50.0	51.5	102.99	80-120
	65 1,2-Dibromoethane	50.0	50.4	100.82	80-120
	67 2-Hexanone	50.0	47.0	94.11	80-120
	69 Chlorobenzene	50.0	51.1	102.26	80-120
	70 Ethylbenzene	50.0	55.0	109.94	80-120
	71 1,1,1,2-Tetrachlor	50.0	52.9	105.77	80-120
M	105 Xylenes (total)	150	166	111.03	80-120
	72 m+p-Xylenes	100	114	113.81	80-120
	73 o-Xylene	50.0	52.7	105.46	80-120
	74 Styrene	50.0	52.2	104.50	80-120
	75 Bromoform	50.0	55.7	111.47	80-120
	76 Isopropylbenzene	50.0	54.6	109.27	80-120
	79 cis-1,4-Dichloro-2	50.0	52.2	104.40	80-120
	85 trans-1,4-Dichloro	50.0	53.6	107.32	80-120
	78 Bromobenzene	50.0	48.9	97.81	80-120
	80 N-Propylbenzene	50.0	54.2	108.46	80-120
	81 1,1,2,2-Tetrachlor	50.0	50.4	100.71	80-120
	84 1,3,5-Trimethylben	50.0	52.2	104.48	80-120
	82 2-Chlorotoluene	50.0	53.3	106.63	80-120
	83 1,2,3-Trichloropro	50.0	49.2	98.42	80-120
	86 4-Chlorotoluene	50.0	53.8	107.62	80-120
	87 tert-Butylbenzene	50.0	51.5	103.00	80-120
	88 Pentachloroethane	50.0	50.1	100.30	80-120
	89 1,2,4-Trimethylben	50.0	53.4	106.79	80-120
	91 P-Isopropyltoluene	50.0	52.4	104.74	80-120
	92 1,3-Dichlorobenzen	50.0	52.5	105.09	80-120
	94 1,4-Dichlorobenzen	50.0	50.3	100.69	80-120
	96 N-Butylbenzene	50.0	52.8	105.54	80-120
	90 sec-Butylbenzene	50.0	53.9	107.79	80-120
	97 1,2-Dichlorobenzen	50.0	50.1	100.16	80-120
	98 1,2-Dibromo-3-Chlo	50.0	48.5	97.00	80-120
	99 1,3,5-Trichloroben	50.0	51.2	102.50	80-120
	100 Hexachlorobutadien	50.0	52.0	104.06	80-120
	101 1,2,4-Trichloroben	50.0	52.0	104.11	80-120
	95 1,2,3-Trimethylben	50.0	52.9	105.75	80-120
	102 Naphthalene	50.0	47.3	94.59	80-120
	104 1,2,3-Trichloroben	50.0	49.0	97.90	80-120

Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7741A.D
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	SPIKE COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	17 Methyl Acetate	50.0	43.0	86.01	80-120
	46 Methylcyclohexane	50.0	50.7	101.34	80-120
M	66 Total Alkylbenzene	350	370	105.83	80-120

	SURROGATE COMPOUND	AMOUNT ADDED ug/l	AMOUNT RECOVERED ug/l	% RECOVERED	LIMITS
$	34 Dibromofluorometha	50.0	48.4	96.78	68-128
$	42 1,2-Dichloroethane	50.0	49.9	99.84	67-135
$	56 Toluene-D8	50.0	50.4	100.72	65-128
$	77 P-Bromofluorobenze	50.0	52.4	104.89	56-133

Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7741A.D
Report Date: 14-Oct-2018 19:47

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T101218.b\T7741A.D
Lab Smp Id: WG238427-1
Inj Date : 12-OCT-2018 08:53 MS Autotune Date: 31-AUG-2018 16:19
Operator : HG/JR Inst ID: gcms-t.i
Smp Info : WG238427-1
Misc Info : WG238427,WG238351-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T101218.b\T8A05(56)D.m
Meth Date : 13-Oct-2018 09:02 tcote Quant Type: ISTD
Cal Date : 11-OCT-2018 12:28 Cal File: T7724.D
Als bottle: 2 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.344	1.344	(0.232)	254588	82.3567	82.4(R)	
2	Chloromethane	50	1.480	1.480	(0.256)	174897	65.1671	65.2(R)	
3	Vinyl chloride	62	1.537	1.537	(0.265)	204875	62.4797	62.5(R)	
4	Bromomethane	94	1.759	1.759	(0.304)	128062	54.3331	54.3	
5	Chloroethane	64	1.852	1.852	(0.320)	121851	60.4891	60.5(R)	
6	Trichlorofluoromethane	101	1.952	1.952	(0.337)	385156	57.6025	57.6	
7	Diethyl Ether	59	2.173	2.174	(0.375)	133965	49.4172	49.4	
8	1,1-Dichloroethene	96	2.338	2.331	(0.404)	164998	53.3996	53.4	
9	Freon-113	151	2.359	2.360	(0.407)	143202	54.5116	54.5	
10	Carbon Disulfide	76	2.367	2.360	(0.409)	448086	54.9544	55.0	
11	Iodomethane	142	2.459	2.453	(0.425)	156022	48.8826	48.9	
12	Acrolein	56	2.610	2.617	(0.451)	121461	242.251	242	
13	Allyl Chloride	41	2.724	2.724	(0.470)	227037	51.2606	51.3	
14	Methylene Chloride	84	2.824	2.825	(0.488)	191275	52.5079	52.5	
15	Acetone	43	2.874	2.875	(0.496)	47636	47.0215	47.0	
16	trans-1,2-Dichloroethene	96	2.967	2.968	(0.512)	146495	44.1597	44.2	
17	Methyl Acetate	43	2.989	2.989	(0.516)	103680	43.0068	43.0	
18	Methyl tert-butyl ether	73	3.074	3.075	(0.531)	501518	54.8450	54.8	
19	Tertiary-butyl alcohol	59	3.174	3.182	(0.548)	69743	220.191	220	
20	Acetonitrile	41	3.339	3.339	(0.577)	136706	457.664	458	
21	Di-isopropyl ether	45	3.468	3.468	(0.599)	430480	52.4744	52.5	
22	Chloroprene	53	3.582	3.582	(0.619)	259247	52.3191	52.3	
23	1,1-Dichloroethane	63	3.611	3.611	(0.623)	320385	51.7075	51.7	
24	Acrylonitrile	52	3.682	3.683	(0.636)	204615	248.180	248	

Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7741A.D
Report Date: 14-Oct-2018 19:47

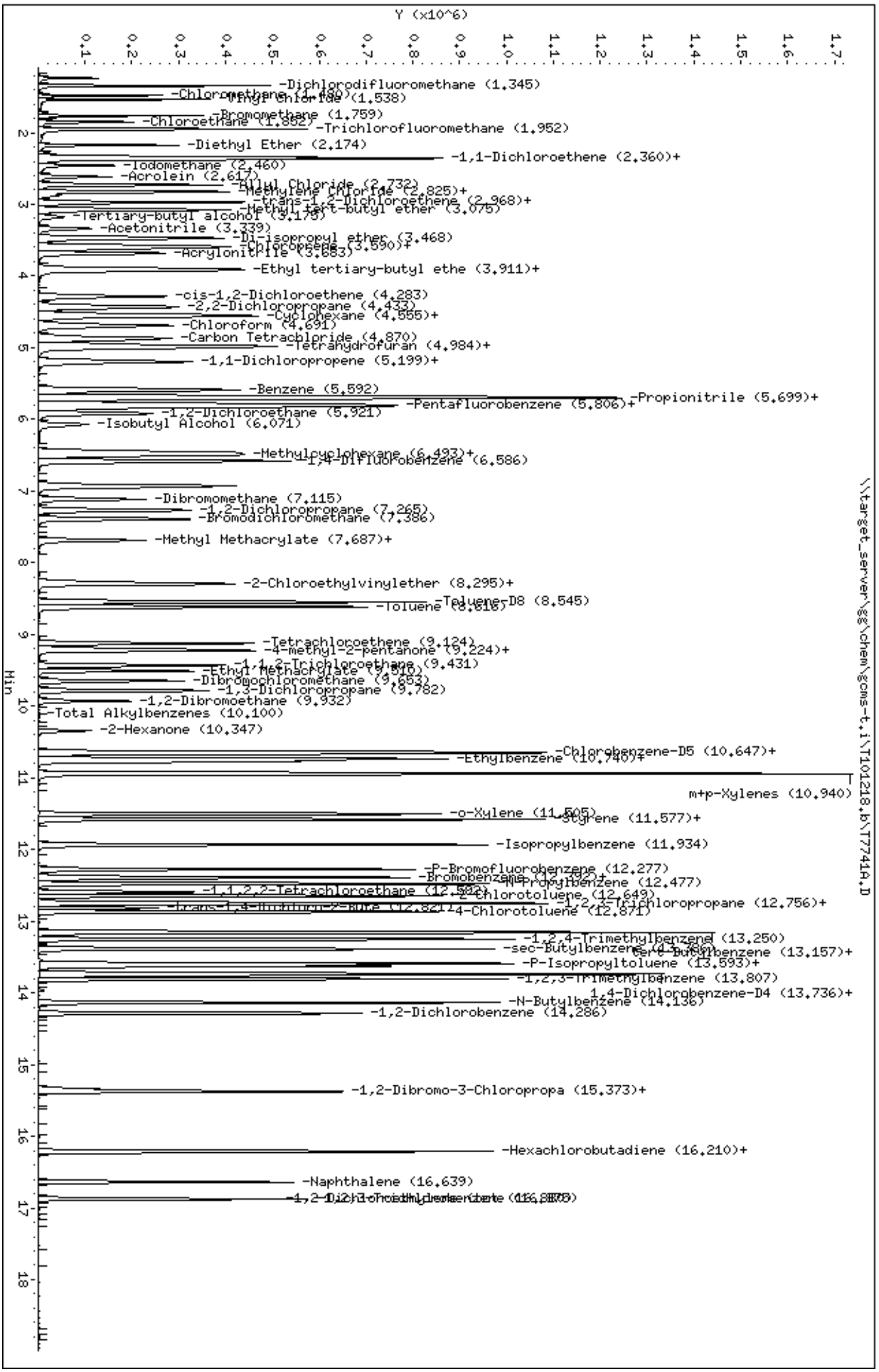
		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	25	Ethyl tertiary-butyl ether	59	3.904	3.904	(0.674)	481233	53.5937	53.6	
	26	Vinyl Acetate	43	3.925	3.926	(0.596)	324582	54.1505	54.2	
	27	cis-1,2-Dichloroethene	96	4.290	4.283	(0.741)	153491	49.9405	49.9	
	28	2,2-Dichloropropane	77	4.433	4.426	(0.765)	342543	54.0966	54.1	
	29	Cyclohexane	56	4.547	4.548	(0.785)	216802	57.3442	57.3	
	30	Bromochloromethane	128	4.569	4.562	(0.789)	71996	55.7281	55.7	
	31	Chloroform	83	4.690	4.691	(0.810)	372683	51.1860	51.2	
	32	Carbon Tetrachloride	117	4.869	4.869	(0.739)	325992	56.5126	56.5	
	33	Tetrahydrofuran	42	4.941	4.934	(0.853)	32128	49.3382	49.3	
$	34	Dibromofluoromethane	113	4.976	4.977	(0.859)	217797	48.3919	48.4	
	35	1,1,1-Trichloroethane	97	4.991	4.984	(0.862)	364572	52.2645	52.3	
	36	1,1-Dichloropropene	75	5.191	5.191	(0.788)	246634	53.7328	53.7	
	37	2-Butanone	43	5.212	5.206	(0.900)	57978	53.1400	53.1	
	38	Benzene	78	5.591	5.585	(0.849)	561509	51.9012	51.9	
	39	Propionitrile	54	5.670	5.670	(0.979)	168497	484.043	484	
	40	Methacrylonitrile	41	5.699	5.692	(0.984)	858234	522.507	522	
*	41	Pentafluorobenzene	168	5.791	5.785	(1.000)	350025	50.0000		
$	42	1,2-Dichloroethane-D4	65	5.813	5.813	(1.004)	324892	49.9206	49.9	
	43	Tertiary-amyl methyl ether	73	5.820	5.820	(1.005)	433015	51.2939	51.3	
	44	1,2-Dichloroethane	62	5.920	5.921	(0.899)	323721	50.2087	50.2	
	45	Isobutyl Alcohol	43	6.070	6.071	(1.048)	89144	975.778	976	
	46	Methylcyclohexane	83	6.464	6.457	(1.116)	241846	50.6694	50.7	
	47	Trichloroethene	95	6.499	6.493	(0.987)	175454	53.3257	53.3	
*	48	1,4-Difluorobenzene	114	6.585	6.586	(1.000)	528705	50.0000		
	49	Dibromomethane	93	7.114	7.107	(1.080)	119209	52.5250	52.5	
	50	1,2-Dichloropropane	63	7.264	7.265	(1.103)	148714	51.0920	51.1	
	51	Bromodichloromethane	83	7.386	7.386	(1.122)	298656	56.4644	56.5	
	52	Methyl Methacrylate	41	7.686	7.687	(1.167)	128864	48.8424	48.8	
	53	1,4-Dioxane	88	7.701	7.694	(1.169)	24066	717.472	717(R)	
	54	2-Chloroethylvinylether	63	8.265	8.259	(1.255)	75685	45.0467	45.0	
	55	cis-1,3-dichloropropene	75	8.294	8.294	(1.259)	290244	53.3621	53.4	
$	56	Toluene-D8	98	8.544	8.545	(1.297)	655440	50.3609	50.4	
	57	Toluene	92	8.616	8.616	(1.308)	348534	52.7826	52.8	
	58	Tetrachloroethene	164	9.123	9.124	(0.858)	117734	53.2654	53.3	
	59	4-methyl-2-pentanone	43	9.195	9.195	(1.396)	120464	53.5647	53.6	
	60	trans-1,3-Dichloropropene	75	9.224	9.224	(1.401)	297760	53.8952	53.9	
	61	1,1,2-Trichloroethane	83	9.431	9.431	(1.432)	122404	52.6103	52.6	
	62	Ethyl Methacrylate	69	9.510	9.510	(1.444)	190608	48.7681	48.8	
	63	Dibromochloromethane	129	9.645	9.653	(0.907)	202069	54.6933	54.7	
	64	1,3-Dichloropropane	76	9.781	9.789	(0.919)	251149	51.4929	51.5	
	65	1,2-Dibromoethane	107	9.931	9.932	(1.508)	153324	50.4112	50.4	
M	66	Total Alkylbenzenes	100				4508469	370.401	370	
	67	2-Hexanone	43	10.346	10.347	(0.972)	80927	47.0573	47.0	
*	68	Chlorobenzene-D5	117	10.639	10.640	(1.000)	475942	50.0000		
	69	Chlorobenzene	112	10.661	10.661	(1.002)	374704	51.1298	51.1	
	70	Ethylbenzene	91	10.732	10.733	(1.009)	732055	54.9725	55.0	
	71	1,1,1,2-Tetrachloroethane	131	10.768	10.768	(1.012)	174480	52.8842	52.9	
	72	m+p-Xylenes	91	10.940	10.940	(1.028)	1149248	113.810	114	
	73	o-Xylene	91	11.505	11.505	(1.081)	582536	52.7296	52.7	
	74	Styrene	104	11.583	11.576	(1.089)	415939	52.2523	52.2	
	75	Bromoform	173	11.576	11.576	(1.088)	136525	55.7330	55.7	
	76	Isopropylbenzene	105	11.934	11.934	(0.869)	685269	54.6348	54.6	
$	77	P-Bromofluorobenzene	95	12.277	12.277	(1.864)	293068	52.4455	52.4	
	78	Bromobenzene	156	12.384	12.392	(0.902)	170673	48.9068	48.9	

Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7741A.D
Report Date: 14-Oct-2018 19:47

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	79 cis-1,4-Dichloro-2-Butene	53	12.398	12.399	(0.903)	76659	52.1985	52.2	
	80 N-Propylbenzene	91	12.477	12.477	(0.909)	841644	54.2283	54.2	
	81 1,1,2,2-Tetrachloroethane	83	12.591	12.592	(0.917)	183999	50.3530	50.4	
	82 2-Chlorotoluene	91	12.649	12.649	(0.921)	533871	53.3153	53.3	
	83 1,2,3-Trichloropropane	75	12.734	12.735	(0.928)	172414	49.2110	49.2	
	84 1,3,5-Trimethylbenzene	105	12.756	12.756	(0.929)	590909	52.2404	52.2	
	85 trans-1,4-Dichloro-2-Butene	53	12.820	12.821	(0.934)	62656	53.6590	53.6	
	86 4-Chlorotoluene	91	12.870	12.871	(0.938)	569804	53.8086	53.8	
	87 tert-Butylbenzene	119	13.156	13.157	(0.958)	556289	51.4994	51.5	
	88 Pentachloroethane	165	13.156	13.157	(0.958)	99026	50.1475	50.1	
	89 1,2,4-Trimethylbenzene	105	13.249	13.250	(0.965)	611308	53.3957	53.4	
	90 sec-Butylbenzene	105	13.385	13.385	(0.975)	708901	53.8974	53.9	
	91 P-Isopropyltoluene	119	13.592	13.593	(0.990)	603409	52.3688	52.4	
	92 1,3-Dichlorobenzene	146	13.628	13.629	(0.993)	301845	52.5472	52.5	
*	93 1,4-Dichlorobenzene-D4	152	13.728	13.729	(1.000)	254792	50.0000		
	94 1,4-Dichlorobenzene	146	13.750	13.750	(1.002)	298934	50.3455	50.3	
	95 1,2,3-Trimethylbenzene	105	13.807	13.807	(1.006)	617405	52.8775	52.9	
	96 N-Butylbenzene	91	14.136	14.136	(1.030)	596009	52.7712	52.8	
	97 1,2-Dichlorobenzene	146	14.286	14.286	(1.041)	277348	50.0782	50.1	
	98 1,2-Dibromo-3-Chloropropane	75	15.337	15.337	(1.117)	41222	48.4989	48.5	
	99 1,3,5-Trichlorobenzene	180	15.380	15.380	(1.120)	216974	51.2487	51.2	
	100 Hexachlorobutadiene	225	16.209	16.210	(1.181)	104743	52.0283	52.0	
	101 1,2,4-Trichlorobenzene	180	16.217	16.216	(1.181)	187222	52.0559	52.0	
	102 Naphthalene	128	16.638	16.639	(1.212)	382797	47.2949	47.3	
M	103 1,2-Dichloroethylene (total)	96				299986	94.1002	94.1	
	104 1,2,3-Trichlorobenzene	180	16.874	16.875	(1.229)	179463	48.9522	49.0	
M	105 Xylenes (total)	91				1731784	166.540	166	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.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Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: HG/JR
Column diameter: 0.18
Y (x10^6)
Min
\\target_server\gg\chem\gcms-t.i\T101218.b\T7741A.D
-Dichlorodifluoromethane (1.345)
-Chloromethane (1.480)
Vinyl Chloride (1.538)
-Bromomethane (1.759)
-Chloroethane (1.852)
-Trichlorofluoromethane (1.952)
-Diethyl Ether (2.174)
-1,1-Dichloroethene (2.360)+
-Iodomethane (2.460)
-Acrolein (2.617)
-Allyl Chloride (2.732)
-Methylene Chloride (2.825)+
-trans-1,2-Dichloroethene (2.968)+
-Methyl tert-butyl ether (3.075)
-Tertiary-butyl alcohol (3.176)
-Acetonitrile (3.339)
-Di-isopropyl ether (3.468)
-Chloroprene (3.590)+
-Acrylonitrile (3.683)
-Ethyl tertiary-butyl ethe (3.911)+
-cis-1,2-Dichloroethene (4.283)
-2,2-Dichloropropane (4.433)
-Cyclohexane (4.555)+
-Chloroform (4.691)
-Carbon Tetrachloride (4.870)
-Tetrahydrofuran (4.984)+
-1,1-Dichloropropene (5.199)+
-Benzene (5.592)
-Propionitrile (5.699)+
-Pentafluorobenzene (5.806)+
-1,2-Dichloroethane (5.921)
-Isobutyl Alcohol (6.071)
-Methylcyclohexane (6.493)+
1,4-Difluorobenzene (6.586)
-Dibromomethane (7.115)
-1,2-Dichloropropane (7.265)
-Bromodichloromethane (7.386)
-Methyl Methacrylate (7.687)+
-2-Chloroethylvinylether (8.295)+
-Toluene-D8 (8.545)
-Toluene (8.616)
-Tetrachloroethene (9.124)
-4-methyl-2-pentanone (9.224)+
-1,1,2-Trichloroethane (9.431)
-Ethyl Methacrylate (9.516)
-Dibromochloromethane (9.653)
-1,3-Dichloropropane (9.782)
-1,2-Dibromoethane (9.932)
-Total Alkylbenzenes (10.100)
-2-Hexanone (10.347)
-Chlorobenzene-D5 (10.647)+
-Ethylbenzene (10.740)+
m+p-Xylenes (10.940)
-o-Xylene (11.505)
-Styrene (11.577)+
-Isopropylbenzene (11.934)
-P-Bromofluorobenzene (12.277)
-Bromobenzene (12.400)+
-N-Propylbenzene (12.477)
-1,1,2,2-Tetrachloroethane (12.542)
-2-Chlorotoluene (12.649)
-1,2,3-Trichloropropane (12.756)+
-trans-1,4-Dichloro-2-Bute (12.821)
4-Chlorotoluene (12.871)
-1,2,4-Trimethylbenzene (13.250)
-sec-Butylbenzene (13.400)
-tert-Butylbenzene (13.157)+
-P-Isopropyltoluene (13.593)+
-1,2,3-Trimethylbenzene (13.807)
1,4-Dichlorobenzene-D4 (13.736)+
-N-Butylbenzene (14.136)
-1,2-Dichlorobenzene (14.286)
-1,2-Dibromo-3-Chloropropa (15.373)+
-Hexachlorobutadiene (16.210)+
-Naphthalene (16.639)
-1,2,4-Trichlorobenzene (16.8

Data File: \\target_server\gg\chem\gcms-t.i\T101118B.b\T7719.D
Report Date: 15-Oct-2018 12:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T101118B.b\T7719.D
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Inj Date : 11-OCT-2018 09:58
Operator : HG/JR   Inst ID: gcms-t.i
Smp Info : WG238351-4
Misc Info :
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T101118B.b\T8A05(56)D.m
Meth Date : 12-Oct-2018 06:13 tcote   Quant Type: ISTD
Cal Date : 11-OCT-2018 09:58   Cal File: T7719.D
Als bottle: 1   Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: D2400TARGET-1

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

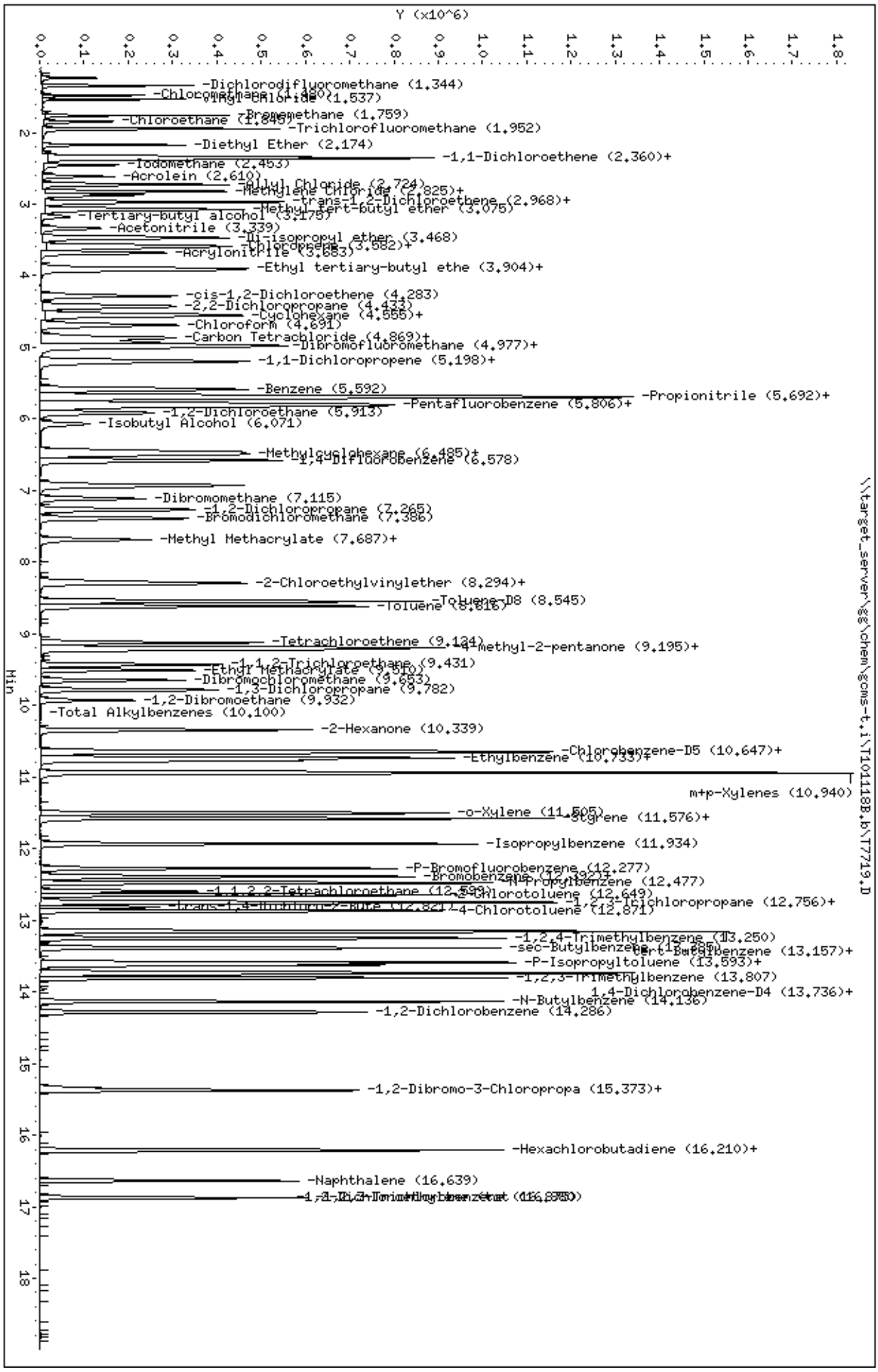
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.344	1.344	(0.232)	183129	50.0000	50.0	
2	Chloromethane	50	1.480	1.480	(0.256)	156020	50.0000	50.0	
3	Vinyl chloride	62	1.537	1.537	(0.266)	186825	50.0000	50.0	
4	Bromomethane	94	1.759	1.759	(0.304)	129143	50.0000	50.0	
5	Chloroethane	64	1.852	1.852	(0.320)	111739	50.0000	50.0	
6	Trichlorofluoromethane	101	1.952	1.952	(0.337)	382713	50.0000	50.0	
7	Diethyl Ether	59	2.173	2.174	(0.376)	145482	50.0000	50.0	
8	1,1-Dichloroethene	96	2.331	2.331	(0.403)	178683	50.0000	50.0	
9	Freon-113	151	2.359	2.360	(0.408)	152224	50.0000	50.0	
10	Carbon Disulfide	76	2.359	2.360	(0.408)	444969	50.0000	50.0	
11	Iodomethane	142	2.452	2.453	(0.424)	167848	50.0000	50.0	
12	Acrolein	56	2.617	2.617	(0.452)	131303	250.000	250	
13	Allyl Chloride	41	2.724	2.724	(0.471)	236803	50.0000	50.0	
14	Methylene Chloride	84	2.824	2.825	(0.488)	204921	50.0000	50.0	
15	Acetone	43	2.874	2.875	(0.497)	289302	250.000	250	
16	trans-1,2-Dichloroethene	96	2.967	2.968	(0.513)	181998	50.0000	50.0	
17	Methyl Acetate	43	2.988	2.989	(0.517)	134804	50.0000	50.0	
18	Methyl tert-butyl ether	73	3.074	3.075	(0.532)	561782	50.0000	50.0	
19	Tertiary-butyl alcohol	59	3.182	3.182	(0.550)	88476	250.000	250	
20	Acetonitrile	41	3.339	3.339	(0.577)	170277	500.000	500	
21	Di-isopropyl ether	45	3.468	3.468	(0.600)	456565	50.0000	50.0	
22	Chloroprene	53	3.582	3.582	(0.619)	274432	50.0000	50.0	
23	1,1-Dichloroethane	63	3.611	3.611	(0.624)	332847	50.0000	50.0	

Data File: \\target_server\gg\chem\gcms-t.i\T101118B.b\T7719.D
Report Date: 15-Oct-2018 12:46

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	24	Acrylonitrile	52	3.682	3.683	(0.637)	219888	250.000	250	
	25	Ethyl tertiary-butyl ether	59	3.904	3.904	(0.675)	517870	50.0000	50.0	
	26	Vinyl Acetate	43	3.925	3.926	(0.596)	355613	50.0000	50.0	
	27	cis-1,2-Dichloroethene	96	4.283	4.283	(0.740)	167252	50.0000	50.0	
	28	2,2-Dichloropropane	77	4.426	4.426	(0.765)	357336	50.0000	50.0	
	29	Cyclohexane	56	4.547	4.548	(0.786)	207101	50.0000	50.0	
	30	Bromochloromethane	128	4.562	4.562	(0.789)	70986	50.0000	50.0	
	31	Chloroform	83	4.690	4.691	(0.811)	401827	50.0000	50.0	
	32	Carbon Tetrachloride	117	4.869	4.869	(0.739)	349094	50.0000	50.0	
	33	Tetrahydrofuran	42	4.933	4.934	(0.853)	174632	250.000	250	
$	34	Dibromofluoromethane	113	4.976	4.977	(0.860)	232070	50.0000	50.0	
	35	1,1,1-Trichloroethane	97	4.983	4.984	(0.862)	396346	50.0000	50.0	
	36	1,1-Dichloropropene	75	5.191	5.191	(0.788)	263847	50.0000	50.0	
	37	2-Butanone	43	5.205	5.206	(0.900)	307889	250.000	250	
	38	Benzene	78	5.584	5.585	(0.848)	620064	50.0000	50.0	
	39	Propionitrile	54	5.670	5.670	(0.980)	185257	500.000	500	
	40	Methacrylonitrile	41	5.691	5.692	(0.984)	921021	500.000	500	
*	41	Pentafluorobenzene	168	5.784	5.785	(1.000)	362381	50.0000		
$	42	1,2-Dichloroethane-D4	65	5.813	5.813	(1.005)	339122	50.0000	50.0	
	43	Tertiary-amyl methyl ether	73	5.820	5.820	(1.006)	464071	50.0000	50.0	
	44	1,2-Dichloroethane	62	5.920	5.921	(0.899)	336991	50.0000	50.0	
	45	Isobutyl Alcohol	43	6.070	6.071	(1.049)	98187	1000.00	1000	
	46	Methylcyclohexane	83	6.456	6.457	(1.116)	265291	50.0000	50.0	
	47	Trichloroethene	95	6.492	6.493	(0.986)	191461	50.0000	50.0	
*	48	1,4-Difluorobenzene	114	6.585	6.586	(1.000)	557592	50.0000		
	49	Dibromomethane	93	7.107	7.107	(1.079)	127850	50.0000	50.0	
	50	1,2-Dichloropropane	63	7.264	7.265	(1.103)	159957	50.0000	50.0	
	51	Bromodichloromethane	83	7.386	7.386	(1.122)	303874	50.0000	50.0	
	52	Methyl Methacrylate	41	7.686	7.687	(1.167)	137638	50.0000	50.0	
	53	1,4-Dioxane	88	7.693	7.694	(1.168)	28228	1000.00	1000	
	54	2-Chloroethylvinylether	63	8.258	8.259	(1.254)	90714	50.0000	50.0	
	55	cis-1,3-dichloropropene	75	8.294	8.294	(1.259)	323848	50.0000	50.0	
$	56	Toluene-D8	98	8.544	8.545	(1.297)	684799	50.0000	50.0	
	57	Toluene	92	8.616	8.616	(1.308)	374097	50.0000	50.0	
	58	Tetrachloroethene	164	9.123	9.124	(0.858)	130444	50.0000	50.0	
	59	4-methyl-2-pentanone	43	9.195	9.195	(1.396)	664779	250.000	250	
	60	trans-1,3-Dichloropropene	75	9.223	9.224	(1.401)	319360	50.0000	50.0	
	61	1,1,2-Trichloroethane	83	9.431	9.431	(1.432)	132350	50.0000	50.0	
	62	Ethyl Methacrylate	69	9.509	9.510	(1.444)	206154	50.0000	50.0	
	63	Dibromochloromethane	129	9.652	9.653	(0.907)	210061	50.0000	50.0	
	64	1,3-Dichloropropane	76	9.788	9.789	(0.920)	278124	50.0000	50.0	
	65	1,2-Dibromoethane	107	9.931	9.932	(1.508)	169990	50.0000	50.0	
M	66	Total Alkylbenzenes	100				4764623	50.0000	350	
	67	2-Hexanone	43	10.346	10.347	(0.972)	465000	250.000	250	
*	68	Chlorobenzene-D5	117	10.639	10.640	(1.000)	502579	50.0000		
	69	Chlorobenzene	112	10.661	10.661	(1.002)	410508	50.0000	50.0	
	70	Ethylbenzene	91	10.732	10.733	(1.009)	775144	50.0000	50.0	
	71	1,1,1,2-Tetrachloroethane	131	10.768	10.768	(1.012)	182452	50.0000	50.0	
	72	m+p-Xylenes	91	10.940	10.940	(1.028)	1229720	100.000	100	
	73	o-Xylene	91	11.504	11.505	(1.081)	632963	50.0000	50.0	
	74	Styrene	104	11.576	11.576	(1.088)	440922	50.0000	50.0	
	75	Bromoform	173	11.576	11.576	(1.088)	142493	50.0000	50.0	
	76	Isopropylbenzene	105	11.933	11.934	(0.869)	703048	50.0000	50.0	
$	77	P-Bromofluorobenzene	95	12.277	12.277	(1.864)	298534	50.0000	50.0	

Data File: \\target_server\gg\chem\gcms-t.i\T101118B.b\T7719.D
Report Date: 15-Oct-2018 12:46

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	78 Bromobenzene	156	12.391	12.392	(0.903)	191291	50.0000	50.0	
	79 cis-1,4-Dichloro-2-Butene	53	12.398	12.399	(0.903)	81047	50.0000	50.0	
	80 N-Propylbenzene	91	12.477	12.477	(0.909)	898830	50.0000	50.0	
	81 1,1,2,2-Tetrachloroethane	83	12.591	12.592	(0.917)	194989	50.0000	50.0	
	82 2-Chlorotoluene	91	12.648	12.649	(0.921)	562569	50.0000	50.0	
	83 1,2,3-Trichloropropane	75	12.734	12.735	(0.928)	187779	50.0000	50.0	
	84 1,3,5-Trimethylbenzene	105	12.756	12.756	(0.929)	636386	50.0000	50.0	
	85 trans-1,4-Dichloro-2-Butene	53	12.820	12.821	(0.934)	66362	50.0000	50.0	
	86 4-Chlorotoluene	91	12.870	12.871	(0.938)	605841	50.0000	50.0	
	87 tert-Butylbenzene	119	13.156	13.157	(0.958)	588979	50.0000	50.0	
	88 Pentachloroethane	165	13.156	13.157	(0.958)	109803	50.0000	50.0	
	89 1,2,4-Trimethylbenzene	105	13.249	13.250	(0.965)	636153	50.0000	50.0	
	90 sec-Butylbenzene	105	13.385	13.385	(0.975)	740996	50.0000	50.0	
	91 P-Isopropyltoluene	119	13.592	13.593	(0.990)	632595	50.0000	50.0	
	92 1,3-Dichlorobenzene	146	13.628	13.629	(0.993)	311846	50.0000	50.0	
*	93 1,4-Dichlorobenzene-D4	152	13.728	13.729	(1.000)	258727	50.0000		
	94 1,4-Dichlorobenzene	146	13.750	13.750	(1.002)	317397	50.0000	50.0	
	95 1,2,3-Trimethylbenzene	105	13.807	13.807	(1.006)	648877	50.0000	50.0	
	96 N-Butylbenzene	91	14.136	14.136	(1.030)	630684	50.0000	50.0	
	97 1,2-Dichlorobenzene	146	14.286	14.286	(1.041)	303741	50.0000	50.0	
	98 1,2-Dibromo-3-Chloropropane	75	15.337	15.337	(1.117)	44747	50.0000	50.0	
	99 1,3,5-Trichlorobenzene	180	15.380	15.380	(1.120)	234756	50.0000	50.0	
	100 Hexachlorobutadiene	225	16.209	16.210	(1.181)	110414	50.0000	50.0	
	101 1,2,4-Trichlorobenzene	180	16.216	16.216	(1.181)	206654	50.0000	50.0	
	102 Naphthalene	128	16.638	16.639	(1.212)	423811	50.0000	50.0	
M	103 1,2-Dichloroethylene (total)	96				349250	50.0000	100	
	104 1,2,3-Trichlorobenzene	180	16.874	16.875	(1.229)	190515	50.0000	50.0	
M	105 Xylenes (total)	91				1862683	150.000	150	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Instrument: gcms-t.i
Operator: HG/JR
Column diameter: 0.18
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Min
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-Dichlorodifluoromethane (1.344)
-Chloromethane (1.460)
Vinyl Chloride (1.537)
-Bromomethane (1.759)
-Chloroethane (1.845)
-Trichlorofluoromethane (1.952)
-Diethyl Ether (2.174)
-1,1-Dichloroethene (2.360)+
-Iodomethane (2.453)
-Acrolein (2.610)
-Allyl Chloride (2.724)
-Methylene Chloride (2.825)+
-trans-1,2-Dichloroethene (2.968)+
-Methyl tert-butyl ether (3.075)
-Tertiary-butyl alcohol (3.178)
-Acetonitrile (3.339)
-Di-isopropyl ether (3.468)
-Chloroprene (3.582)+
-Acrylonitrile (3.683)
-Ethyl tertiary-butyl ethe (3.904)+
-cis-1,2-Dichloroethene (4.283)
-2,2-Dichloropropane (4.433)
-Cyclohexane (4.555)+
-Chloroform (4.691)
-Carbon Tetrachloride (4.869)+
-Dibromofluoromethane (4.977)+
-1,1-Dichloropropene (5.198)+
-Benzene (5.592)
-Propionitrile (5.692)+
-Pentafluorobenzene (5.806)+
-1,2-Dichloroethane (5.913)
-Isobutyl Alcohol (6.071)
-Methylcyclohexane (6.485)+
-1,4-Difluorobenzene (6.578)
-Dibromomethane (7.115)
-1,2-Dichloropropane (7.265)
-Bromodichloromethane (7.386)
-Methyl Methacrylate (7.687)+
-2-Chloroethylvinylether (8.294)+
-Toluene-D8 (8.545)
-Toluene (8.616)
-Tetrachloroethene (9.124)
-4-methyl-2-pentanone (9.195)+
-1,1,2-Trichloroethane (9.431)
-Ethyl Methacrylate (9.510)
-Dibromochloromethane (9.653)
-1,3-Dichloropropane (9.782)
-1,2-Dibromoethane (9.932)
-Total Alkylbenzenes (10.100)
-2-Hexanone (10.339)
-Chlorobenzene-D5 (10.647)+
-Ethylbenzene (10.733)+
m+p-Xylenes (10.940)
-o-Xylene (11.505)
-Styrene (11.576)+
-Isopropylbenzene (11.934)
-P-Bromofluorobenzene (12.277)
-Bromobenzene (12.392)+
-N-Propylbenzene (12.477)
-1,1,2,2-Tetrachloroethane (12.595)
-2-Chlorotoluene (12.649)
-1,2,3-Trichloropropane (12.756)+
-trans-1,4-Dichloro-2-Bute (12.821)+
-4-Chlorotoluene (12.871)
-1,2,4-Trimethylbenzene (13.250)
-sec-Butylbenzene (13.286)
-tert-Butylbenzene (13.157)+
-P-Isopropyltoluene (13.593)+
-1,2,3-Trimethylbenzene (13.807)
1,4-Dichlorobenzene-D4 (13.736)+
-N-Butylbenzene (14.136)
-1,2-Dichlorobenzene (14.286)
-1,2-Dibromo-3-Chloropropa (15.373)+
-Hexachlorobutadiene (16.210)+
-Naphthalene (16.639)
-1,2,3-Trichlorobenzene (16.895)

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Report Date: 15-Oct-2018 12:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T101118B.b\T7720.D
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Inj Date : 11-OCT-2018 10:28
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Smp Info : WG238351-3
Misc Info :
Comment : SW846 5030
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Cal Date : 11-OCT-2018 10:28 Cal File: T7720.D
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Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: D2400TARGET-1

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.344	1.344	(0.232)	74798	20.0000	20.2	
2	Chloromethane	50	1.480	1.480	(0.256)	64051	20.0000	20.3	
3	Vinyl chloride	62	1.537	1.537	(0.265)	81017	20.0000	20.8	
4	Bromomethane	94	1.759	1.759	(0.304)	64190	20.0000	23.3	
5	Chloroethane	64	1.852	1.852	(0.320)	46394	20.0000	20.4	
6	Trichlorofluoromethane	101	1.952	1.952	(0.337)	159429	20.0000	20.4	
7	Diethyl Ether	59	2.173	2.174	(0.375)	58311	20.0000	20.1	
8	1,1-Dichloroethene	96	2.338	2.331	(0.404)	75765	20.0000	20.6	
9	Freon-113	151	2.359	2.360	(0.407)	60885	20.0000	20.0	
10	Carbon Disulfide	76	2.367	2.360	(0.409)	194249	20.0000	20.9	
11	Iodomethane	142	2.452	2.453	(0.423)	51207	20.0000	17.3	
12	Acrolein	56	2.617	2.617	(0.452)	51333	100.000	99.1	
13	Allyl Chloride	41	2.724	2.724	(0.470)	98872	20.0000	20.5	
14	Methylene Chloride	84	2.824	2.825	(0.488)	83319	20.0000	20.2	
15	Acetone	43	2.874	2.875	(0.496)	109485	100.000	97.4	
16	trans-1,2-Dichloroethene	96	2.967	2.968	(0.512)	70305	20.0000	19.7	
17	Methyl Acetate	43	2.989	2.989	(0.516)	48951	20.0000	19.1	
18	Methyl tert-butyl ether	73	3.074	3.075	(0.531)	200176	20.0000	18.9	
19	Tertiary-butyl alcohol	59	3.175	3.182	(0.548)	33729	100.000	97.8	
20	Acetonitrile	41	3.339	3.339	(0.577)	60801	200.000	200	
21	Di-isopropyl ether	45	3.475	3.468	(0.600)	185964	20.0000	20.2	
22	Chloroprene	53	3.582	3.582	(0.619)	115433	20.0000	20.5	
23	1,1-Dichloroethane	63	3.611	3.611	(0.623)	141667	20.0000	20.7	

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Report Date: 15-Oct-2018 12:46

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	24	Acrylonitrile	52	3.682	3.683	(0.636)	88411	100.000	100	
	25	Ethyl tertiary-butyl ether	59	3.904	3.904	(0.674)	203525	20.0000	19.9	
	26	Vinyl Acetate	43	3.925	3.926	(0.596)	139236	20.0000	19.6	
	27	cis-1,2-Dichloroethene	96	4.283	4.283	(0.740)	67933	20.0000	20.2	
	28	2,2-Dichloropropane	77	4.433	4.426	(0.765)	146711	20.0000	20.3	
	29	Cyclohexane	56	4.540	4.548	(0.784)	85968	20.0000	20.4	
	30	Bromochloromethane	128	4.569	4.562	(0.789)	30153	20.0000	20.9	
	31	Chloroform	83	4.698	4.691	(0.811)	167007	20.0000	20.4	
	32	Carbon Tetrachloride	117	4.869	4.869	(0.739)	142214	20.0000	20.1	
	33	Tetrahydrofuran	42	4.933	4.934	(0.852)	68075	100.000	100	
$	34	Dibromofluoromethane	113	4.976	4.977	(0.859)	227681	50.0000	49.6	
	35	1,1,1-Trichloroethane	97	4.991	4.984	(0.862)	167550	20.0000	20.6	
	36	1,1-Dichloropropene	75	5.198	5.191	(0.789)	107246	20.0000	20.1	
	37	2-Butanone	43	5.205	5.206	(0.899)	119508	100.000	100	
	38	Benzene	78	5.591	5.585	(0.849)	254909	20.0000	20.2	
	39	Propionitrile	54	5.670	5.670	(0.979)	73925	200.000	200	
	40	Methacrylonitrile	41	5.691	5.692	(0.983)	365100	200.000	200	
*	41	Pentafluorobenzene	168	5.792	5.785	(1.000)	360853	50.0000		
$	42	1,2-Dichloroethane-D4	65	5.813	5.813	(1.004)	327411	50.0000	49.2	
	43	Tertiary-amyl methyl ether	73	5.827	5.820	(1.006)	180556	20.0000	19.8	
	44	1,2-Dichloroethane	62	5.920	5.921	(0.899)	142276	20.0000	20.4	
	45	Isobutyl Alcohol	43	6.070	6.071	(1.048)	44116	400.000	424	
	46	Methylcyclohexane	83	6.464	6.457	(1.116)	104659	20.0000	19.9	
	47	Trichloroethene	95	6.499	6.493	(0.987)	79833	20.0000	20.3	
*	48	1,4-Difluorobenzene	114	6.585	6.586	(1.000)	562938	50.0000		
	49	Dibromomethane	93	7.114	7.107	(1.080)	50646	20.0000	19.8	
	50	1,2-Dichloropropane	63	7.264	7.265	(1.103)	66014	20.0000	20.2	
	51	Bromodichloromethane	83	7.386	7.386	(1.122)	120597	20.0000	19.8	
	52	Methyl Methacrylate	41	7.686	7.687	(1.167)	51294	20.0000	19.0	
	53	1,4-Dioxane	88	7.701	7.694	(1.169)	16034	400.000	468	
	54	2-Chloroethylvinylether	63	8.265	8.259	(1.255)	32043	20.0000	18.4	
	55	cis-1,3-dichloropropene	75	8.294	8.294	(1.259)	128614	20.0000	19.8	
$	56	Toluene-D8	98	8.544	8.545	(1.297)	669836	50.0000	49.2	
	57	Toluene	92	8.616	8.616	(1.308)	153418	20.0000	20.2	
	58	Tetrachloroethene	164	9.124	9.124	(0.858)	53419	20.0000	20.2	
	59	4-methyl-2-pentanone	43	9.195	9.195	(1.396)	257287	100.000	100	
	60	trans-1,3-Dichloropropene	75	9.224	9.224	(1.401)	123885	20.0000	19.6	
	61	1,1,2-Trichloroethane	83	9.431	9.431	(1.432)	51950	20.0000	19.7	
	62	Ethyl Methacrylate	69	9.510	9.510	(1.444)	77453	20.0000	19.1	
	63	Dibromochloromethane	129	9.645	9.653	(0.907)	80105	20.0000	19.5	
	64	1,3-Dichloropropane	76	9.781	9.789	(0.919)	110110	20.0000	19.8	
	65	1,2-Dibromoethane	107	9.932	9.932	(1.508)	64763	20.0000	19.4	
M	66	Total Alkylbenzenes	100				1939385	20.0000	142	
	67	2-Hexanone	43	10.346	10.347	(0.972)	182097	100.000	100	
*	68	Chlorobenzene-D5	117	10.639	10.640	(1.000)	504515	50.0000		
	69	Chlorobenzene	112	10.661	10.661	(1.002)	169349	20.0000	20.3	
	70	Ethylbenzene	91	10.732	10.733	(1.009)	322608	20.0000	20.4	
	71	1,1,1,2-Tetrachloroethane	131	10.768	10.768	(1.012)	74127	20.0000	20.1	
	72	m+p-Xylenes	91	10.940	10.940	(1.028)	517667	40.0000	40.9	
	73	o-Xylene	91	11.505	11.505	(1.081)	246752	20.0000	19.7	
	74	Styrene	104	11.576	11.576	(1.088)	172596	20.0000	19.7	
	75	Bromoform	173	11.583	11.576	(1.089)	55358	20.0000	19.7	
	76	Isopropylbenzene	105	11.934	11.934	(0.869)	273692	20.0000	19.8	
$	77	P-Bromofluorobenzene	95	12.277	12.277	(1.864)	292428	50.0000	49.2	

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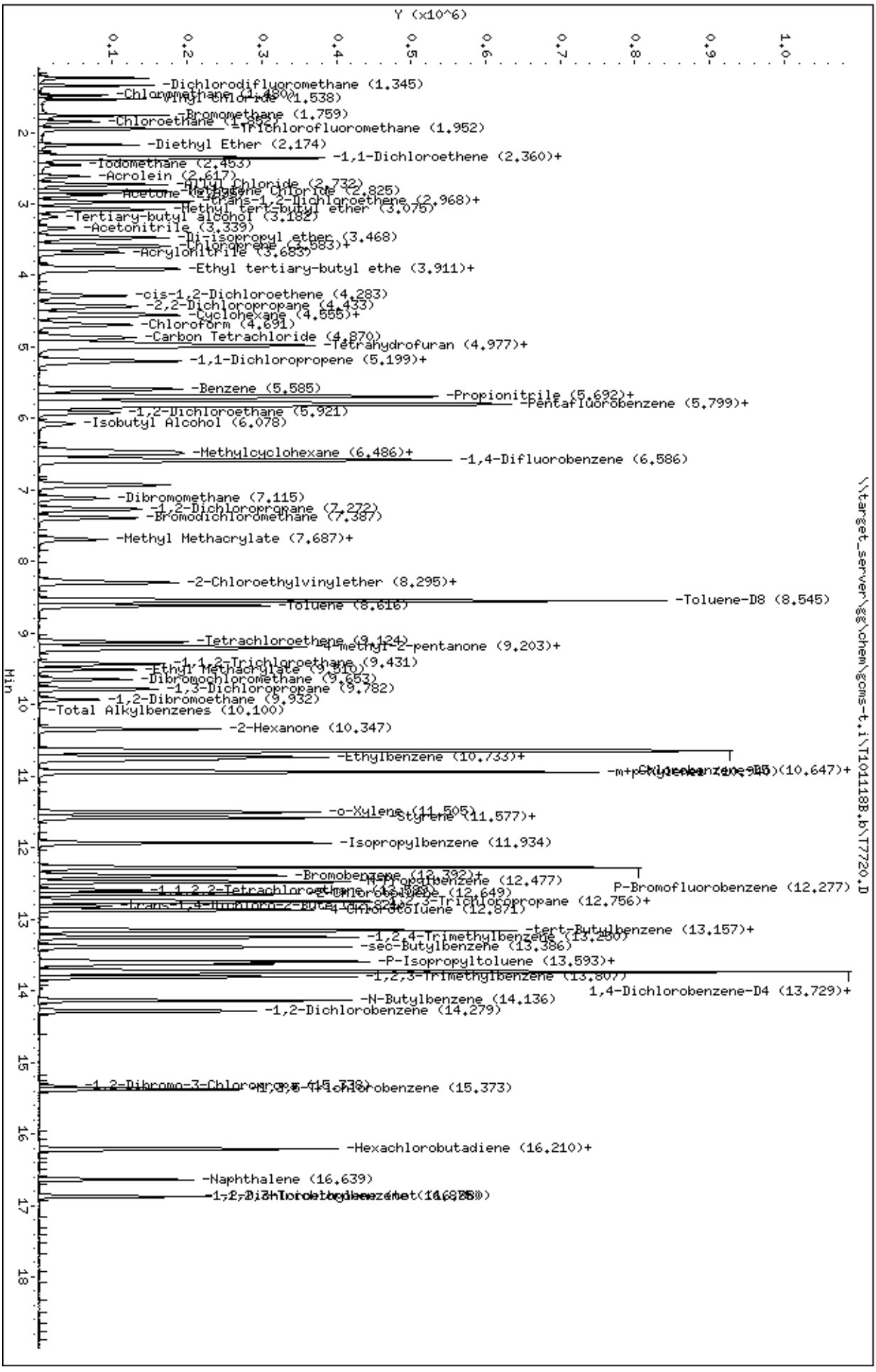
Report Date: 15-Oct-2018 12:46

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	78 Bromobenzene	156	12.384	12.392	(0.902)	76895	20.0000	20.1	
	79 cis-1,4-Dichloro-2-Butene	53	12.398	12.399	(0.903)	30226	20.0000	19.2	
	80 N-Propylbenzene	91	12.477	12.477	(0.909)	370044	20.0000	20.3	
	81 1,1,2,2-Tetrachloroethane	83	12.591	12.592	(0.917)	76399	20.0000	19.8	
	82 2-Chlorotoluene	91	12.649	12.649	(0.921)	230363	20.0000	20.3	
	83 1,2,3-Trichloropropane	75	12.734	12.735	(0.928)	73018	20.0000	19.8	
	84 1,3,5-Trimethylbenzene	105	12.756	12.756	(0.929)	256702	20.0000	20.1	
	85 trans-1,4-Dichloro-2-Butene	53	12.813	12.821	(0.933)	23806	20.0000	18.7	
	86 4-Chlorotoluene	91	12.870	12.871	(0.938)	247652	20.0000	20.3	
	87 tert-Butylbenzene	119	13.156	13.157	(0.958)	242278	20.0000	20.3	
	88 Pentachloroethane	165	13.156	13.157	(0.958)	43659	20.0000	20.0	
	89 1,2,4-Trimethylbenzene	105	13.249	13.250	(0.965)	256485	20.0000	20.2	
	90 sec-Butylbenzene	105	13.385	13.385	(0.975)	302477	20.0000	20.2	
	91 P-Isopropyltoluene	119	13.592	13.593	(0.990)	258474	20.0000	20.3	
	92 1,3-Dichlorobenzene	146	13.628	13.629	(0.993)	126187	20.0000	20.2	
*	93 1,4-Dichlorobenzene-D4	152	13.728	13.729	(1.000)	257563	50.0000		
	94 1,4-Dichlorobenzene	146	13.750	13.750	(1.002)	128982	20.0000	20.2	
	95 1,2,3-Trimethylbenzene	105	13.807	13.807	(1.006)	267646	20.0000	20.4	
	96 N-Butylbenzene	91	14.136	14.136	(1.030)	252925	20.0000	20.1	
	97 1,2-Dichlorobenzene	146	14.286	14.286	(1.041)	121094	20.0000	20.0	
	98 1,2-Dibromo-3-Chloropropane	75	15.337	15.337	(1.117)	16415	20.0000	20.0	
	99 1,3,5-Trichlorobenzene	180	15.380	15.380	(1.120)	90940	20.0000	19.7	
	100 Hexachlorobutadiene	225	16.209	16.210	(1.181)	45550	20.0000	20.4	
	101 1,2,4-Trichlorobenzene	180	16.217	16.216	(1.181)	75507	20.0000	19.1	
	102 Naphthalene	128	16.638	16.639	(1.212)	152202	20.0000	18.7	
M	103 1,2-Dichloroethylene (total)	96				138238	20.0000	39.9	
	104 1,2,3-Trichlorobenzene	180	16.874	16.875	(1.229)	70828	20.0000	19.3	
M	105 Xylenes (total)	91				764419	60.0000	60.6	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Operator: HG/JR
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-Dichlorodifluoromethane (1.345)
-Chloromethane (1.480)
-Vinyl Chloride (1.538)
-Bromomethane (1.759)
-Chloroethane (1.842)
-Trichlorofluoromethane (1.952)
-Diethyl Ether (2.174)
-1,1-Dichloroethene (2.360)+
-Iodomethane (2.453)
-Acrolein (2.617)
-Allyl Chloride (2.732)
-Methylene Chloride (2.825)
Acetone
-trans-1,2-Dichloroethene (2.968)+
-Methyl tert-butyl ether (3.075)
-Tertiary-butyl alcohol (3.182)
-Acetonitrile (3.339)
-Di-isopropyl ether (3.468)
-Chloroprene (3.583)+
-Acrylonitrile (3.683)
-Ethyl tertiary-butyl ethe (3.911)+
-cis-1,2-Dichloroethene (4.283)
-2,2-Dichloropropane (4.433)
-Cyclohexane (4.565)+
-Chloroform (4.691)
-Carbon Tetrachloride (4.870)
-Tetrahydrofuran (4.977)+
-1,1-Dichloropropene (5.199)+
-Benzene (5.585)
-Propionitrile (5.692)+
-Pentafluorobenzene (5.799)+
-1,2-Dichloroethane (5.921)
-Isobutyl Alcohol (6.078)
-Methylcyclohexane (6.486)+
-1,4-Difluorobenzene (6.586)
-Dibromomethane (7.115)
-1,2-Dichloropropane (7.272)
-Bromodichloromethane (7.387)
-Methyl Methacrylate (7.687)+
-2-Chloroethylvinylether (8.295)+
-Toluene-D8 (8.545)
-Toluene (8.616)
-Tetrachloroethene (9.124)
-4-methyl-2-pentanone (9.203)+
-1,1,2-Trichloroethane (9.431)
-Ethyl Methacrylate (9.510)
-Dibromochloromethane (9.653)
-1,3-Dichloropropane (9.782)
-1,2-Dibromoethane (9.932)
-Total Alkylbenzenes (10.100)
-2-Hexanone (10.347)
-Ethylbenzene (10.733)+
-o-Xylene (11.505)
-Styrene (11.577)+
-Isopropylbenzene (11.934)
-Bromobenzene (12.392)+
P-Bromofluorobenzene (12.277)
-trans-1,4-Dichloro-2-Bute
-1,2,3-Trichloropropane (12.756)+
-tert-Butylbenzene (13.157)+
-1,2,4-Trimethylbenzene (13.250)
-sec-Butylbenzene (13.386)
-P-Isopropyltoluene (13.593)+
-1,2,3-Trimethylbenzene (13.807)
1,4-Dichlorobenzene-D4 (13.729)+
-N-Butylbenzene (14.136)
-1,2-Dichlorobenzene (14.279)
-1,2-Dibromo-3-Chloropropa
-1,3,5-Trichlorobenzene (15.373)
-Hexachlorobutadiene (16.210)+
-Naphthalene (16.639)
-1,2,3-Trichlorobenzene (16.835)

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Report Date: 15-Oct-2018 12:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T101118B.b\T7721.D
Lab Smp Id: WG238351-2
Inj Date : 11-OCT-2018 10:58
Operator : HG/JR   Inst ID: gcms-t.i
Smp Info : WG238351-2
Misc Info :
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T101118B.b\T8A05(56)D.m
Meth Date : 12-Oct-2018 06:13 tcote   Quant Type: ISTD
Cal Date : 11-OCT-2018 10:58   Cal File: T7721.D
Als bottle: 3   Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: D2400TARGET-1

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.344	1.344	(0.232)	15903	5.00000	4.9	
2	Chloromethane	50	1.480	1.480	(0.256)	13229	5.00000	4.8	
3	Vinyl chloride	62	1.537	1.537	(0.266)	16452	5.00000	4.8	
4	Bromomethane	94	1.759	1.759	(0.304)	14227	5.00000	3.5	
5	Chloroethane	64	1.852	1.852	(0.320)	10782	5.00000	5.1	
6	Trichlorofluoromethane	101	1.952	1.952	(0.337)	32729	5.00000	4.7	
7	Diethyl Ether	59	2.174	2.174	(0.376)	14411	5.00000	5.1	
8	1,1-Dichloroethene	96	2.338	2.331	(0.404)	13738	5.00000	4.4	
9	Freon-113	151	2.359	2.360	(0.408)	13982	5.00000	5.2	
10	Carbon Disulfide	76	2.359	2.360	(0.408)	36968	5.00000	4.4	
11	Iodomethane	142	2.460	2.453	(0.425)	10177	5.00000	3.9	
12	Acrolein	56	2.617	2.617	(0.452)	14597	25.0000	28.2	
13	Allyl Chloride	41	2.724	2.724	(0.471)	23324	5.00000	5.1	
14	Methylene Chloride	84	2.824	2.825	(0.488)	18135	5.00000	4.3(a)	
15	Acetone	43	2.874	2.875	(0.497)	24959	25.0000	22.9	
16	trans-1,2-Dichloroethene	96	2.967	2.968	(0.513)	13070	5.00000	3.8	
17	Methyl Acetate	43	2.989	2.989	(0.517)	12576	5.00000	5.0	
18	Methyl tert-butyl ether	73	3.074	3.075	(0.532)	39221	5.00000	4.2	
19	Tertiary-butyl alcohol	59	3.182	3.182	(0.550)	8059	25.0000	24.5	
20	Acetonitrile	41	3.339	3.339	(0.577)	16946	50.0000	50.8	
21	Di-isopropyl ether	45	3.468	3.468	(0.600)	42296	5.00000	5.1	
22	Chloroprene	53	3.582	3.582	(0.619)	23700	5.00000	5.0	
23	1,1-Dichloroethane	63	3.611	3.611	(0.624)	28611	5.00000	4.5	

Data File: \\target_server\gg\chem\gcms-t.i\T101118B.b\T7721.D
Report Date: 15-Oct-2018 12:46

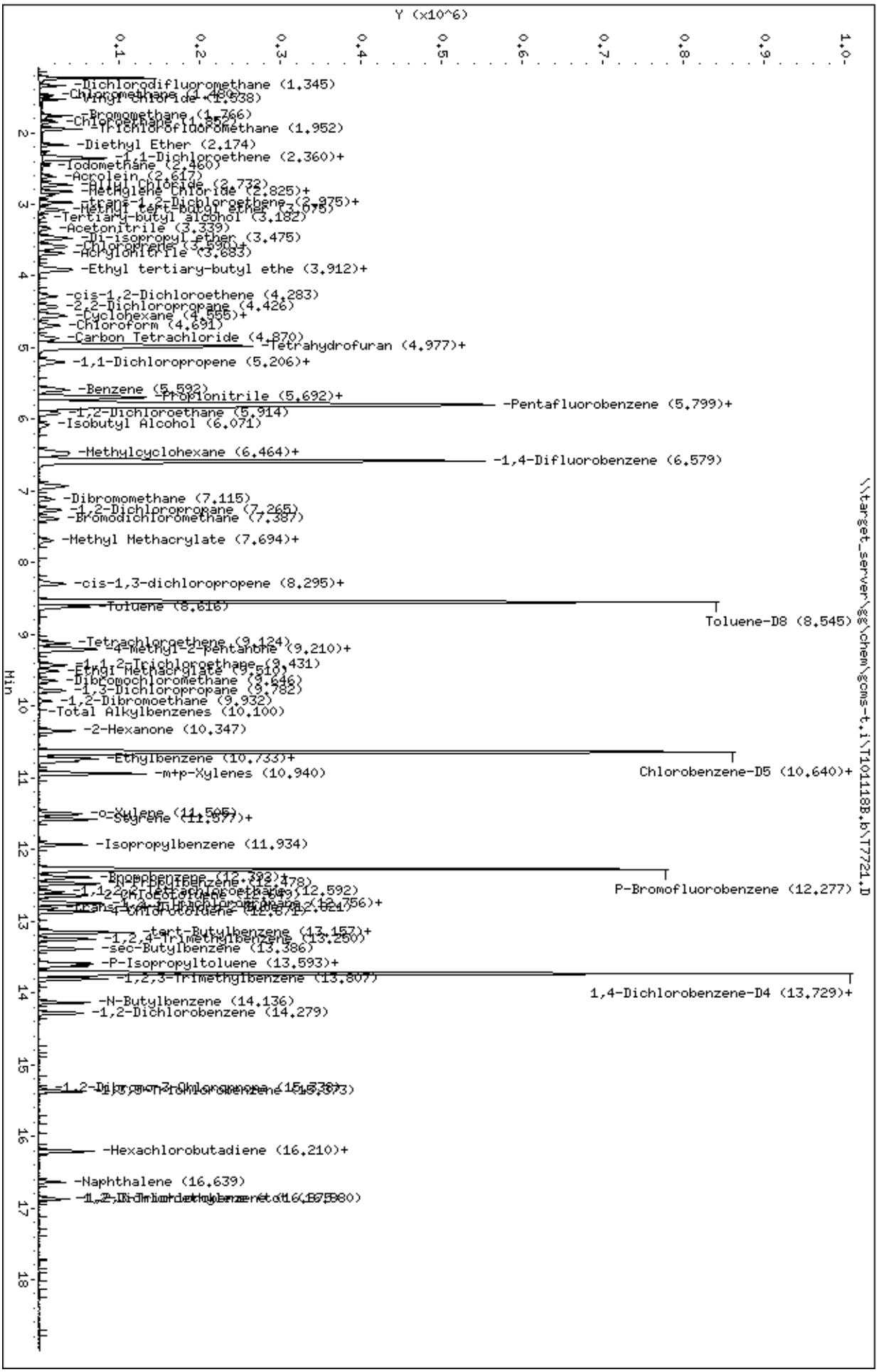
		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	24	Acrylonitrile	52	3.682	3.683	(0.637)	22956	25.0000	27.1	
	25	Ethyl tertiary-butyl ether	59	3.911	3.904	(0.676)	43394	5.00000	4.8	
	26	Vinyl Acetate	43	3.925	3.926	(0.596)	28526	5.00000	3.9	
	27	cis-1,2-Dichloroethene	96	4.283	4.283	(0.740)	12955	5.00000	4.1	
	28	2,2-Dichloropropane	77	4.440	4.426	(0.768)	28136	5.00000	4.3	
	29	Cyclohexane	56	4.555	4.548	(0.787)	13431	5.00000	4.2	
	30	Bromochloromethane	128	4.562	4.562	(0.789)	6236	5.00000	3.3	
	31	Chloroform	83	4.690	4.691	(0.811)	33187	5.00000	4.4	
	32	Carbon Tetrachloride	117	4.862	4.869	(0.738)	26833	5.00000	4.5	
	33	Tetrahydrofuran	42	4.948	4.934	(0.855)	13311	25.0000	21.8	
$	34	Dibromofluoromethane	113	4.984	4.977	(0.862)	231599	50.0000	50.4	
	35	1,1,1-Trichloroethane	97	4.991	4.984	(0.863)	32043	5.00000	4.5	
	36	1,1-Dichloropropene	75	5.198	5.191	(0.789)	17992	5.00000	4.1	
	37	2-Butanone	43	5.205	5.206	(0.900)	26671	25.0000	23.3	
	38	Benzene	78	5.591	5.585	(0.849)	51175	5.00000	4.6	
	39	Propionitrile	54	5.670	5.670	(0.980)	19761	50.0000	55.5	
	40	Methacrylonitrile	41	5.691	5.692	(0.984)	93705	50.0000	51.2	
*	41	Pentafluorobenzene	168	5.784	5.785	(1.000)	357101	50.0000		
$	42	1,2-Dichloroethane-D4	65	5.813	5.813	(1.005)	336211	50.0000	50.0	
	43	Tertiary-amyl methyl ether	73	5.820	5.820	(1.006)	42751	5.00000	5.0	
	44	1,2-Dichloroethane	62	5.913	5.921	(0.898)	31663	5.00000	4.6	
	45	Isobutyl Alcohol	43	6.070	6.071	(1.049)	6480	100.000	72.2	
	46	Methylcyclohexane	83	6.464	6.457	(1.117)	19728	5.00000	4.1	
	47	Trichloroethene	95	6.499	6.493	(0.987)	15724	5.00000	4.6	
*	48	1,4-Difluorobenzene	114	6.585	6.586	(1.000)	548819	50.0000		
	49	Dibromomethane	93	7.107	7.107	(1.079)	11217	5.00000	4.8	
	50	1,2-Dichloropropane	63	7.264	7.265	(1.103)	12537	5.00000	4.6(T)	
	51	Bromodichloromethane	83	7.386	7.386	(1.122)	23753	5.00000	4.3	
	52	Methyl Methacrylate	41	7.686	7.687	(1.167)	10017	5.00000	4.8	
	53	1,4-Dioxane	88	7.701	7.694	(1.169)	5687	100.000	159	
	54	2-Chloroethylvinylether	63	8.258	8.259	(1.254)	4888	5.00000	4.2(H)	
	55	cis-1,3-dichloropropene	75	8.301	8.294	(1.261)	23120	5.00000	3.6	
$	56	Toluene-D8	98	8.544	8.545	(1.297)	674156	50.0000	50.1	
	57	Toluene	92	8.616	8.616	(1.308)	30868	5.00000	4.5	
	58	Tetrachloroethene	164	9.124	9.124	(0.858)	9248	5.00000	4.2	
	59	4-methyl-2-pentanone	43	9.195	9.195	(1.396)	53203	25.0000	22.4	
	60	trans-1,3-Dichloropropene	75	9.224	9.224	(1.401)	24852	5.00000	4.4	
	61	1,1,2-Trichloroethane	83	9.431	9.431	(1.432)	10832	5.00000	4.5	
	62	Ethyl Methacrylate	69	9.510	9.510	(1.444)	15244	5.00000	4.6	
	63	Dibromochloromethane	129	9.646	9.653	(0.907)	16528	5.00000	4.4	
	64	1,3-Dichloropropane	76	9.781	9.789	(0.919)	22080	5.00000	4.5	
	65	1,2-Dibromoethane	107	9.932	9.932	(1.508)	12915	5.00000	4.1(T)	
M	66	Total Alkylbenzenes	100				325158	5.00000	27.3	
	67	2-Hexanone	43	10.346	10.347	(0.972)	33093	25.0000	21.2	
*	68	Chlorobenzene-D5	117	10.639	10.640	(1.000)	481381	50.0000		
	69	Chlorobenzene	112	10.661	10.661	(1.002)	33219	5.00000	4.5	
	70	Ethylbenzene	91	10.732	10.733	(1.009)	60438	5.00000	4.5	
	71	1,1,1,2-Tetrachloroethane	131	10.775	10.768	(1.013)	16307	5.00000	4.9	
	72	m+p-Xylenes	91	10.940	10.940	(1.028)	93248	10.0000	9.1	
	73	o-Xylene	91	11.505	11.505	(1.081)	40632	5.00000	4.1	
	74	Styrene	104	11.583	11.576	(1.089)	29782	5.00000	3.6	
	75	Bromoform	173	11.576	11.576	(1.088)	11119	5.00000	4.5	
	76	Isopropylbenzene	105	11.934	11.934	(0.869)	41237	5.00000	3.8	
$	77	P-Bromofluorobenzene	95	12.277	12.277	(1.864)	288589	50.0000	49.8	

Data File: \\target_server\gg\chem\gcms-t.i\T101118B.b\T7721.D
Report Date: 15-Oct-2018 12:46

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	78 Bromobenzene	156	12.384	12.392	(0.902)	15025	5.00000	4.5	
	79 cis-1,4-Dichloro-2-Butene	53	12.398	12.399	(0.903)	7341	5.00000	4.9	
	80 N-Propylbenzene	91	12.477	12.477	(0.909)	67051	5.00000	4.5	
	81 1,1,2,2-Tetrachloroethane	83	12.591	12.592	(0.917)	16416	5.00000	4.6	
	82 2-Chlorotoluene	91	12.649	12.649	(0.921)	41549	5.00000	4.3	
	83 1,2,3-Trichloropropane	75	12.734	12.735	(0.928)	15996	5.00000	4.7	
	84 1,3,5-Trimethylbenzene	105	12.756	12.756	(0.929)	44248	5.00000	4.4	
	85 trans-1,4-Dichloro-2-Butene	53	12.820	12.821	(0.934)	5715	5.00000	4.9	
	86 4-Chlorotoluene	91	12.870	12.871	(0.938)	45139	5.00000	4.4	
	87 tert-Butylbenzene	119	13.156	13.157	(0.958)	40608	5.00000	4.3	
	88 Pentachloroethane	165	13.163	13.157	(0.959)	9632	5.00000	5.0	
	89 1,2,4-Trimethylbenzene	105	13.249	13.250	(0.965)	42764	5.00000	3.0	
	90 sec-Butylbenzene	105	13.385	13.385	(0.975)	52199	5.00000	4.4	
	91 P-Isopropyltoluene	119	13.592	13.593	(0.990)	38540	5.00000	2.8	
	92 1,3-Dichlorobenzene	146	13.621	13.629	(0.992)	26510	5.00000	4.8	
*	93 1,4-Dichlorobenzene-D4	152	13.728	13.729	(1.000)	245303	50.0000		
	94 1,4-Dichlorobenzene	146	13.743	13.750	(1.001)	25878	5.00000	4.5	
	95 1,2,3-Trimethylbenzene	105	13.807	13.807	(1.006)	56926	5.00000	5.0	
	96 N-Butylbenzene	91	14.136	14.136	(1.030)	39748	5.00000	4.0	
	97 1,2-Dichlorobenzene	146	14.279	14.286	(1.040)	23430	5.00000	4.4	
	98 1,2-Dibromo-3-Chloropropane	75	15.337	15.337	(1.117)	4219	5.00000	5.3	
	99 1,3,5-Trichlorobenzene	180	15.373	15.380	(1.120)	20655	5.00000	5.1	
	100 Hexachlorobutadiene	225	16.209	16.210	(1.181)	8481	5.00000	4.4	
	101 1,2,4-Trichlorobenzene	180	16.217	16.216	(1.181)	13189	5.00000	3.9	
	102 Naphthalene	128	16.638	16.639	(1.212)	24257	5.00000	3.8	
M	103 1,2-Dichloroethylene (total)	96				26025	5.00000	8.0	
	104 1,2,3-Trichlorobenzene	180	16.874	16.875	(1.229)	12738	5.00000	4.1	
M	105 Xylenes (total)	91				133880	15.0000	13.2	

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
H - Operator selected an alternate compound hit.


Data File: \\target_server\gg\chem\gcms-t.i\T101118B.b\T7721.D
Date : 11-OCT-2018 10:58
Client ID:
Sample Info: WG238351-2
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: HG/JR
Column diameter: 0.18
\\target_server\gg\chem\gcms-t.i\T101118B.b\T7721.D
Y (x10^6)
Min
-Dichlorodifluoromethane (1.345)
-Chloromethane (1.496)
-Vinyl Chloride (1.538)
-Bromomethane (1.766)
-Chloroethane (1.858)
-Trichlorofluoromethane (1.952)
-Diethyl Ether (2.174)
-1,1-Dichloroethene (2.360)+
-Iodomethane (2.460)
-Acrolein (2.617)
-Allyl Chloride (2.772)
-Methylene Chloride (2.825)+
-trans-1,2-Dichloroethene (2.975)+
-Methyl tert-butyl ether (3.078)
-Tertiary-butyl alcohol (3.182)
-Acetonitrile (3.339)
-Di-isopropyl ether (3.475)
-Chloroprene (3.590)+
-Acrylonitrile (3.683)
-Ethyl tertiary-butyl ethe (3.912)+
-cis-1,2-Dichloroethene (4.283)
-2,2-Dichloropropane (4.426)
-Cyclohexane (4.555)+
-Chloroform (4.691)
-Carbon Tetrachloride (4.870)
-Tetrahydrofuran (4.977)+
-1,1-Dichloropropene (5.206)+
-Benzene (5.592)
-Propionitrile (5.692)+
-Pentafluorobenzene (5.799)+
-1,2-Dichloroethane (5.914)
-Isobutyl Alcohol (6.071)
-Methylcyclohexane (6.464)+
-1,4-Difluorobenzene (6.579)
-Dibromomethane (7.115)
-1,2-Dichloropropane (7.265)
-Bromodichloromethane (7.387)
-Methyl Methacrylate (7.694)+
-cis-1,3-dichloropropene (8.295)+
-Toluene (8.616)
Toluene-D8 (8.545)
-Tetrachloroethene (9.124)
-4-Methyl-2-pentanone (9.210)+
-1,1,2-Trichloroethane (9.431)
-Ethyl Methacrylate (9.510)
-Dibromochloromethane (9.646)
-1,3-Dichloropropane (9.782)
-1,2-Dibromoethane (9.932)
-Total Alkylbenzenes (10.100)
-2-Hexanone (10.347)
-Ethylbenzene (10.733)+
-m+p-Xylenes (10.940)
Chlorobenzene-D5 (10.640)+
-o-Xylene (11.505)
-Styrene (11.577)+
-Isopropylbenzene (11.934)
-Bromobenzene (12.392)+
-n-Propylbenzene (12.478)
-1,1,2,2-Tetrachloroethane (12.592)
-2-Chlorotoluene (12.649)
-1,3,5-Trimethylbenzene (12.756)+
-trans-1,4-Dichloro-2-butene (12.871)+
-4-Chlorotoluene (12.871)+
P-Bromofluorobenzene (12.277)
-tert-Butylbenzene (13.157)+
-1,2,4-Trimethylbenzene (13.250)
-sec-Butylbenzene (13.386)
-P-Isopropyltoluene (13.593)+
-1,2,3-Trimethylbenzene (13.807)
1,4-Dichlorobenzene-D4 (13.729)+
-N-Butylbenzene (14.136)
-1,2-Dichlorobenzene (14.279)
-1,2-Dibromo-3-Chloropropane (15.338)
-1,2,4-Trichlorobenzene (15.873)
-Hexachlorobutadiene (16.210)+
-Naphthalene (16.639)
-1,2,3-Trichlorobenzene (16.875)

Data File: \\target_server\gg\chem\gcms-t.i\T101118B.b\T7722.D
Report Date: 15-Oct-2018 12:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T101118B.b\T7722.D
Lab Smp Id: WG238351-1
Inj Date : 11-OCT-2018 11:28
Operator : HG/JR   Inst ID: gcms-t.i
Smp Info : WG238351-1
Misc Info :
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T101118B.b\T8A05(56)D.m
Meth Date : 12-Oct-2018 06:13 tcote   Quant Type: ISTD
Cal Date : 11-OCT-2018 11:28   Cal File: T7722.D
Als bottle: 4   Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: D2400TARGET-1

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.344	1.344	(0.232)	2572	1.00000	0.85(a)	
2	Chloromethane	50	1.480	1.480	(0.256)	2471	1.00000	0.95(a)	
3	Vinyl chloride	62	1.537	1.537	(0.266)	2759	1.00000	0.87(a)	
4	Bromomethane	94	1.759	1.759	(0.304)	3833	1.00000	(a)	
5	Chloroethane	64	1.852	1.852	(0.320)	1939	1.00000	0.98(a)	
6	Trichlorofluoromethane	101	1.952	1.952	(0.337)	6286	1.00000	0.96(a)	
7	Diethyl Ether	59	2.180	2.174	(0.377)	2602	1.00000	0.99(a)	
8	1,1-Dichloroethene	96	2.338	2.331	(0.404)	2268	1.00000	0.78(a)	
9	Freon-113	151	2.352	2.360	(0.407)	1848	1.00000	0.73(a)	
10	Carbon Disulfide	76	2.359	2.360	(0.408)	8564	1.00000	1.1	
11	Iodomethane	142	2.459	2.453	(0.425)	1784	1.00000	0.72(a)	
12	Acrolein	56	2.610	2.617	(0.451)	2366	5.00000	4.9(a)	
13	Allyl Chloride	41	2.724	2.724	(0.471)	4229	1.00000	0.99(a)	
14	Methylene Chloride	84	2.824	2.825	(0.488)	5186	1.00000	1.3(a)	
15	Acetone	43	2.874	2.875	(0.497)	5305	5.00000	5.2	
16	trans-1,2-Dichloroethene	96	2.967	2.968	(0.513)	3691	1.00000	1.2	
17	Methyl Acetate	43	2.988	2.989	(0.517)	2383	1.00000	1.0	
18	Methyl tert-butyl ether	73	3.067	3.075	(0.530)	8606	1.00000	0.98(a)	
19	Tertiary-butyl alcohol	59	3.182	3.182	(0.550)	1776	5.00000	5.8	
20	Acetonitrile	41	3.339	3.339	(0.577)	3064	10.0000	18.0(a)	
21	Di-isopropyl ether	45	3.475	3.468	(0.601)	5935	1.00000	0.77(a)	
22	Chloroprene	53	3.582	3.582	(0.619)	2754	1.00000	0.62(a)	
23	1,1-Dichloroethane	63	3.611	3.611	(0.624)	6251	1.00000	1.0	

Data File: \\target_server\gg\chem\gcms-t.i\T101118B.b\T7722.D
Report Date: 15-Oct-2018 12:46

TTC

2:07 pm, Nov 05, 2018

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	24 Acrylonitrile	52	3.682	3.683	(0.637)	3608	5.00000	4.6(a)	
	25 Ethyl tertiary-butyl ether	59	3.918	3.904	(0.677)	6288	1.00000	0.74(a)	
	26 Vinyl Acetate	43	3.925	3.926	(0.596)	4600	1.00000	0.26(Ta)	
	27 cis-1,2-Dichloroethene	96	4.276	4.283	(0.739)	3139	1.00000	1.1	
	28 2,2-Dichloropropane	77	4.433	4.426	(0.766)	5718	1.00000	0.94(a)	
	29 Cyclohexane	56	4.533	4.548	(0.784)	1278	1.00000	0.42(Ta)	
	30 Bromochloromethane	128	4.562	4.562	(0.789)	1096	1.00000	(a)	
	31 Chloroform	83	4.690	4.691	(0.811)	6806	1.00000	0.98(a)	
	32 Carbon Tetrachloride	117	4.862	4.869	(0.738)	4312	1.00000	0.76(a)	
	33 Tetrahydrofuran	42	4.962	4.934	(0.858)	1750	5.00000	5.5(M)	M9
$	34 Dibromofluoromethane	113	4.976	4.977	(0.860)	222415	50.0000	51.8	
	35 1,1,1-Trichloroethane	97	4.991	4.984	(0.863)	5797	1.00000	0.87(a)	
	36 1,1-Dichloropropene	75	5.184	5.191	(0.787)	3185	1.00000	0.76(aM)	M6
	37 2-Butanone	43	5.219	5.206	(0.902)	4352	5.00000	5.9	
	38 Benzene	78	5.591	5.585	(0.849)	9592	1.00000	0.90(a)	
	39 Propionitrile	54	5.670	5.670	(0.980)	2967	10.0000	8.9(a)	
	40 Methacrylonitrile	41	5.698	5.692	(0.985)	12235	10.0000	9.5(a)	
*	41 Pentafluorobenzene	168	5.784	5.785	(1.000)	333692	50.0000		
$	42 1,2-Dichloroethane-D4	65	5.813	5.813	(1.005)	335121	50.0000	53.3	
	43 Tertiary-amyl methyl ether	73	5.813	5.820	(1.005)	7066	1.00000	0.88(Ta)	
	44 1,2-Dichloroethane	62	5.920	5.921	(0.899)	7490	1.00000	1.2(TM)	M10
	45 Isobutyl Alcohol	43	6.099	6.071	(1.054)	1682	20.0000	20.0(TM)	M9
	46 Methylcyclohexane	83	6.463	6.457	(1.117)	1578	1.00000	0.58(aM)	M6
	47 Trichloroethene	95	6.499	6.493	(0.987)	2731	1.00000	0.84(a)	
*	48 1,4-Difluorobenzene	114	6.585	6.586	(1.000)	521149	50.0000		
	49 Dibromomethane	93	7.107	7.107	(1.079)	1972	1.00000	0.89(aM)	M9
	50 1,2-Dichloropropane	63	7.264	7.265	(1.103)	1745	1.00000	0.67(Ta)	
	51 Bromodichloromethane	83	7.386	7.386	(1.122)	4839	1.00000	0.93(Ta)	
	52 Methyl Methacrylate	41	7.679	7.687	(1.166)	1338	1.00000	1.8(M)	M6
	53 1,4-Dioxane	88	7.715	7.694	(1.172)	724	20.0000	21.3(M)	M6
	54 2-Chloroethylvinylether	63	8.258	8.259	(1.254)	950	1.00000	1.8(M)	M6
	55 cis-1,3-dichloropropene	75	8.294	8.294	(1.259)	4274	1.00000	0.46(a)	
$	56 Toluene-D8	98	8.544	8.545	(1.297)	644285	50.0000	50.5	
	57 Toluene	92	8.623	8.616	(1.309)	5885	1.00000	0.91(a)	
	58 Tetrachloroethene	164	9.131	9.124	(0.858)	1824	1.00000	0.86(a)	
	59 4-methyl-2-pentanone	43	9.209	9.195	(1.398)	9072	5.00000	6.5	
	60 trans-1,3-Dichloropropene	75	9.223	9.224	(1.401)	5081	1.00000	0.94(a)	
	61 1,1,2-Trichloroethane	83	9.417	9.431	(1.430)	1993	1.00000	0.88(a)	
	62 Ethyl Methacrylate	69	9.509	9.510	(1.444)	1549	1.00000	1.3	
	63 Dibromochloromethane	129	9.652	9.653	(0.907)	3449	1.00000	0.97(a)	
	64 1,3-Dichloropropane	76	9.781	9.789	(0.919)	4067	1.00000	0.87(a)	
	65 1,2-Dibromoethane	107	9.931	9.932	(1.508)	3242	1.00000	1.1(T)	
M	66 Total Alkylbenzenes	100				50830	1.00000	3.1(a)	
	67 2-Hexanone	43	10.353	10.347	(0.973)	4753	5.00000	6.2	
*	68 Chlorobenzene-D5	117	10.639	10.640	(1.000)	460633	50.0000		
	69 Chlorobenzene	112	10.668	10.661	(1.003)	6989	1.00000	0.98(a)	
	70 Ethylbenzene	91	10.739	10.733	(1.009)	11503	1.00000	0.89(a)	
	71 1,1,1,2-Tetrachloroethane	131	10.768	10.768	(1.012)	2937	1.00000	0.92(a)	
	72 m+p-Xylenes	91	10.940	10.940	(1.028)	15362	2.00000	1.6(a)	
	73 o-Xylene	91	11.504	11.505	(1.081)	6054	1.00000	0.64(a)	
	74 Styrene	104	11.576	11.576	(1.088)	4943	1.00000	0.56(a)	
	75 Bromoform	173	11.583	11.576	(1.089)	1879	1.00000	0.80(aM)	M10
	76 Isopropylbenzene	105	11.933	11.934	(0.869)	6846	1.00000	0.68(a)	
$	77 P-Bromofluorobenzene	95	12.277	12.277	(1.864)	274743	50.0000	49.9	

Data File: \\target_server\gg\chem\gcms-t.i\T101118B.b\T7722.D
Report Date: 15-Oct-2018 12:46

TTC

2:07 pm, Nov 05, 2018

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	78 Bromobenzene	156	12.384	12.392	(0.902)	2973	1.00000	0.94(a)	
	79 cis-1,4-Dichloro-2-Butene	53	12.391	12.399	(0.903)	1088	1.00000	0.80(a)	
	80 N-Propylbenzene	91	12.484	12.477	(0.909)	11607	1.00000	0.82(a)	
	81 1,1,2,2-Tetrachloroethane	83	12.591	12.592	(0.917)	3421	1.00000	1.0(T)	
	82 2-Chlorotoluene	91	12.648	12.649	(0.921)	8206	1.00000	0.90(a)	
	83 1,2,3-Trichloropropane	75	12.734	12.735	(0.928)	3211	1.00000	1.0(M)	M6
	84 1,3,5-Trimethylbenzene	105	12.756	12.756	(0.929)	6475	1.00000	0.68(a)	
	85 trans-1,4-Dichloro-2-Butene	53	12.820	12.821	(0.934)	803	1.00000	0.92(aM)	M10
	86 4-Chlorotoluene	91	12.877	12.871	(0.938)	7917	1.00000	0.82(a)	
	87 tert-Butylbenzene	119	13.156	13.157	(0.958)	6025	1.00000	0.67(a)	
	88 Pentachloroethane	165	13.156	13.157	(0.958)	1395	1.00000	0.77(a)	
	89 1,2,4-Trimethylbenzene	105	13.249	13.250	(0.965)	6685	1.00000	(a)	
	90 sec-Butylbenzene	105	13.385	13.385	(0.975)	7186	1.00000	0.64(a)	
	91 P-Isopropyltoluene	119	13.592	13.593	(0.990)	5982	1.00000	(a)	
	92 1,3-Dichlorobenzene	146	13.628	13.629	(0.993)	4550	1.00000	0.87(a)	
*	93 1,4-Dichlorobenzene-D4	152	13.728	13.729	(1.000)	231692	50.0000		
	94 1,4-Dichlorobenzene	146	13.750	13.750	(1.002)	5398	1.00000	1.00	
	95 1,2,3-Trimethylbenzene	105	13.807	13.807	(1.006)	7986	1.00000	0.75(a)	
	96 N-Butylbenzene	91	14.129	14.136	(1.029)	6870	1.00000	0.73(a)	
	97 1,2-Dichlorobenzene	146	14.279	14.286	(1.040)	4930	1.00000	0.98(a)	
	98 1,2-Dibromo-3-Chloropropane	75	15.330	15.337	(1.117)	349	1.00000	0.89(aM)	M6
	99 1,3,5-Trichlorobenzene	180	15.373	15.380	(1.120)	2893	1.00000	0.75(a)	
	100 Hexachlorobutadiene	225	16.202	16.210	(1.180)	1658	1.00000	0.91(a)	
	101 1,2,4-Trichlorobenzene	180	16.216	16.216	(1.181)	2857	1.00000	0.89(a)	
	102 Naphthalene	128	16.631	16.639	(1.211)	4235	1.00000	1.3	
M	103 1,2-Dichloroethylene (total)	96				6830	1.00000	2.2	
	104 1,2,3-Trichlorobenzene	180	16.874	16.875	(1.229)	2401	1.00000	0.81(a)	
M	105 Xylenes (total)	91				21416	5.00000	2.2(a)	

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\gcms-t.i\T101118B.b\T7722.D
Date : 11-OCT-2018 11:28
Client ID:
Sample Info: WG238351-1
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: HG/JR
Column diameter: 0.18
\\target_server\gg\chem\gcms-t.i\T101118B.b\T7722.D
Y (x10^5)
Min
-Dichlorodifluoromethane (1.344)
-Chloromethane (1.407)
-Vinyl Chloride (1.527)
-Bromomethane (1.766)
-Chloroethane (1.856)
-Trichlorofluoromethane (1.952)
-Diethyl Ether (2.181)
-1,1-Dichloroethene (2.360)+
-Iodomethane (2.460)
-Acrolein (2.610)
-Allyl Chloride (2.732)
-Methylene Chloride (2.825)+
-trans-1,2-Dichloroethene (2.968)+
-Methyl tert-butyl ether (3.092)
-Tertiary-butyl alcohol (3.182)
-Acetonitrile (3.339)
-Di-isopropyl ether (3.475)
-Chloroprene (3.604)+
-Acrylonitrile (3.683)
-Ethyl tertiary-butyl ethe (3.918)+
-cis-1,2-Dichloroethene (4.283)
-2,2-Dichloropropane (4.433)
-Cyclohexane (4.556)+
-Chloroform (4.691)
-Carbon Tetrachloride (4.862)
-Dibromofluoromethane (4.977)+
-2-Butanone (5.206)+
-Benzene (5.592)
-Propionitrile (5.699)+
-Pentafluorobenzene (5.792)+
-1,2-Dichloroethane (5.921)
-Isobutyl Alcohol (6.078)
-Trichloroethene (6.500)+
-1,4-Difluorobenzene (6.586)
-Dibromomethane (7.107)
-1,2-Dichloropropane (7.265)
-Bromodichloromethane (7.386)
-Methyl Methacrylate (7.680)+
-cis-1,3-dichloropropene (8.294)+
Toluene-D8 (8.545)+
-Tetrachloroethene (9.117)
-4-Methyl-2-pentanone (9.210)+
-1,1,2-Trichloroethane (9.431)
-Ethyl Methacrylate (9.510)
-Dibromochloromethane (9.653)
-1,3-Dichloropropane (9.782)
-1,2-Dibromoethane (9.925)
-Total Alkylbenzenes (10.100)
-2-Hexanone (10.354)
-Ethylbenzene (10.733)+
-m+p-Xylenes (10.940)
Chlorobenzene-D5 (10.640)+
-o-Xylene (11.505)
-Styrene (11.576)+
-Isopropylbenzene (11.934)
-Bromobenzene (12.392)+
-n-Propylbenzene (12.484)
-2-Chlorotoluene (12.592)
-1,3,5-Trimethylbenzene (12.756)+
-4-Chlorotoluene (12.971)+
P-Bromofluorobenzene (12.277)
(12.813)
-tert-Butylbenzene (13.157)+
-1,2,4-Trimethylbenzene (13.250)
-sec-Butylbenzene (13.385)
-P-Isopropyltoluene (13.586)+
-1,2,3-Trimethylbenzene (13.807)
1,4-Dichlorobenzene-D4 (13.729)+
-N-Butylbenzene (14.129)
-1,2-Dichlorobenzene (14.279)
-1,2-Dibromo-3-Chloropropane (15.737)
-1,3,5-Trichlorobenzene (15.943)
-Hexachlorobutadiene (16.210)+
-Naphthalene (16.639)
-1,2-Dichloroethylene (tot (16.880)+

Data File: \\target_server\gg\chem\gcms-t.i\T101118B.b\T7723.D
Report Date: 15-Oct-2018 12:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T101118B.b\T7723.D
Lab Smp Id: WG238351-6
Inj Date : 11-OCT-2018 11:58
Operator : HG/JR   Inst ID: gcms-t.i
Smp Info : WG238351-6
Misc Info :
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T101118B.b\T8A05(56)D.m
Meth Date : 12-Oct-2018 06:13 tcote   Quant Type: ISTD
Cal Date : 11-OCT-2018 11:58   Cal File: T7723.D
Als bottle: 5   Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: D2400TARGET-1

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.344	1.344	(0.232)	450318	150.000	135	
2	Chloromethane	50	1.480	1.480	(0.256)	365814	150.000	127	
3	Vinyl chloride	62	1.537	1.537	(0.265)	476446	150.000	135	
4	Bromomethane	94	1.759	1.759	(0.304)	357339	150.000	148	
5	Chloroethane	64	1.845	1.852	(0.319)	286930	150.000	131	
6	Trichlorofluoromethane	101	1.945	1.952	(0.336)	984367	150.000	136	
7	Diethyl Ether	59	2.173	2.174	(0.375)	401659	150.000	138	
8	1,1-Dichloroethene	96	2.331	2.331	(0.403)	468895	150.000	146	
9	Freon-113	151	2.359	2.360	(0.407)	422324	150.000	151(A)	
10	Carbon Disulfide	76	2.367	2.360	(0.409)	1142792	150.000	130	
11	Iodomethane	142	2.452	2.453	(0.423)	523456	150.000	192(A)	
12	Acrolein	56	2.617	2.617	(0.452)	369910	750.000	689	
13	Allyl Chloride	41	2.724	2.724	(0.470)	651989	150.000	137	
14	Methylene Chloride	84	2.824	2.825	(0.488)	557523	150.000	129	
15	Acetone	43	2.874	2.875	(0.496)	593519	750.000	526	
16	trans-1,2-Dichloroethene	96	2.967	2.968	(0.512)	516210	150.000	147	
17	Methyl Acetate	43	2.989	2.989	(0.516)	362262	150.000	140	
18	Methyl tert-butyl ether	73	3.074	3.075	(0.531)	1360661	150.000	140	
19	Tertiary-butyl alcohol	59	3.182	3.182	(0.549)	200929	750.000	590	
20	Acetonitrile	41	3.339	3.339	(0.577)	391982	1500.00	1500	
21	Di-isopropyl ether	45	3.468	3.468	(0.599)	1307735	150.000	152(A)	
22	Chloroprene	53	3.582	3.582	(0.619)	772009	150.000	157(A)	
23	1,1-Dichloroethane	63	3.611	3.611	(0.623)	906388	150.000	138	

Data File: \\target_server\gg\chem\gcms-t.i\T101118B.b\T7723.D
Report Date: 15-Oct-2018 12:46

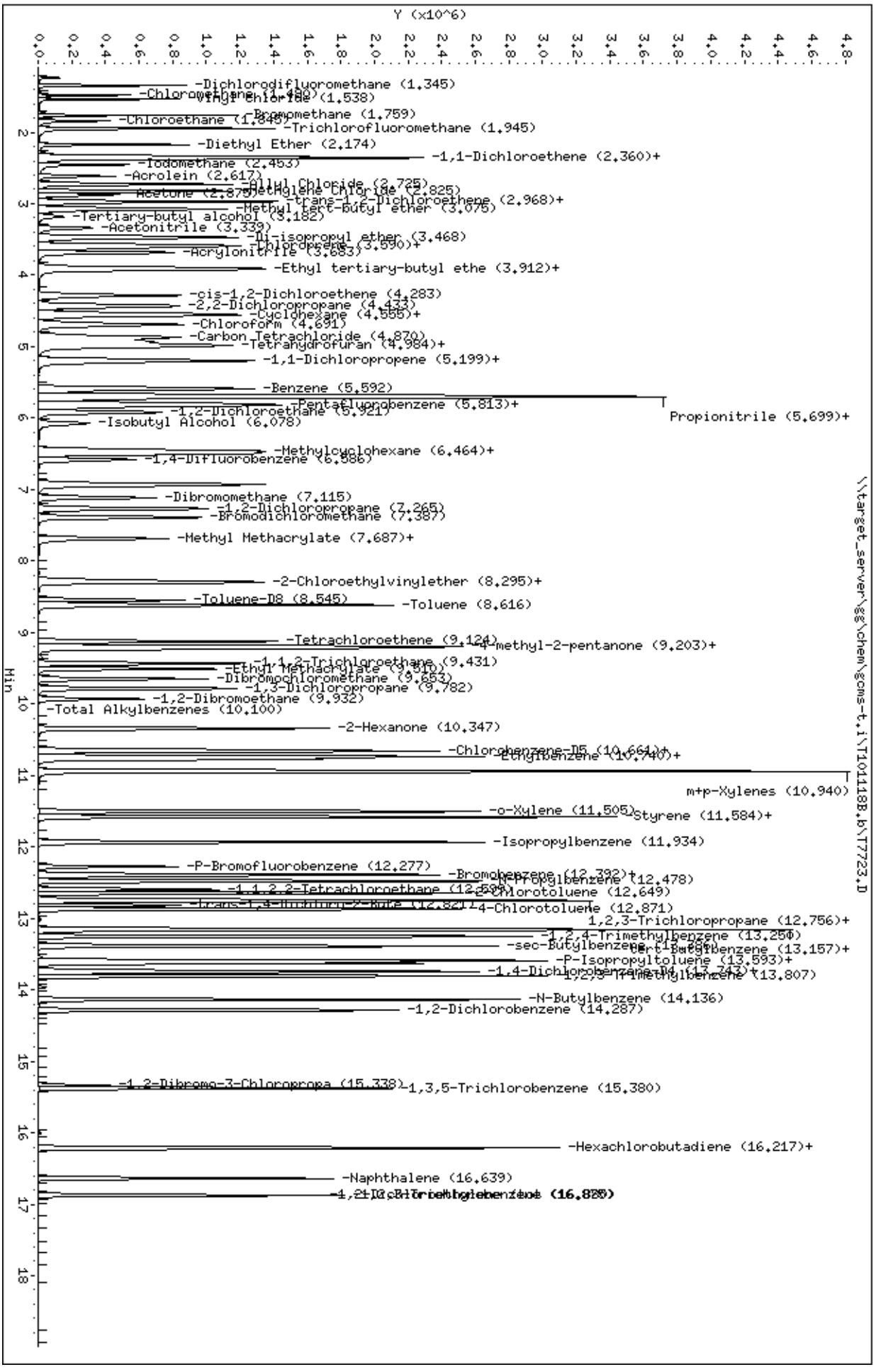
			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	24	Acrylonitrile	52	3.682	3.683	(0.636)	621773	750.000	709	
	25	Ethyl tertiary-butyl ether	59	3.904	3.904	(0.674)	1492058	150.000	159(A)	
	26	Vinyl Acetate	43	3.925	3.926	(0.596)	1006727	150.000	149	
	27	cis-1,2-Dichloroethene	96	4.283	4.283	(0.740)	473871	150.000	146	
	28	2,2-Dichloropropane	77	4.433	4.426	(0.765)	976404	150.000	145	
	29	Cyclohexane	56	4.540	4.548	(0.784)	582189	150.000	174(A)	
	30	Bromochloromethane	128	4.569	4.562	(0.789)	190050	150.000	148	
	31	Chloroform	83	4.690	4.691	(0.810)	1108625	150.000	144	
	32	Carbon Tetrachloride	117	4.869	4.869	(0.739)	951561	150.000	154(A)	
	33	Tetrahydrofuran	42	4.926	4.934	(0.851)	520624	750.000	750	
$	34	Dibromofluoromethane	113	4.984	4.977	(0.861)	233456	50.0000	49.1	
	35	1,1,1-Trichloroethane	97	4.991	4.984	(0.862)	1084095	150.000	147	
	36	1,1-Dichloropropene	75	5.191	5.191	(0.788)	722718	150.000	150	
	37	2-Butanone	43	5.205	5.206	(0.899)	871920	750.000	750	
	38	Benzene	78	5.591	5.585	(0.849)	1701614	150.000	147	
	39	Propionitrile	54	5.677	5.670	(0.980)	521991	1500.00	1420	
	40	Methacrylonitrile	41	5.706	5.692	(0.985)	2517031	1500.00	1500	
*	41	Pentafluorobenzene	168	5.792	5.785	(1.000)	369677	50.0000		
$	42	1,2-Dichloroethane-D4	65	5.813	5.813	(1.004)	339946	50.0000	48.8	
	43	Tertiary-amyl methyl ether	73	5.820	5.820	(1.005)	1366641	150.000	154(A)	
	44	1,2-Dichloroethane	62	5.920	5.921	(0.899)	958333	150.000	136	
	45	Isobutyl Alcohol	43	6.078	6.071	(1.049)	273561	3000.00	3620(A)	
	46	Methylcyclohexane	83	6.456	6.457	(1.115)	795300	150.000	150	
	47	Trichloroethene	95	6.499	6.493	(0.987)	524724	150.000	149	
*	48	1,4-Difluorobenzene	114	6.585	6.586	(1.000)	566935	50.0000		
	49	Dibromomethane	93	7.114	7.107	(1.080)	371924	150.000	166(A)	
	50	1,2-Dichloropropane	63	7.272	7.265	(1.104)	458888	150.000	162(A)	
	51	Bromodichloromethane	83	7.386	7.386	(1.122)	870341	150.000	154(A)	
	52	Methyl Methacrylate	41	7.686	7.687	(1.167)	442567	150.000	150(A)	
	53	1,4-Dioxane	88	7.701	7.694	(1.169)	53350	3000.00	1460	
	54	2-Chloroethylvinylether	63	8.266	8.259	(1.255)	278180	150.000	150	
	55	cis-1,3-dichloropropene	75	8.294	8.294	(1.259)	927268	150.000	149	
$	56	Toluene-D8	98	8.544	8.545	(1.297)	703983	50.0000	50.7	
	57	Toluene	92	8.616	8.616	(1.308)	1063929	150.000	151(A)	
	58	Tetrachloroethene	164	9.124	9.124	(0.858)	366087	150.000	154(A)	
	59	4-methyl-2-pentanone	43	9.195	9.195	(1.396)	1859189	750.000	750	
	60	trans-1,3-Dichloropropene	75	9.224	9.224	(1.401)	899255	150.000	153(A)	
	61	1,1,2-Trichloroethane	83	9.431	9.431	(1.432)	389289	150.000	158(A)	
	62	Ethyl Methacrylate	69	9.510	9.510	(1.444)	639175	150.000	150(A)	
	63	Dibromochloromethane	129	9.653	9.653	(0.907)	617746	150.000	155(A)	
	64	1,3-Dichloropropane	76	9.789	9.789	(0.920)	829369	150.000	158(A)	
	65	1,2-Dibromoethane	107	9.932	9.932	(1.508)	498458	150.000	154(A)	
M	66	Total Alkylbenzenes	100				12887584	150.000	1080	
	67	2-Hexanone	43	10.346	10.347	(0.972)	1316096	750.000	750	
*	68	Chlorobenzene-D5	117	10.639	10.640	(1.000)	516991	50.0000		
	69	Chlorobenzene	112	10.661	10.661	(1.002)	1153837	150.000	145	
	70	Ethylbenzene	91	10.739	10.733	(1.009)	2100758	150.000	145	
	71	1,1,1,2-Tetrachloroethane	131	10.768	10.768	(1.012)	538700	150.000	150(A)	
	72	m+p-Xylenes	91	10.940	10.940	(1.028)	3094149	300.000	282	
	73	o-Xylene	91	11.505	11.505	(1.081)	1766111	150.000	167(A)	
	74	Styrene	104	11.583	11.576	(1.089)	1290660	150.000	149	
	75	Bromoform	173	11.576	11.576	(1.088)	430054	150.000	164(A)	
	76	Isopropylbenzene	105	11.934	11.934	(0.869)	1895370	150.000	165(A)	
$	77	P-Bromofluorobenzene	95	12.277	12.277	(1.864)	301329	50.0000	50.3	

Data File: \\target_server\gg\chem\gcms-t.i\T101118B.b\T7723.D
Report Date: 15-Oct-2018 12:46

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	78 Bromobenzene	156	12.391	12.392	(0.903)	537469	150.000	150	
	79 cis-1,4-Dichloro-2-Butene	53	12.405	12.399	(0.904)	239743	150.000	150	
	80 N-Propylbenzene	91	12.477	12.477	(0.909)	2330396	150.000	145	
	81 1,1,2,2-Tetrachloroethane	83	12.599	12.592	(0.918)	559239	150.000	147	
	82 2-Chlorotoluene	91	12.649	12.649	(0.921)	1536959	150.000	149	
	83 1,2,3-Trichloropropane	75	12.734	12.735	(0.928)	538005	150.000	148	
	84 1,3,5-Trimethylbenzene	105	12.756	12.756	(0.929)	1708456	150.000	158(A)	
	85 trans-1,4-Dichloro-2-Butene	53	12.820	12.821	(0.934)	195794	150.000	150	
	86 4-Chlorotoluene	91	12.870	12.871	(0.938)	1622894	150.000	149	
	87 tert-Butylbenzene	119	13.156	13.157	(0.958)	1643411	150.000	162(A)	
	88 Pentachloroethane	165	13.163	13.157	(0.959)	317022	150.000	155(A)	
	89 1,2,4-Trimethylbenzene	105	13.249	13.250	(0.965)	1732076	150.000	148	
	90 sec-Butylbenzene	105	13.385	13.385	(0.975)	2001449	150.000	158(A)	
	91 P-Isopropyltoluene	119	13.592	13.593	(0.990)	1748863	150.000	148	
	92 1,3-Dichlorobenzene	146	13.628	13.629	(0.993)	896994	150.000	152(A)	
*	93 1,4-Dichlorobenzene-D4	152	13.728	13.729	(1.000)	262508	50.0000		
	94 1,4-Dichlorobenzene	146	13.750	13.750	(1.002)	907690	150.000	148	
	95 1,2,3-Trimethylbenzene	105	13.807	13.807	(1.006)	1828150	150.000	152(A)	
	96 N-Butylbenzene	91	14.136	14.136	(1.030)	1722933	150.000	161(A)	
	97 1,2-Dichlorobenzene	146	14.286	14.286	(1.041)	849615	150.000	148	
	98 1,2-Dibromo-3-Chloropropane	75	15.337	15.337	(1.117)	132056	150.000	150	
	99 1,3,5-Trichlorobenzene	180	15.380	15.380	(1.120)	693764	150.000	160(A)	
	100 Hexachlorobutadiene	225	16.209	16.210	(1.181)	314407	150.000	152(A)	
	101 1,2,4-Trichlorobenzene	180	16.217	16.216	(1.181)	613458	150.000	169(A)	
	102 Naphthalene	128	16.638	16.639	(1.212)	1260586	150.000	150	
M	103 1,2-Dichloroethylene (total)	96				990081	150.000	293	
	104 1,2,3-Trichlorobenzene	180	16.874	16.875	(1.229)	569231	150.000	170(A)	
M	105 Xylenes (total)	91				4860260	150.000	449	

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.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Instrument: gcms-t.i
Operator: HG/JR
Column diameter: 0.18
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Y (x10^6)
Min
-Dichlorodifluoromethane (1.345)
-Chloromethane (1.402)
Vinyl Chloride (1.538)
-Bromomethane (1.759)
-Chloroethane (1.845)
-Trichlorofluoromethane (1.945)
-Diethyl Ether (2.174)
-1,1-Dichloroethene (2.360)+
-Iodomethane (2.453)
-Acrolein (2.617)
-Allyl Chloride (2.725)
Acetone (2.870)
Methylene Chloride (2.825)
-trans-1,2-Dichloroethene (2.968)+
-Methyl tert-butyl ether (3.075)
-Tertiary-butyl alcohol (3.182)
-Acetonitrile (3.339)
-Di-isopropyl ether (3.468)
-Chloroprene (3.590)+
-Acrylonitrile (3.683)
-Ethyl tertiary-butyl ethe (3.912)+
-cis-1,2-Dichloroethene (4.283)
-2,2-Dichloropropane (4.433)
-Cyclohexane (4.555)+
-Chloroform (4.691)
-Carbon Tetrachloride (4.870)
-Tetrahydrofuran (4.984)+
-1,1-Dichloropropene (5.199)+
-Benzene (5.592)
-Pentafluorobenzene (5.813)+
Propionitrile (5.699)+
-1,2-Dichloroethane (5.921)
-Isobutyl Alcohol (6.078)
-Methylcyclohexane (6.464)+
-1,4-Difluorobenzene (6.586)
-Dibromomethane (7.115)
-1,2-Dichloropropane (7.265)
-Bromodichloromethane (7.387)
-Methyl Methacrylate (7.687)+
-2-Chloroethylvinylether (8.295)+
-Toluene-D8 (8.545)
-Toluene (8.616)
-Tetrachloroethene (9.124)
-4-methyl-2-pentanone (9.203)+
-1,1,2-Trichloroethane (9.431)
-Ethyl Methacrylate (9.510)
-Dibromochloromethane (9.653)
-1,3-Dichloropropane (9.782)
-1,2-Dibromoethane (9.932)
-Total Alkylbenzenes (10.100)
-2-Hexanone (10.347)
-Chlorobenzene-D5 (10.664)+
-Ethylbenzene (10.740)+
m+p-Xylenes (10.940)
-o-Xylene (11.505)
Styrene (11.584)+
-Isopropylbenzene (11.934)
-P-Bromofluorobenzene (12.277)
-Bromobenzene (12.392)+
-N-Propylbenzene (12.478)
-1,1,2,2-Tetrachloroethane (12.599)
2-Chlorotoluene (12.649)
-trans-1,4-Dichloro-2-Bute (12.821)+
4-Chlorotoluene (12.871)
1,2,3-Trichloropropane (12.756)+
-1,2,4-Trimethylbenzene (13.250)
-sec-Butylbenzene (13.
tert-Butylbenzene (13.157)+
-P-Isopropyltoluene (13.593)+
-1,4-Dichlorobenzene-D4 (13.743)+
1,2,3-Trimethylbenzene (13.807)
-N-Butylbenzene (14.136)
-1,2-Dichlorobenzene (14.287)
-1,2-Dibromo-3-Chloropropa (15.338)
-1,3,5-Trichlorobenzene (15.380)
-Hexachlorobutadiene (16.217)+
-Naphthalene (16.639)
-1,2,3-Trichlorobenzene (16.828)

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Report Date: 15-Oct-2018 12:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T101118B.b\T7724.D
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Operator : HG/JR Inst ID: gcms-t.i
Smp Info : WG238351-5
Misc Info :
Comment : SW846 5030
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Meth Date : 12-Oct-2018 06:13 tcote Quant Type: ISTD
Cal Date : 11-OCT-2018 12:28 Cal File: T7724.D
Als bottle: 6 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: D2400TARGET-1

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.344	1.344	(0.232)	304555	100.000	88.1	
2	Chloromethane	50	1.480	1.480	(0.256)	278140	100.000	92.7	
3	Vinyl chloride	62	1.537	1.537	(0.265)	336411	100.000	91.8	
4	Bromomethane	94	1.759	1.759	(0.304)	258344	100.000	100	
5	Chloroethane	64	1.845	1.852	(0.319)	192183	100.000	85.3	
6	Trichlorofluoromethane	101	1.945	1.952	(0.336)	645001	100.000	86.3	
7	Diethyl Ether	59	2.174	2.174	(0.375)	283620	100.000	93.6	
8	1,1-Dichloroethene	96	2.331	2.331	(0.403)	342466	100.000	101	
9	Freon-113	151	2.359	2.360	(0.407)	282064	100.000	96.0	
10	Carbon Disulfide	76	2.359	2.360	(0.407)	834164	100.000	91.5	
11	Iodomethane	142	2.452	2.453	(0.423)	356877	100.000	119	
12	Acrolein	56	2.617	2.617	(0.452)	261258	500.000	466	
13	Allyl Chloride	41	2.724	2.724	(0.470)	456184	100.000	92.1	
14	Methylene Chloride	84	2.824	2.825	(0.488)	404774	100.000	90.0	
15	Acetone	43	2.874	2.875	(0.496)	443856	500.000	392	
16	trans-1,2-Dichloroethene	96	2.967	2.968	(0.512)	367386	100.000	99.1	
17	Methyl Acetate	43	2.989	2.989	(0.516)	249822	100.000	92.7	
18	Methyl tert-butyl ether	73	3.074	3.075	(0.531)	1006088	100.000	98.4	
19	Tertiary-butyl alcohol	59	3.182	3.182	(0.549)	161649	500.000	456	
20	Acetonitrile	41	3.339	3.339	(0.577)	298890	1000.00	976	
21	Di-isopropyl ether	45	3.468	3.468	(0.599)	962591	100.000	105	
22	Chloroprene	53	3.582	3.582	(0.619)	542084	100.000	103	
23	1,1-Dichloroethane	63	3.611	3.611	(0.623)	669475	100.000	96.6	

Data File: \\target_server\gg\chem\gcms-t.i\T101118B.b\T7724.D
Report Date: 15-Oct-2018 12:46

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	24	Acrylonitrile	52	3.682	3.683	(0.636)	445872	500.000	484	
	25	Ethyl tertiary-butyl ether	59	3.904	3.904	(0.674)	1059736	100.000	106	
	26	Vinyl Acetate	43	3.925	3.926	(0.596)	710688	100.000	99.4	
	27	cis-1,2-Dichloroethene	96	4.283	4.283	(0.740)	345616	100.000	100	
	28	2,2-Dichloropropane	77	4.433	4.426	(0.765)	703945	100.000	98.9	
	29	Cyclohexane	56	4.540	4.548	(0.784)	432169	100.000	118	
	30	Bromochloromethane	128	4.562	4.562	(0.788)	150469	100.000	107	
	31	Chloroform	83	4.690	4.691	(0.810)	802706	100.000	98.6	
	32	Carbon Tetrachloride	117	4.869	4.869	(0.739)	664325	100.000	101	
	33	Tetrahydrofuran	42	4.926	4.934	(0.851)	370517	500.000	499	
$	34	Dibromofluoromethane	113	4.976	4.977	(0.859)	250235	50.0000	49.7	
	35	1,1,1-Trichloroethane	97	4.991	4.984	(0.862)	767426	100.000	98.4	
	36	1,1-Dichloropropene	75	5.191	5.191	(0.788)	515986	100.000	106	
	37	2-Butanone	43	5.205	5.206	(0.899)	636088	500.000	500	
	38	Benzene	78	5.591	5.585	(0.849)	1250269	100.000	102	
	39	Propionitrile	54	5.670	5.670	(0.979)	384670	1000.00	988	
	40	Methacrylonitrile	41	5.699	5.692	(0.984)	1784241	1000.00	974	
*	41	Pentafluorobenzene	168	5.792	5.785	(1.000)	391293	50.0000		
$	42	1,2-Dichloroethane-D4	65	5.813	5.813	(1.004)	340244	50.0000	46.8	
	43	Tertiary-amyl methyl ether	73	5.820	5.820	(1.005)	951329	100.000	101	
	44	1,2-Dichloroethane	62	5.920	5.921	(0.899)	676133	100.000	92.4	
	45	Isobutyl Alcohol	43	6.078	6.071	(1.049)	214197	2000.00	2150	
	46	Methylcyclohexane	83	6.457	6.457	(1.115)	521327	100.000	94.6	
	47	Trichloroethene	95	6.499	6.493	(0.987)	374532	100.000	100	
*	48	1,4-Difluorobenzene	114	6.585	6.586	(1.000)	600190	50.0000		
	49	Dibromomethane	93	7.114	7.107	(1.080)	265696	100.000	103	
	50	1,2-Dichloropropane	63	7.265	7.265	(1.103)	334170	100.000	110	
	51	Bromodichloromethane	83	7.393	7.386	(1.123)	614512	100.000	102	
	52	Methyl Methacrylate	41	7.686	7.687	(1.167)	290963	100.000	95.6	
	53	1,4-Dioxane	88	7.701	7.694	(1.169)	65272	2000.00	1710	
	54	2-Chloroethylvinylether	63	8.266	8.259	(1.255)	189651	100.000	97.8	
	55	cis-1,3-dichloropropene	75	8.294	8.294	(1.259)	669585	100.000	101	
$	56	Toluene-D8	98	8.544	8.545	(1.297)	756555	50.0000	51.2	
	57	Toluene	92	8.616	8.616	(1.308)	770603	100.000	103	
	58	Tetrachloroethene	164	9.124	9.124	(0.858)	266856	100.000	104	
	59	4-methyl-2-pentanone	43	9.195	9.195	(1.396)	1335740	500.000	494	
	60	trans-1,3-Dichloropropene	75	9.224	9.224	(1.401)	651752	100.000	104	
	61	1,1,2-Trichloroethane	83	9.431	9.431	(1.432)	281660	100.000	107	
	62	Ethyl Methacrylate	69	9.510	9.510	(1.444)	445483	100.000	99.4	
	63	Dibromochloromethane	129	9.653	9.653	(0.907)	437226	100.000	102	
	64	1,3-Dichloropropane	76	9.781	9.789	(0.919)	593884	100.000	105	
	65	1,2-Dibromoethane	107	9.932	9.932	(1.508)	352777	100.000	102	
M	66	Total Alkylbenzenes	100				9290953	100.000	716	
	67	2-Hexanone	43	10.346	10.347	(0.972)	949301	500.000	494	
*	68	Chlorobenzene-D5	117	10.639	10.640	(1.000)	549445	50.0000		
	69	Chlorobenzene	112	10.661	10.661	(1.002)	846957	100.000	100	
	70	Ethylbenzene	91	10.732	10.733	(1.009)	1532292	100.000	99.7	
	71	1,1,1,2-Tetrachloroethane	131	10.768	10.768	(1.012)	378456	100.000	99.4	
	72	m+p-Xylenes	91	10.940	10.940	(1.028)	2348302	200.000	201	
	73	o-Xylene	91	11.505	11.505	(1.081)	1272309	100.000	111	
	74	Styrene	104	11.583	11.576	(1.089)	914677	100.000	99.6	
	75	Bromoform	173	11.576	11.576	(1.088)	301112	100.000	106	
	76	Isopropylbenzene	105	11.934	11.934	(0.869)	1388715	100.000	110	
$	77	P-Bromofluorobenzene	95	12.277	12.277	(1.864)	318942	50.0000	50.3	

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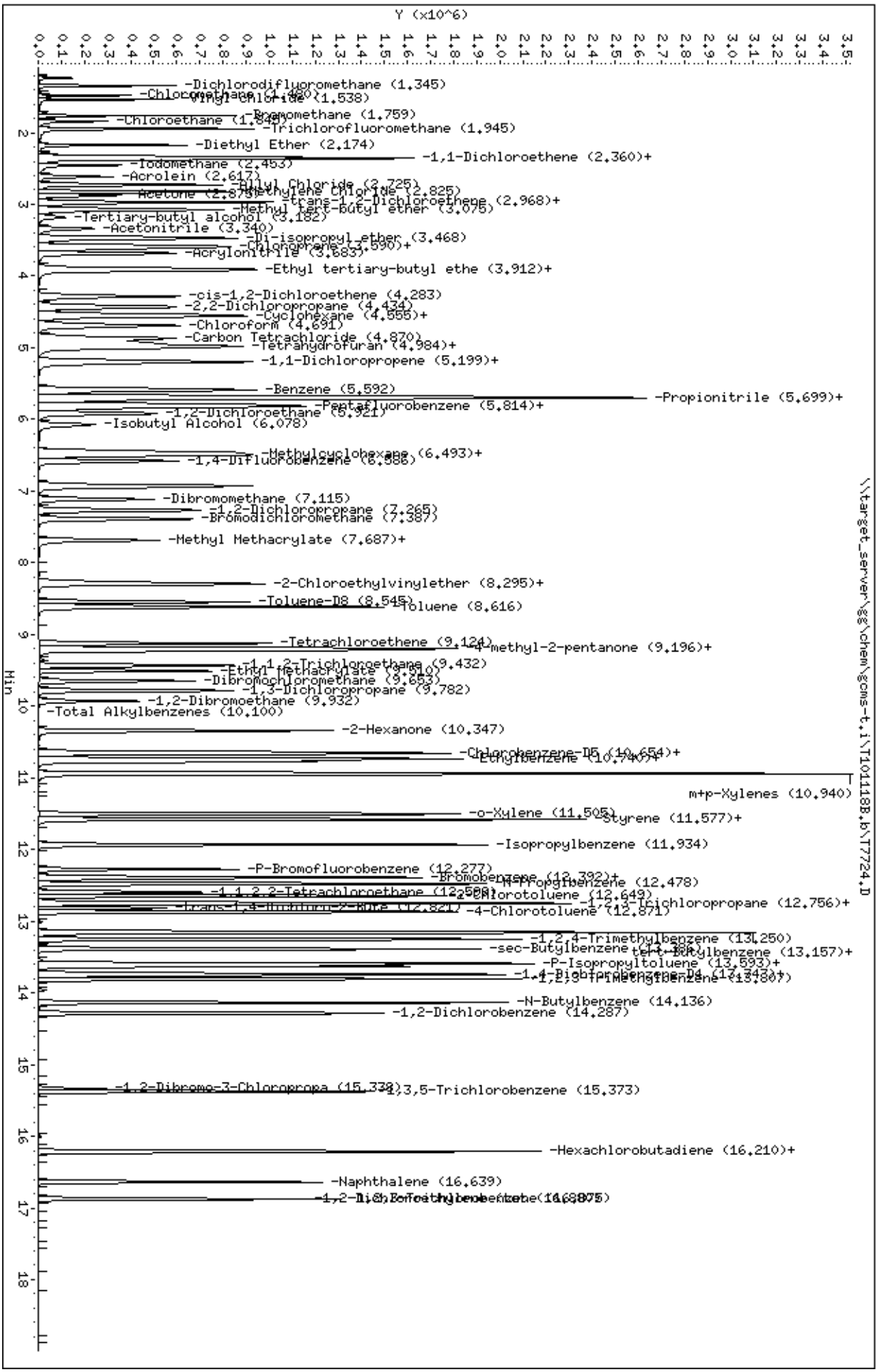
Report Date: 15-Oct-2018 12:46

							AMOUNTS		
		QUANT SIG					CAL-AMT	ON-COL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	78 Bromobenzene	156	12.384	12.392	(0.902)	390090	100.000	100	
	79 cis-1,4-Dichloro-2-Butene	53	12.406	12.399	(0.904)	161376	100.000	94.9	
	80 N-Propylbenzene	91	12.477	12.477	(0.909)	1710543	100.000	98.8	
	81 1,1,2,2-Tetrachloroethane	83	12.591	12.592	(0.917)	391845	100.000	96.2	
	82 2-Chlorotoluene	91	12.649	12.649	(0.921)	1115471	100.000	99.9	
	83 1,2,3-Trichloropropane	75	12.734	12.735	(0.928)	376362	100.000	96.4	
	84 1,3,5-Trimethylbenzene	105	12.756	12.756	(0.929)	1231796	100.000	104	
	85 trans-1,4-Dichloro-2-Butene	53	12.820	12.821	(0.934)	132027	100.000	95.0	
	86 4-Chlorotoluene	91	12.870	12.871	(0.938)	1200703	100.000	102	
	87 tert-Butylbenzene	119	13.156	13.157	(0.958)	1185118	100.000	106	
	88 Pentachloroethane	165	13.156	13.157	(0.958)	216243	100.000	98.2	
	89 1,2,4-Trimethylbenzene	105	13.249	13.250	(0.965)	1258102	100.000	99.4	
	90 sec-Butylbenzene	105	13.385	13.385	(0.975)	1412452	100.000	103	
	91 P-Isopropyltoluene	119	13.592	13.593	(0.990)	1270620	100.000	99.5	
	92 1,3-Dichlorobenzene	146	13.628	13.629	(0.993)	642942	100.000	100	
*	93 1,4-Dichlorobenzene-D4	152	13.728	13.729	(1.000)	284052	50.0000		
	94 1,4-Dichlorobenzene	146	13.750	13.750	(1.002)	647654	100.000	97.8	
	95 1,2,3-Trimethylbenzene	105	13.807	13.807	(1.006)	1293336	100.000	99.4	
	96 N-Butylbenzene	91	14.136	14.136	(1.030)	1222322	100.000	105	
	97 1,2-Dichlorobenzene	146	14.286	14.286	(1.041)	609969	100.000	98.8	
	98 1,2-Dibromo-3-Chloropropane	75	15.337	15.337	(1.117)	93429	100.000	98.5	
	99 1,3,5-Trichlorobenzene	180	15.380	15.380	(1.120)	481535	100.000	102	
	100 Hexachlorobutadiene	225	16.209	16.210	(1.181)	226524	100.000	101	
	101 1,2,4-Trichlorobenzene	180	16.217	16.216	(1.181)	437375	100.000	109	
	102 Naphthalene	128	16.638	16.639	(1.212)	910419	100.000	100	
M	103 1,2-Dichloroethylene (total)	96				713002	100.000	200	
	104 1,2,3-Trichlorobenzene	180	16.874	16.875	(1.229)	410799	100.000	111	
M	105 Xylenes (total)	91				3620611	100.000	312	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Instrument: gcms-t.i
Operator: HG/JR
Column diameter: 0.18
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Min
-Dichlorodifluoromethane (1.345)
-Chloromethane (1.480)
-Vinyl Chloride (1.538)
-Bromomethane (1.759)
-Chloroethane (1.845)
-Trichlorofluoromethane (1.945)
-Diethyl Ether (2.174)
-1,1-Dichloroethene (2.360)+
-Iodomethane (2.453)
-Acrolein (2.617)
-Allyl Chloride (2.725)
Acetone (2.875)+
-Methylene Chloride (2.825)
-trans-1,2-Dichloroethene (2.968)+
-Methyl tert-butyl ether (3.075)
-Tertiary-butyl alcohol (3.182)
-Acetonitrile (3.340)
-Di-isopropyl ether (3.468)
-Chloroprene (3.590)+
-Acrylonitrile (3.683)
-Ethyl tertiary-butyl ethe (3.912)+
-cis-1,2-Dichloroethene (4.283)
-2,2-Dichloropropane (4.434)
-Cyclohexane (4.555)+
-Chloroform (4.691)
-Carbon Tetrachloride (4.870)
-Tetrahydrofuran (4.984)+
-1,1-Dichloropropene (5.199)+
-Benzene (5.592)
-Propionitrile (5.699)+
-Pentafluorobenzene (5.814)+
-1,2-Dichloroethane (5.921)
-Isobutyl Alcohol (6.078)
-Methylcyclohexane (6.493)+
-1,4-Difluorobenzene (6.586)
-Dibromomethane (7.115)
-1,2-Dichloropropane (7.265)
-Bromodichloromethane (7.387)
-Methyl Methacrylate (7.687)+
-2-Chloroethylvinylether (8.295)+
-Toluene-D8 (8.545)
-Toluene (8.616)
-Tetrachloroethene (9.124)
-4-methyl-2-pentanone (9.196)+
-1,1,2-Trichloroethane (9.432)
-Ethyl Methacrylate (9.510)
-Dibromochloromethane (9.653)
-1,3-Dichloropropane (9.782)
-1,2-Dibromoethane (9.932)
-Total Alkylbenzenes (10.100)
-2-Hexanone (10.347)
-Chlorobenzene-D5 (10.654)+
-Ethylbenzene (10.740)+
m+p-Xylenes (10.940)
-o-Xylene (11.505)
-Styrene (11.577)+
-Isopropylbenzene (11.934)
-P-Bromofluorobenzene (12.277)
-Bromobenzene (12.392)+
-N-Propylbenzene (12.478)
-1,1,2,2-Tetrachloroethane (12.508)
-2-Chlorotoluene (12.649)
-1,2,3-Trichloropropane (12.756)+
-trans-1,4-Dichloro-2-Bute (12.821)
-4-Chlorotoluene (12.871)
-1,2,4-Trimethylbenzene (13.250)
-sec-Butylbenzene (13.
-tert-Butylbenzene (13.157)+
-P-Isopropyltoluene (13.693)+
-1,4-Dichlorobenzene-D4 (13.743)+
-1,2,3-Trimethylbenzene (13.807)
-N-Butylbenzene (14.136)
-1,2-Dichlorobenzene (14.287)
-1,2-Dibromo-3-Chloropropa (15.338)
-1,3,5-Trichlorobenzene (15.373)
-Hexachlorobutadiene (16.210)+
-Naphthalene (16.639)
-1,2,3-Trichlorobenzene (16.875)

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : New Bedford Harbor
SDG: SL9735
Lab ID : WG238427-4
Analytical Date: 10/12/18 08:11
Lab File ID : T7740.D
Instrument ID: GCMS-T
Initial Calibration Date(s): 10/11/18 09:58 10/11/18 12:28
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	Dichlorodifluoromethane	0.44158	0.50152	0.50152	0.010	13.57489	20.00000	Averaged	
2	Chloromethane	0.38338	0.35981	0.35981	0.100	-6.14597	20.00000	Averaged	
3	Vinyl chloride	0.46840	0.49516	0.49516	0.010	5.71096	20.00000	Averaged	
4	Bromomethane	50.00000	56.58150	0.38029	0.010	13.16301	20.00000	Linear	
5	Chloroethane	0.28776	0.30895	0.30895	0.010	7.36421	20.00000	Averaged	
6	Trichlorofluoromethane	0.95514	1.09005	1.09005	0.010	14.12496	20.00000	Averaged	
7	Diethyl Ether	0.38724	0.37910	0.37910	0.010	-2.10289	20.00000	Averaged	
8	1,1-Dichloroethene	50.00000	53.41339	0.47151	0.100	6.82677	20.00000	Linear	
10	Carbon Disulfide	1.16474	1.18131	1.18131	0.010	1.42212	20.00000	Averaged	
14	Methylene Chloride	50.00000	53.34626	0.55493	0.010	6.69252	20.00000	Linear	
15	Acetone	0.14471	0.12175	0.12175	0.010	-15.86536	20.00000	Averaged	
16	trans-1,2-Dichloroethene	0.47388	0.41108	0.41108	0.010	-13.25306	20.00000	Averaged	
18	Methyl tert-butyl ether	1.30623	1.27001	1.27001	0.010	-2.77280	20.00000	Averaged	
21	Di-isopropyl ether	1.17186	1.17582	1.17582	0.010	0.33754	20.00000	Averaged	
23	1,1-Dichloroethane	0.88509	0.87850	0.87850	0.100	-0.74461	20.00000	Averaged	
25	Ethyl tertiary-butyl ether	1.28266	1.35279	1.35279	0.010	5.46748	20.00000	Averaged	
27	cis-1,2-Dichloroethene	0.43904	0.43554	0.43554	0.010	-0.79585	20.00000	Averaged	
28	2,2-Dichloropropane	0.90452	0.98218	0.98218	0.010	8.58670	20.00000	Averaged	
30	Bromochloromethane	0.18455	0.19079	0.19079	0.010	3.38162	20.00000	Averaged	
31	Chloroform	1.04006	1.06796	1.06796	0.010	2.68206	20.00000	Averaged	
32	Carbon Tetrachloride	0.54553	0.63204	0.63204	0.010	15.85784	20.00000	Averaged	
33	Tetrahydrofuran	250	230	0.08670	0.010	-7.88336	20.00000	Linear	
35	1,1,1-Trichloroethane	0.99643	1.09549	1.09549	0.010	9.94162	20.00000	Averaged	
36	1,1-Dichloropropene	50.00000	53.32111	0.46297	0.010	6.64222	20.00000	Linear	
37	2-Butanone	0.15585	0.15419	0.15419	0.010	-1.06954	20.00000	Averaged	
38	Benzene	1.02314	1.04066	1.04066	0.010	1.71226	20.00000	Averaged	
43	Tertiary-amyl methyl ether	1.20589	1.23269	1.23269	0.010	2.22270	20.00000	Averaged	
44	1,2-Dichloroethane	0.60975	0.62453	0.62453	0.010	2.42532	20.00000	Averaged	
47	Trichloroethene	0.31116	0.33900	0.33900	0.010	8.94858	20.00000	Averaged	
49	Dibromomethane	0.21463	0.22673	0.22673	0.010	5.63562	20.00000	Averaged	
50	1,2-Dichloropropane	50.00000	49.22690	0.27112	0.010	-1.54620	20.00000	Linear	
51	Bromodichloromethane	0.50021	0.54059	0.54059	0.010	8.07181	20.00000	Averaged	
53	1,4-Dioxane	0.00317	0.00190	0.00190	0.001	-40.24029	20.00000	Averaged	*
55	cis-1,3-dichloropropene	0.51438	0.57566	0.57566	0.010	11.91256	20.00000	Averaged	
57	Toluene	0.62447	0.65373	0.65373	0.010	4.68568	20.00000	Averaged	
58	Tetrachloroethene	0.23221	0.25283	0.25283	0.010	8.87999	20.00000	Averaged	
59	4-methyl-2-pentanone	0.21268	0.22622	0.22622	0.010	6.36568	20.00000	Averaged	
60	trans-1,3-Dichloropropene	0.52248	0.56676	0.56676	0.010	8.47430	20.00000	Averaged	
61	1,1,2-Trichloroethane	0.22003	0.22915	0.22915	0.010	4.14538	20.00000	Averaged	
63	Dibromochloromethane	0.38813	0.41351	0.41351	0.010	6.53863	20.00000	Averaged	
64	1,3-Dichloropropane	0.51239	0.54284	0.54284	0.010	5.94347	20.00000	Averaged	

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : New Bedford Harbor
SDG: SL9735
Lab ID : WG238427-4
Analytical Date: 10/12/18 08:11
Lab File ID : T7740.D
Instrument ID: GCMS-T
Initial Calibration Date(s): 10/11/18 09:58 10/11/18 12:28
Column ID:

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
65 1,2-Dibromoethane	0.28763	0.29300	0.29300	0.010	1.86509	20.00000	Averaged
67 2-Hexanone	250	249	0.17228	0.010	-0.32425	20.00000	Linear
69 Chlorobenzene	0.76989	0.78328	0.78328	0.300	1.73916	20.00000	Averaged
70 Ethylbenzene	1.39899	1.53087	1.53087	0.010	9.42721	20.00000	Averaged
71 1,1,1,2-Tetrachloroethane	0.34661	0.36423	0.36423	0.010	5.08455	20.00000	Averaged
72 m+p-Xylenes	100	115	1.21483	0.010	14.54618	20.00000	Linear
73 o-Xylene	50.00000	53.61096	1.24420	0.010	7.22192	20.00000	Linear
74 Styrene	50.00000	52.51007	0.87823	0.010	5.02014	20.00000	Linear
75 Bromoform	0.25735	0.28064	0.28064	0.100	9.05008	20.00000	Averaged
76 Isopropylbenzene	50.00000	51.10450	2.51816	0.010	2.20899	20.00000	Linear
78 Bromobenzene	0.68482	0.66916	0.66916	0.010	-2.28786	20.00000	Averaged
80 N-Propylbenzene	3.04569	3.26582	3.26582	0.010	7.22732	20.00000	Averaged
81 1,1,2,2-Tetrachloroethane	0.71709	0.68427	0.68427	0.300	-4.57664	20.00000	Averaged
82 2-Chlorotoluene	1.96503	2.03023	2.03023	0.010	3.31842	20.00000	Averaged
83 1,2,3-Trichloropropane	0.68753	0.67389	0.67389	0.010	-1.98386	20.00000	Averaged
84 1,3,5-Trimethylbenzene	50.00000	51.50747	2.28732	0.010	3.01493	20.00000	Linear
86 4-Chlorotoluene	2.07806	2.16540	2.16540	0.010	4.20306	20.00000	Averaged
87 tert-Butylbenzene	50.00000	50.92941	2.15948	0.010	1.85881	20.00000	Linear
89 1,2,4-Trimethylbenzene	50.00000	51.86283	2.33155	0.010	3.72567	20.00000	Linear
90 sec-Butylbenzene	50.00000	52.55932	2.71452	0.010	5.11863	20.00000	Linear
91 P-Isopropyltoluene	50.00000	51.85527	2.34533	0.010	3.71054	20.00000	Linear
92 1,3-Dichlorobenzene	1.12725	1.13589	1.13589	0.010	0.76713	20.00000	Averaged
94 1,4-Dichlorobenzene	1.16520	1.15679	1.15679	0.010	-0.72174	20.00000	Averaged
96 N-Butylbenzene	50.00000	51.86265	2.29949	0.010	3.72530	20.00000	Linear
97 1,2-Dichlorobenzene	1.08683	1.07415	1.07415	0.010	-1.16661	20.00000	Averaged
98 1,2-Dibromo-3-Chloropropane	50.00000	46.93603	0.15656	0.010	-6.12794	20.00000	Linear
100 Hexachlorobutadiene	0.39507	0.41281	0.41281	0.010	4.49275	20.00000	Averaged
101 1,2,4-Trichlorobenzene	0.70578	0.72959	0.72959	0.010	3.37253	20.00000	Averaged
102 Naphthalene	50.00000	45.98771	1.46022	0.010	-8.02458	20.00000	Linear
104 1,2,3-Trichlorobenzene	50.00000	46.57921	0.66987	0.010	-6.84157	20.00000	Linear
34 Dibromofluoromethane	0.64291	0.64309	0.64309	0.010	0.02832	20.00000	Averaged
42 1,2-Dichloroethane-D4	0.92967	0.98653	0.98653	0.010	6.11623	20.00000	Averaged
56 Toluene-D8	1.23082	1.24502	1.24502	0.010	1.15364	20.00000	Averaged
77 P-Bromofluorobenzene	0.52847	0.55427	0.55427	0.010	4.88345	20.00000	Averaged

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : New Bedford Harbor
Lab ID : WG238427-4
Lab File ID : T7740.D
Initial Calibration Date(s): 10/11/18 09:58 10/11/18 12:28

SDG: SL9735
Analytical Date: 10/12/18 08:11
Instrument ID: GCMS-T
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7740.D
Report Date: 05-Nov-2018 13:32

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T101218.b\T7740.D
Lab Smp Id: WG238427-4
Inj Date : 12-OCT-2018 08:11 MS Autotune Date: 31-AUG-2018 16:19
Operator : HG/JR Inst ID: gcms-t.i
Smp Info : WG238427-4,SL9735
Misc Info : WG238427,WG238351-4,SL9735-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T101218.b\T8A05(56)D.m
Meth Date : 05-Nov-2018 13:31 tcote Quant Type: ISTD
Cal Date : 11-OCT-2018 12:28 Cal File: T7724.D
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

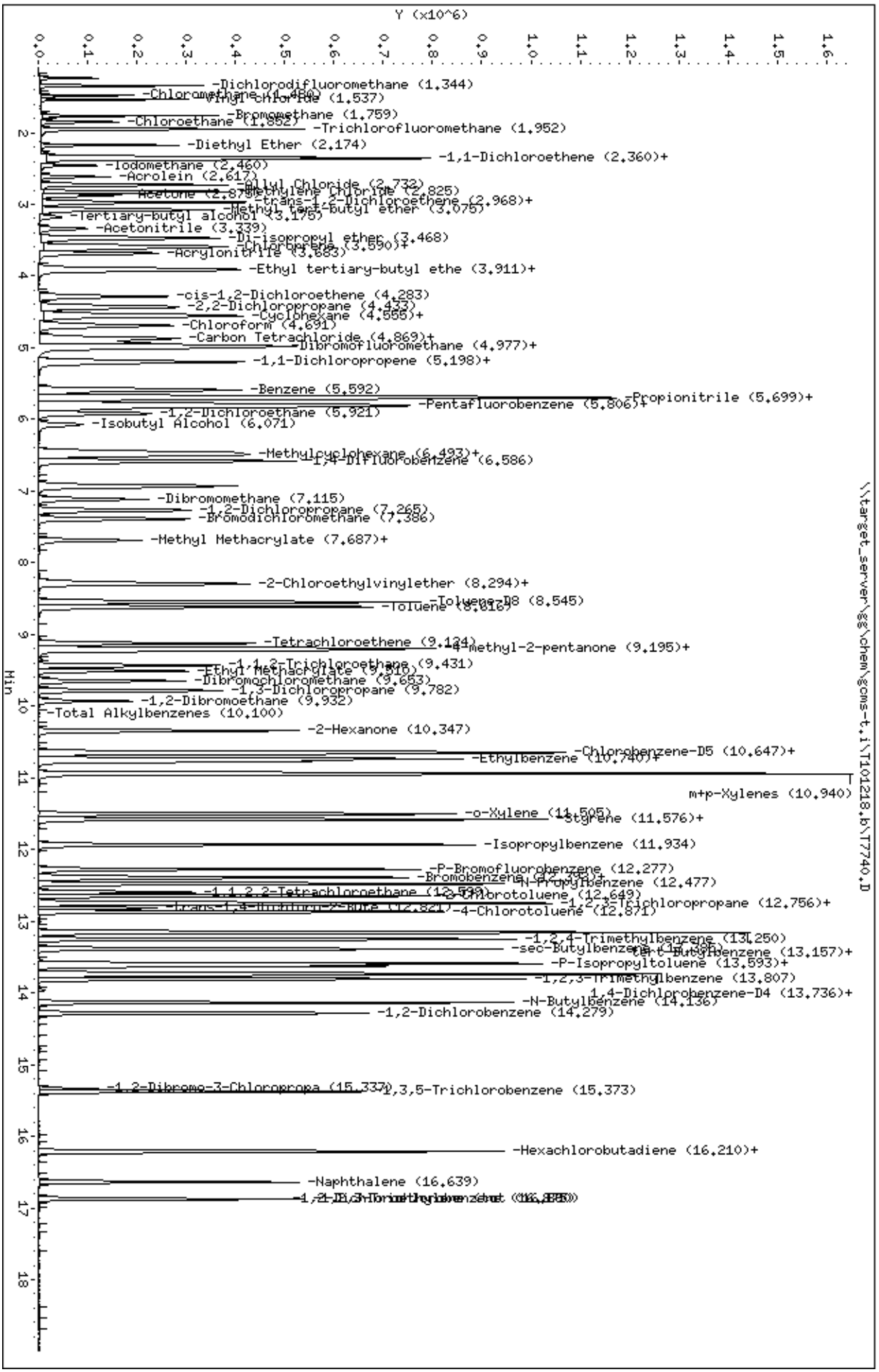
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.344	1.344	(0.232)	167076	50.0000	56.8	
2	Chloromethane	50	1.480	1.480	(0.256)	119867	50.0000	46.9	
3	Vinyl chloride	62	1.537	1.537	(0.265)	164954	50.0000	52.8	
4	Bromomethane	94	1.759	1.759	(0.304)	126689	50.0000	56.6	
5	Chloroethane	64	1.852	1.852	(0.320)	102921	50.0000	53.7	
6	Trichlorofluoromethane	101	1.952	1.952	(0.337)	363135	50.0000	57.1	
7	Diethyl Ether	59	2.173	2.174	(0.375)	126292	50.0000	48.9	
8	1,1-Dichloroethene	96	2.338	2.331	(0.404)	157076	50.0000	53.4	
9	Freon-113	151	2.359	2.360	(0.407)	138335	50.0000	55.3	
10	Carbon Disulfide	76	2.366	2.360	(0.409)	393536	50.0000	50.7	
11	Iodomethane	142	2.459	2.453	(0.425)	108538	50.0000	36.2	
12	Acrolein	56	2.617	2.617	(0.452)	110919	250.000	232	
13	Allyl Chloride	41	2.731	2.724	(0.472)	218927	50.0000	51.9	
14	Methylene Chloride	84	2.824	2.825	(0.488)	184868	50.0000	53.3	
15	Acetone	43	2.874	2.875	(0.496)	202804	250.000	210	
16	trans-1,2-Dichloroethene	96	2.967	2.968	(0.512)	136944	50.0000	43.4	
17	Methyl Acetate	43	2.988	2.989	(0.516)	102860	50.0000	44.8	
18	Methyl tert-butyl ether	73	3.074	3.075	(0.531)	423087	50.0000	48.6	
19	Tertiary-butyl alcohol	59	3.174	3.182	(0.548)	58966	250.000	196	
20	Acetonitrile	41	3.339	3.339	(0.577)	119934	500.000	422	
21	Di-isopropyl ether	45	3.475	3.468	(0.600)	391707	50.0000	50.2	
22	Chloroprene	53	3.582	3.582	(0.619)	246517	50.0000	52.3	
23	1,1-Dichloroethane	63	3.611	3.611	(0.623)	292661	50.0000	49.6	

Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7740.D
Report Date: 05-Nov-2018 13:32

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	24	Acrylonitrile	52	3.682	3.683	(0.636)	184630	250.000	235	
	25	Ethyl tertiary-butyl ether	59	3.904	3.904	(0.674)	450664	50.0000	52.7	
	26	Vinyl Acetate	43	3.925	3.926	(0.596)	299637	50.0000	52.5	
	27	cis-1,2-Dichloroethene	96	4.290	4.283	(0.741)	145095	50.0000	49.6	
	28	2,2-Dichloropropane	77	4.433	4.426	(0.765)	327201	50.0000	54.3	
	29	Cyclohexane	56	4.547	4.548	(0.785)	183403	50.0000	50.9	
	30	Bromochloromethane	128	4.569	4.562	(0.789)	63558	50.0000	51.7	
	31	Chloroform	83	4.690	4.691	(0.810)	355775	50.0000	51.3	
	32	Carbon Tetrachloride	117	4.876	4.869	(0.741)	318357	50.0000	57.9	
	33	Tetrahydrofuran	42	4.933	4.934	(0.852)	144409	250.000	230	
$	34	Dibromofluoromethane	113	4.976	4.977	(0.859)	214237	50.0000	50.0	
	35	1,1,1-Trichloroethane	97	4.983	4.984	(0.860)	364948	50.0000	55.0	
	36	1,1-Dichloropropene	75	5.191	5.191	(0.788)	233197	50.0000	53.3	
	37	2-Butanone	43	5.205	5.206	(0.899)	256823	250.000	247	
	38	Benzene	78	5.591	5.585	(0.849)	524180	50.0000	50.8	
	39	Propionitrile	54	5.670	5.670	(0.979)	157015	500.000	474	
	40	Methacrylonitrile	41	5.698	5.692	(0.984)	808162	500.000	517	
*	41	Pentafluorobenzene	168	5.791	5.785	(1.000)	333136	50.0000		
$	42	1,2-Dichloroethane-D4	65	5.813	5.813	(1.004)	328650	50.0000	53.0	
	43	Tertiary-amyl methyl ether	73	5.827	5.820	(1.006)	410655	50.0000	51.1	
	44	1,2-Dichloroethane	62	5.913	5.921	(0.898)	314577	50.0000	51.2	
	45	Isobutyl Alcohol	43	6.070	6.071	(1.048)	79648	1000.00	914	
	46	Methylcyclohexane	83	6.456	6.457	(1.115)	230946	50.0000	50.8	
	47	Trichloroethene	95	6.499	6.493	(0.987)	170756	50.0000	54.5	
*	48	1,4-Difluorobenzene	114	6.585	6.586	(1.000)	503699	50.0000		
	49	Dibromomethane	93	7.114	7.107	(1.080)	114204	50.0000	52.8	
	50	1,2-Dichloropropane	63	7.264	7.265	(1.103)	136561	50.0000	49.2	
	51	Bromodichloromethane	83	7.386	7.386	(1.122)	272293	50.0000	54.0	
	52	Methyl Methacrylate	41	7.686	7.687	(1.167)	120162	50.0000	47.8	
	53	1,4-Dioxane	88	7.700	7.694	(1.169)	19097	1000.00	598	
	54	2-Chloroethylvinylether	63	8.265	8.259	(1.255)	71020	50.0000	44.4	
	55	cis-1,3-dichloropropene	75	8.294	8.294	(1.259)	289959	50.0000	56.0	
$	56	Toluene-D8	98	8.544	8.545	(1.297)	627117	50.0000	50.6	
	57	Toluene	92	8.616	8.616	(1.308)	329283	50.0000	52.3	
	58	Tetrachloroethene	164	9.123	9.124	(0.858)	116251	50.0000	54.4	
	59	4-methyl-2-pentanone	43	9.195	9.195	(1.396)	569741	250.000	266	
	60	trans-1,3-Dichloropropene	75	9.223	9.224	(1.401)	285477	50.0000	54.2	
	61	1,1,2-Trichloroethane	83	9.431	9.431	(1.432)	115423	50.0000	52.1	
	62	Ethyl Methacrylate	69	9.509	9.510	(1.444)	176036	50.0000	47.3	
	63	Dibromochloromethane	129	9.652	9.653	(0.907)	190136	50.0000	53.3	
	64	1,3-Dichloropropane	76	9.781	9.789	(0.919)	249603	50.0000	53.0	
	65	1,2-Dibromoethane	107	9.931	9.932	(1.508)	147583	50.0000	50.9	
M	66	Total Alkylbenzenes	100				4334952	50.0000	364	
	67	2-Hexanone	43	10.346	10.347	(0.972)	396070	250.000	249	
*	68	Chlorobenzene-D5	117	10.639	10.640	(1.000)	459807	50.0000		
	69	Chlorobenzene	112	10.661	10.661	(1.002)	360159	50.0000	50.9	
	70	Ethylbenzene	91	10.739	10.733	(1.009)	703907	50.0000	54.7	
	71	1,1,1,2-Tetrachloroethane	131	10.768	10.768	(1.012)	167475	50.0000	52.5	
	72	m+p-Xylenes	91	10.940	10.940	(1.028)	1117175	100.000	114	
	73	o-Xylene	91	11.504	11.505	(1.081)	572094	50.0000	53.6	
	74	Styrene	104	11.583	11.576	(1.089)	403818	50.0000	52.5	
	75	Bromoform	173	11.576	11.576	(1.088)	129038	50.0000	54.5	
	76	Isopropylbenzene	105	11.933	11.934	(0.869)	627235	50.0000	51.1	
$	77	P-Bromofluorobenzene	95	12.277	12.277	(1.864)	279187	50.0000	52.4	

Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7740.D
Report Date: 05-Nov-2018 13:32

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	78	Bromobenzene	156	12.384	12.392	(0.902)	166677	50.0000	48.8	
	79	cis-1,4-Dichloro-2-Butene	53	12.398	12.399	(0.903)	74443	50.0000	51.8	
	80	N-Propylbenzene	91	12.477	12.477	(0.909)	813466	50.0000	53.6	
	81	1,1,2,2-Tetrachloroethane	83	12.598	12.592	(0.918)	170442	50.0000	47.7	
	82	2-Chlorotoluene	91	12.648	12.649	(0.921)	505701	50.0000	51.6	
	83	1,2,3-Trichloropropane	75	12.741	12.735	(0.928)	167857	50.0000	49.0	
	84	1,3,5-Trimethylbenzene	105	12.756	12.756	(0.929)	569738	50.0000	51.5	
	85	trans-1,4-Dichloro-2-Butene	53	12.820	12.821	(0.934)	59908	50.0000	52.5	
	86	4-Chlorotoluene	91	12.870	12.871	(0.938)	539369	50.0000	52.1	
	87	tert-Butylbenzene	119	13.156	13.157	(0.958)	537894	50.0000	50.9	
	88	Pentachloroethane	165	13.156	13.157	(0.958)	100144	50.0000	51.9	
	89	1,2,4-Trimethylbenzene	105	13.249	13.250	(0.965)	580754	50.0000	51.9	
	90	sec-Butylbenzene	105	13.385	13.385	(0.975)	676145	50.0000	52.6	
	91	P-Isopropyltoluene	119	13.592	13.593	(0.990)	584186	50.0000	51.8	
	92	1,3-Dichlorobenzene	146	13.628	13.629	(0.993)	282934	50.0000	50.4	
*	93	1,4-Dichlorobenzene-D4	152	13.728	13.729	(1.000)	249085	50.0000		
	94	1,4-Dichlorobenzene	146	13.750	13.750	(1.002)	288138	50.0000	49.6	
	95	1,2,3-Trimethylbenzene	105	13.807	13.807	(1.006)	602356	50.0000	52.8	
	96	N-Butylbenzene	91	14.136	14.136	(1.030)	572769	50.0000	51.9	
	97	1,2-Dichlorobenzene	146	14.286	14.286	(1.041)	267554	50.0000	49.4	
	98	1,2-Dibromo-3-Chloropropane	75	15.330	15.337	(1.117)	38996	50.0000	46.9	
	99	1,3,5-Trichlorobenzene	180	15.380	15.380	(1.120)	209906	50.0000	50.7	
	100	Hexachlorobutadiene	225	16.209	16.210	(1.181)	102826	50.0000	52.2	
	101	1,2,4-Trichlorobenzene	180	16.216	16.216	(1.181)	181729	50.0000	51.7	
	102	Naphthalene	128	16.638	16.639	(1.212)	363719	50.0000	46.0	
M	103	1,2-Dichloroethylene (total)	96				282039	50.0000	93.0	
	104	1,2,3-Trichlorobenzene	180	16.874	16.875	(1.229)	166854	50.0000	46.6	
M	105	Xylenes (total)	91				1689269	150.000	168	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Date : 12-OCT-2018 08:11
Client ID:
Sample Info: WG238427-4,SL9735
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: HG/JR
Column diameter: 0.18
\\target_server\gg\chem\gcms-t.i\T101218.b\T7740.D
Y (x10^6)
Min
-Dichlorodifluoromethane (1.344)
-Chloromethane (1.480)
Vinyl chloride (1.537)
-Bromomethane (1.759)
-Chloroethane (1.852)
-Trichlorofluoromethane (1.952)
-Diethyl Ether (2.174)
-1,1-Dichloroethene (2.360)+
-Iodomethane (2.460)
-Acrolein (2.617)
-Allyl Chloride (2.732)
Acetone (2.875)
Methylene Chloride (2.825)
-trans-1,2-Dichloroethene (2.968)+
-Methyl tert-butyl ether (3.075)
-Tertiary-butyl alcohol (3.176)
-Acetonitrile (3.339)
-Di-isopropyl ether (3.468)
-Chloroprene (3.590)+
-Acrylonitrile (3.683)
-Ethyl tertiary-butyl ethe (3.911)+
-cis-1,2-Dichloroethene (4.283)
-2,2-Dichloropropane (4.433)
-Cyclohexane (4.555)+
-Chloroform (4.691)
-Carbon Tetrachloride (4.869)+
-Dibromofluoromethane (4.977)+
-1,1-Dichloropropene (5.198)+
-Benzene (5.592)
-Propionitrile (5.699)+
-Pentafluorobenzene (5.806)+
-1,2-Dichloroethane (5.921)
-Isobutyl Alcohol (6.071)
-Methylcyclohexane (6.493)+
1,4-Difluorobenzene (6.586)
-Dibromomethane (7.115)
-1,2-Dichloropropane (7.265)
-Bromodichloromethane (7.386)
-Methyl Methacrylate (7.687)+
-2-Chloroethylvinylether (8.294)+
-Toluene-D8 (8.545)
-Toluene (8.616)
-Tetrachloroethene (9.124)
4-Methyl-2-pentanone (9.195)+
-1,1,2-Trichloroethane (9.431)
-Ethyl Methacrylate (9.516)
-Dibromochloromethane (9.653)
-1,3-Dichloropropane (9.782)
-1,2-Dibromoethane (9.932)
-Total Alkylbenzenes (10.100)
-2-Hexanone (10.347)
-Chlorobenzene-D5 (10.647)+
-Ethylbenzene (10.740)+
m+p-Xylenes (10.940)
-o-Xylene (11.505)
-Styrene (11.576)+
-Isopropylbenzene (11.934)
-P-Bromofluorobenzene (12.277)
-Bromobenzene (12.406)+
-N-Propylbenzene (12.477)
-1,1,2,2-Tetrachloroethane (12.599)
-2-Chlorotoluene (12.649)
-1,2,3-Trichloropropane (12.756)+
-trans-1,4-Dichloro-2-Bute (12.821)
-4-Chlorotoluene (12.871)
-1,2,4-Trimethylbenzene (13.250)
-sec-Butylbenzene (13.406)
-tert-Butylbenzene (13.157)+
-P-Isopropyltoluene (13.593)+
-1,2,3-Trimethylbenzene (13.807)
1,4-Dichlorobenzene-D4 (13.736)+
-N-Butylbenzene (14.136)
-1,2-Dichlorobenzene (14.279)
-1,2-Dibromo-3-Chloropropa (15.337)
1,3,5-Trichlorobenzene (15.373)
-Hexachlorobutadiene (16.210)+
-Naphthalene (16.639)
1,2,4-Trichlorobenzene (16.885)

Data File: \\target_server\gg\chem\gcms-t.i\T101118B.b\TB757a.D

Date : 11-OCT-2018 09:35

Client ID:

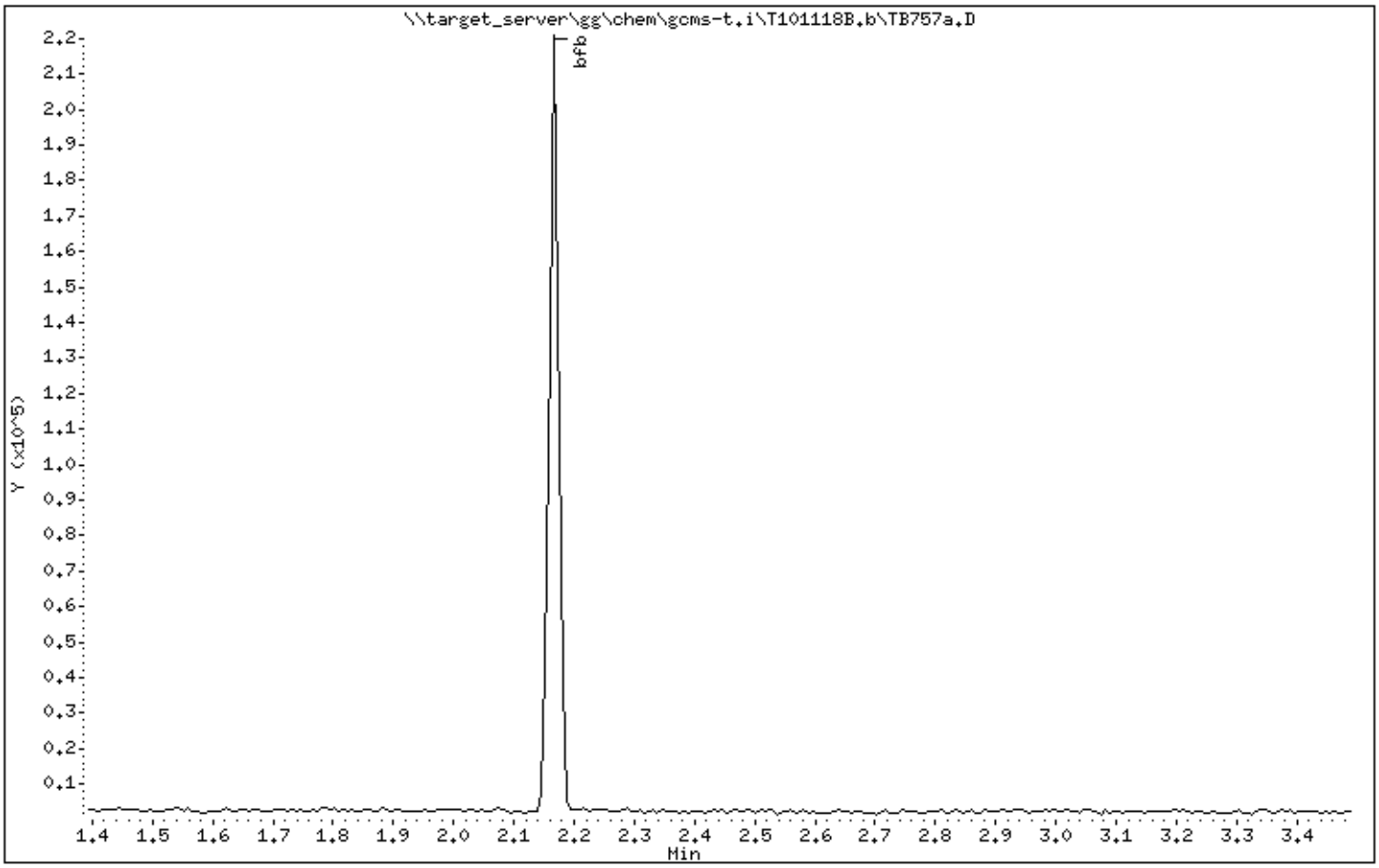
Instrument: gcms-t.i

Sample Info: WG238351-10,SL9735

Operator: HG/JR

Column phase: RTX-VMS

Column diameter: 0.18



Data File: \\target_server\gg\chem\gcms-t.i\T101118B.b\TB757a.D

Date : 11-OCT-2018 09:35

Client ID:

Instrument: gcms-t.i

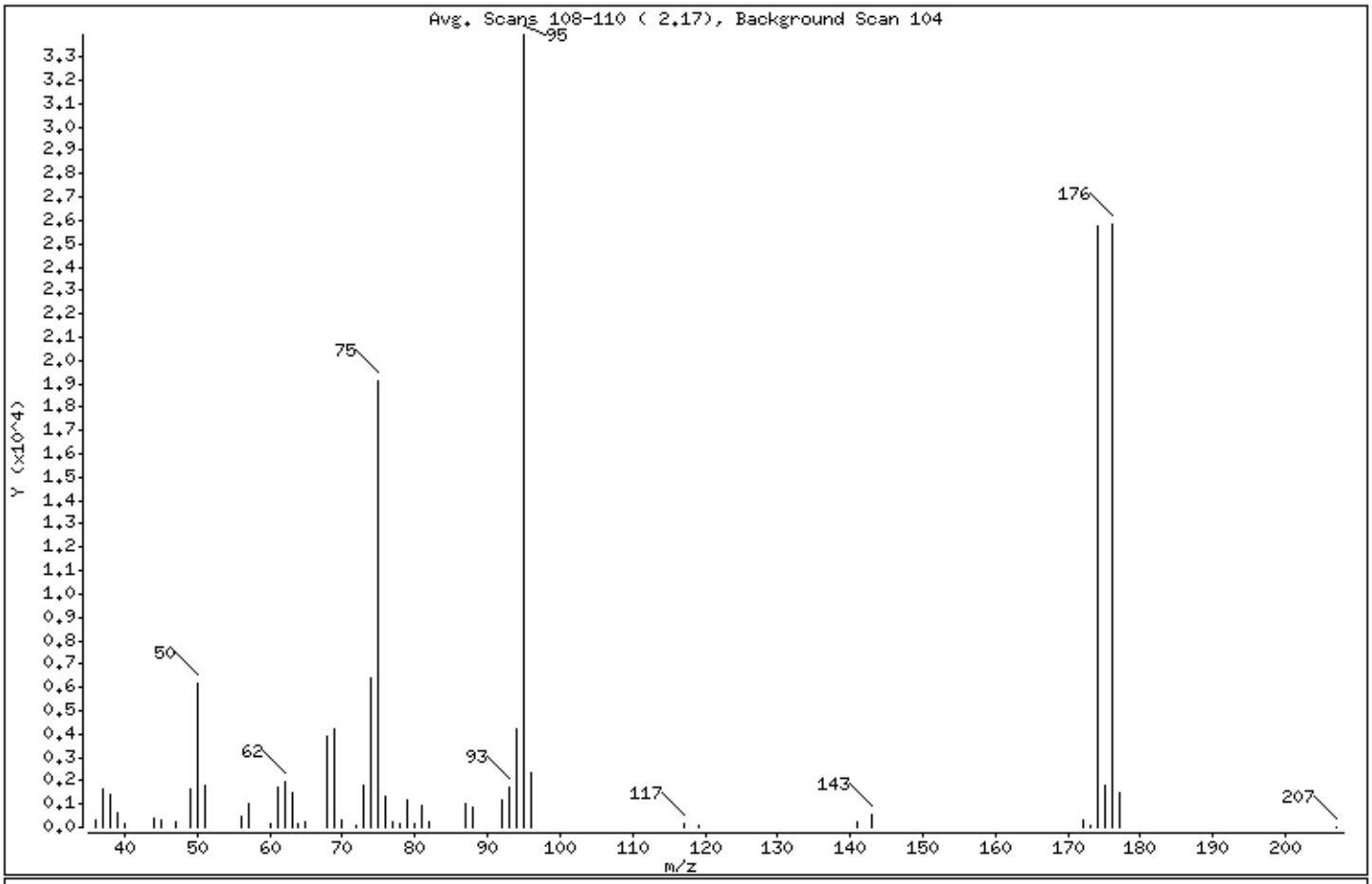
Sample Info: WG238351-10,SL9735

Operator: HG/JR

Column phase: RTX-VMS

Column diameter: 0.18

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	18.10
75	30.00 - 60.00% of mass 95	56.27
96	5.00 - 9.00% of mass 95	6.91
173	Less than 2.00% of mass 174	0.30 (0.40)
174	Greater than 50.00% of mass 95	75.80
175	5.00 - 9.00% of mass 174	5.23 (6.90)
176	95.00 - 101.00% of mass 174	76.15 (100.47)
177	5.00 - 9.00% of mass 176	4.32 (5.67)

Data File: \\target_server\gg\chem\gcms-t.i\T101118B.b\TB757a.D

Date : 11-OCT-2018 09:35

Client ID:

Instrument: gcms-t.i

Sample Info: WG238351-10,SL9735

Operator: HG/JR

Column phase: RTX-VMS

Column diameter: 0.18

Data File: TB757a.D
Spectrum: Avg. Scans 108-110 (2.17), Background Scan 104
Location of Maximum: 95.00
Number of points: 51

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	315	60.00	186	76.00	1354	96.00	2347
37.00	1643	61.00	1745	77.00	201	117.00	165
38.00	1379	62.00	1927	78.00	194	119.00	67
39.00	618	63.00	1518	79.00	1178	141.00	263
40.00	154	64.00	184	80.00	160	143.00	532
44.00	401	65.00	257	81.00	957	172.00	322
45.00	346	68.00	3876	82.00	241	173.00	103
47.00	198	69.00	4225	87.00	1005	174.00	25736
49.00	1671	70.00	292	88.00	862	175.00	1776
50.00	6144	72.00	77	92.00	1192	176.00	25856
51.00	1785	73.00	1782	93.00	1704	177.00	1466
56.00	493	74.00	6409	94.00	4226	207.00	28
57.00	1018	75.00	19104	95.00	33952		

Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\TB758a.D

Date : 12-OCT-2018 07:50

Client ID:

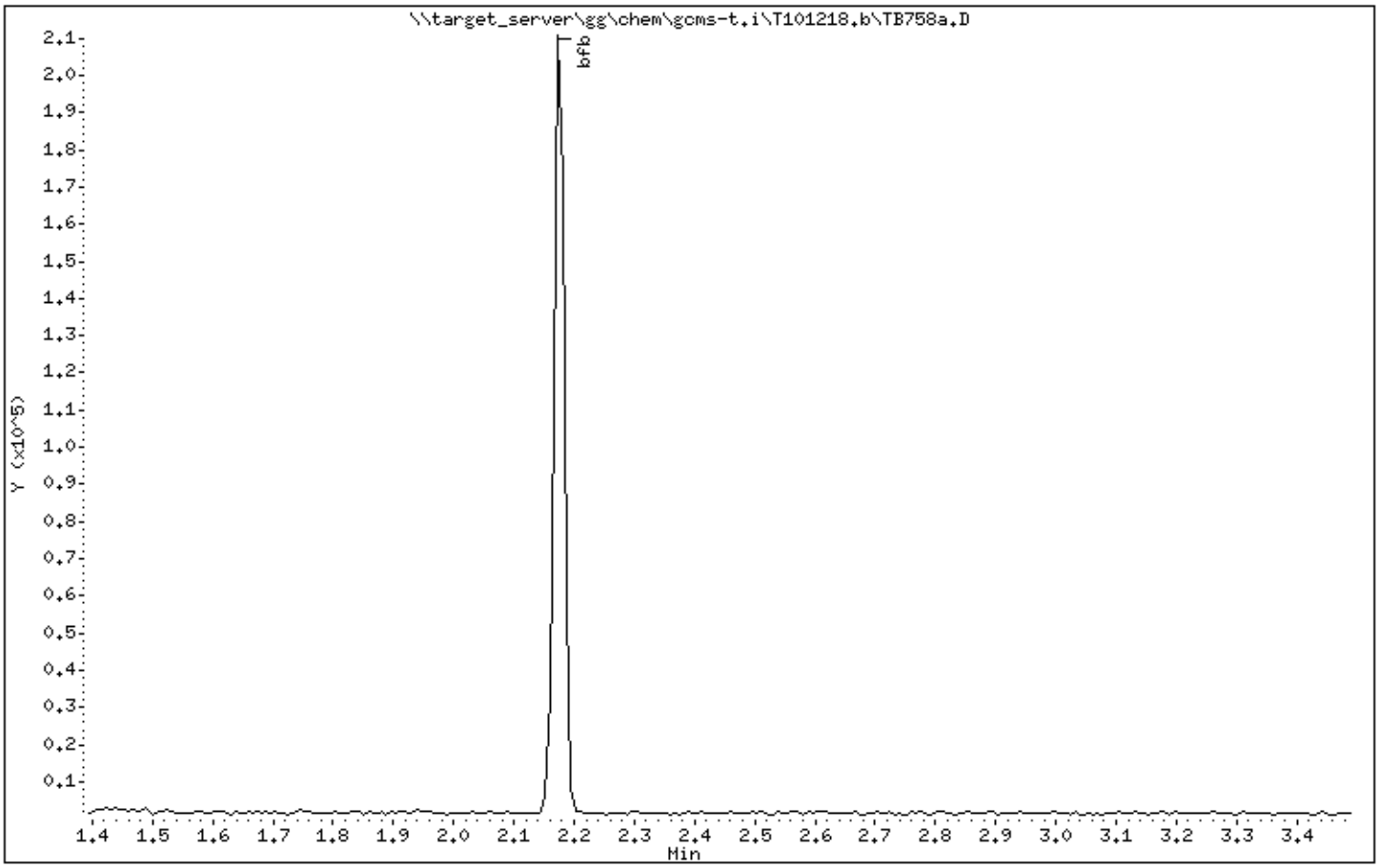
Instrument: gcms-t.i

Sample Info: WG238427-3,SL9735

Operator: HG/JR

Column phase: RTX-VMS

Column diameter: 0.18



Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\TB758a.D

Date : 12-OCT-2018 07:50

Client ID:

Instrument: gcms-t.i

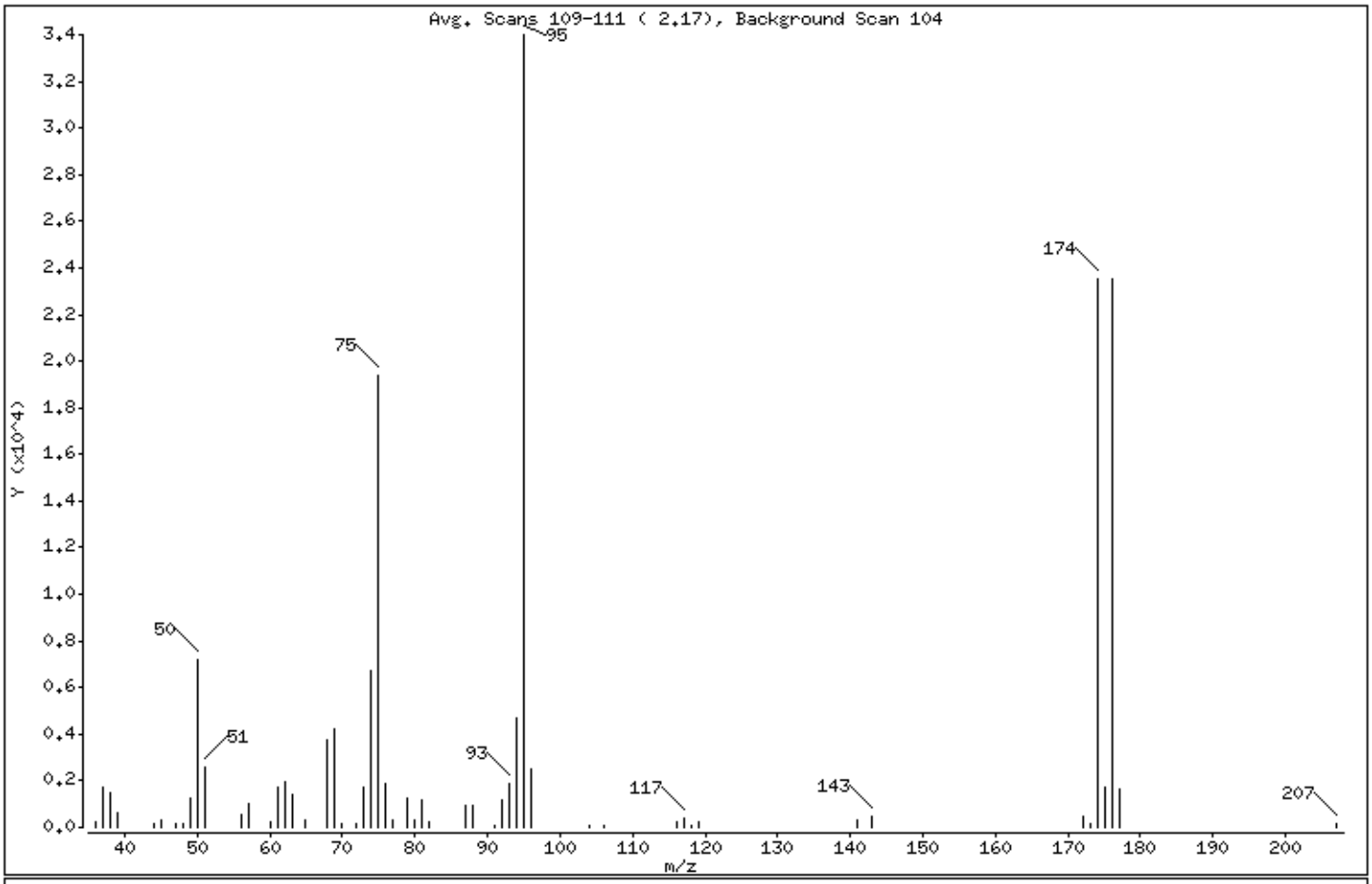
Sample Info: WG238427-3,SL9735

Operator: HG/JR

Column phase: RTX-VMS

Column diameter: 0.18

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	21.16
75	30.00 - 60.00% of mass 95	57.06
96	5.00 - 9.00% of mass 95	7.26
173	Less than 2.00% of mass 174	0.54 (0.78)
174	Greater than 50.00% of mass 95	69.25
175	5.00 - 9.00% of mass 174	5.04 (7.28)
176	95.00 - 101.00% of mass 174	69.15 (99.86)
177	5.00 - 9.00% of mass 176	4.76 (6.88)

Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\TB758a.D

Date : 12-OCT-2018 07:50

Client ID:

Instrument: gcms-t.i

Sample Info: WG238427-3,SL9735

Operator: HG/JR

Column phase: RTX-VMS

Column diameter: 0.18

Data File: TB758a.D
Spectrum: Avg. Scans 109-111 (2.17), Background Scan 104
Location of Maximum: 95.00
Number of points: 54

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	251	61.00	1684	80.00	346	117.00	355
37.00	1692	62.00	1967	81.00	1145	118.00	70
38.00	1456	63.00	1395	82.00	199	119.00	198
39.00	604	65.00	296	87.00	955	141.00	279
44.00	124	68.00	3777	88.00	952	143.00	507
45.00	276	69.00	4234	91.00	76	172.00	471
47.00	179	70.00	191	92.00	1171	173.00	183
48.00	177	72.00	158	93.00	1888	174.00	23544
49.00	1269	73.00	1717	94.00	4711	175.00	1715
50.00	7195	74.00	6696	95.00	34000	176.00	23512
51.00	2555	75.00	19400	96.00	2467	177.00	1617
56.00	562	76.00	1838	104.00	105	207.00	135
57.00	980	77.00	294	106.00	75		
60.00	218	79.00	1283	116.00	263		

Raw QC Data Section

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG238427-2
Client ID: Method Blank Sample
Project:
SDG: SL9735
Lab File ID: T7743.D

Sample Date:
Received Date:
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Dichlorodifluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Chloromethane	U	2.0	ug/L	1	2	2.0	0.36
Vinyl Chloride	U	2.0	ug/L	1	2	2.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	2.0	ug/L	1	2	2.0	0.55
Trichlorofluoromethane	U	2.0	ug/L	1	2	2.0	0.24
Diethyl Ether	U	1.0	ug/L	1	1	1.0	0.40
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
Methyl tert-butyl Ether	U	1.0	ug/L	1	1	1.0	0.36
Di-Isopropyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
Ethyl Tertiary-Butyl Ether	U	1.0	ug/L	1	1	1.0	0.23
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
2,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromochloromethane	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
Tetrahydrofuran	U	5.0	ug/L	1	5	5.0	1.7
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
1,1-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.21
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
Tertiary-Amyl Methyl Ether	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
Dibromomethane	U	1.0	ug/L	1	1	1.0	0.46
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
1,4-Dioxane	U	100	ug/L	1	100	100	8.8

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Tel:(207) 874-2400 Fax:(207) 775-4029
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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG238427-2
Client ID: Method Blank Sample
Project:
SDG: SL9735
Lab File ID: T7743.D

Sample Date:
Received Date:
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
1,3-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.22
1,2-Dibromoethane	U	1.0	ug/L	1	1	1.0	0.22
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,1,1,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.19
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23
Isopropylbenzene	U	1.0	ug/L	1	1	1.0	0.23
Bromobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Propylbenzene	U	1.0	ug/L	1	1	1.0	0.26
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
1,3,5-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.20
2-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.20
1,2,3-Trichloropropane	U	1.0	ug/L	1	1	1.0	0.19
4-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.26
tert-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.31
1,2,4-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.19
P-Isopropyltoluene	U	1.0	ug/L	1	1	1.0	0.25
1,3-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.26
1,4-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.24
N-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.23
sec-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.21
1,2-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.15
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	1	1	1.0	0.50
Hexachlorobutadiene	U	1.0	ug/L	1	1	1.0	0.52

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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG238427-2
Client ID: Method Blank Sample
Project:
SDG: SL9735
Lab File ID: T7743.D

Sample Date:
Received Date:
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,2,4-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.37
Naphthalene	U	1.0	ug/L	1	1	1.0	0.30
1,2,3-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.27
P-Bromofluorobenzene		100.	%				
Toluene-d8		102.	%				
1,2-Dichloroethane-d4		118.	%				
Dibromofluoromethane		111.	%				

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Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7743.D
Report Date: 05-Nov-2018 13:33

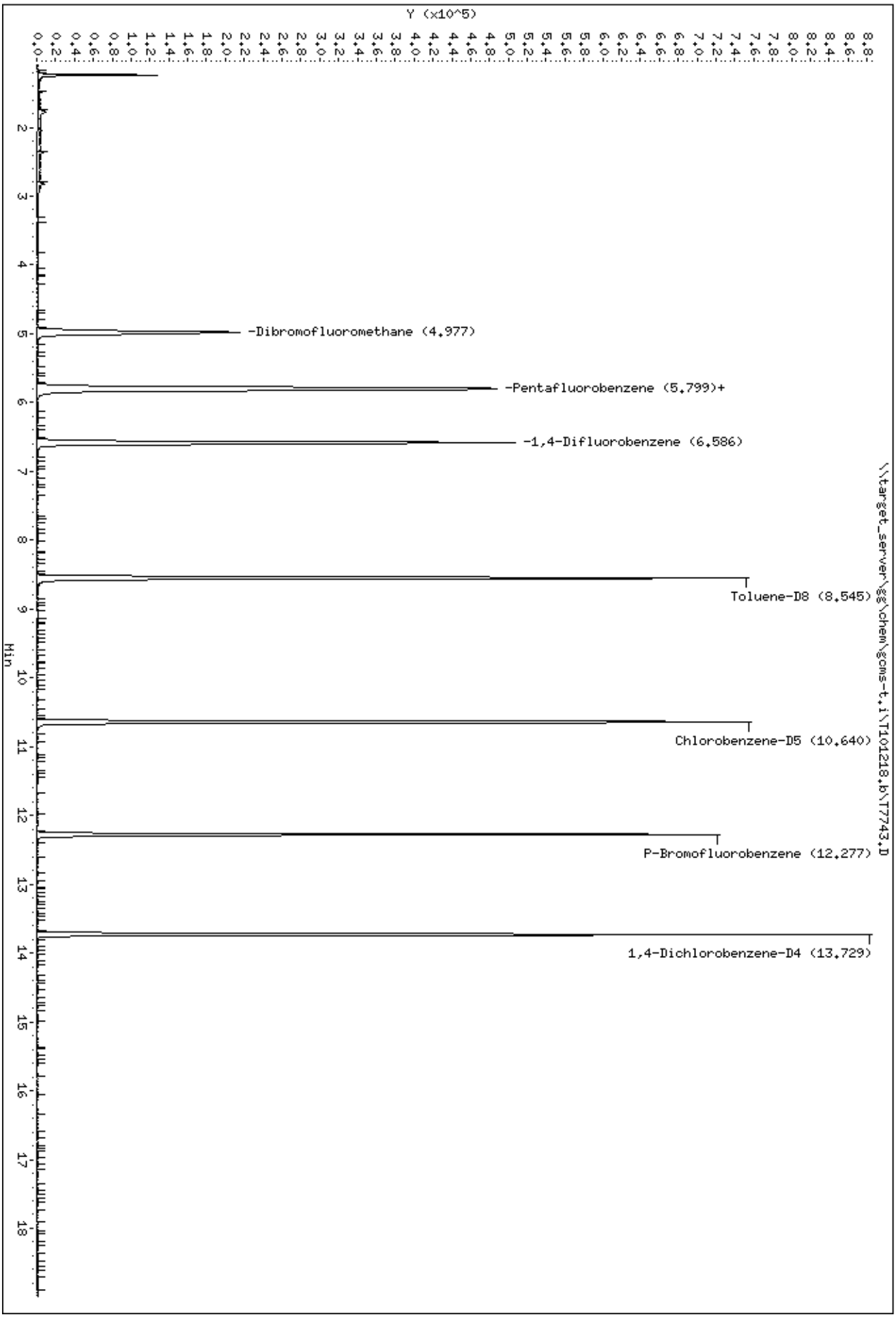
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T101218.b\T7743.D
Lab Smp Id: WG238427-2 Client Smp ID: WG238427-Blank
Inj Date : 12-OCT-2018 10:15 MS Autotune Date: 31-AUG-2018 16:19
Operator : HG/JR Inst ID: gcms-t.i
Smp Info : WG238427-2,SL9735
Misc Info : WG238427,WG238351-4,SL9735-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T101218.b\T8A05(56)D.m
Meth Date : 05-Nov-2018 13:31 tcote Quant Type: ISTD
Cal Date : 11-OCT-2018 12:28 Cal File: T7724.D
Als bottle: 4 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
$ 34 Dibromofluoromethane	113	4.976	4.977	(0.859)	210364	55.5106	55.5	
* 41 Pentafluorobenzene	168	5.791	5.785	(1.000)	294724	50.0000		
$ 42 1,2-Dichloroethane-D4	65	5.813	5.813	(1.004)	324795	59.2698	59.3	
* 48 1,4-Difluorobenzene	114	6.585	6.586	(1.000)	477789	50.0000		
$ 56 Toluene-D8	98	8.544	8.545	(1.297)	601323	51.1265	51.1	
* 68 Chlorobenzene-D5	117	10.639	10.640	(1.000)	419739	50.0000		
$ 77 P-Bromofluorobenzene	95	12.277	12.277	(1.864)	252504	50.0017	50.0	
* 93 1,4-Dichlorobenzene-D4	152	13.728	13.729	(1.000)	207725	50.0000		


Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7743.D
Date : 12-OCT-2018 10:15
Client ID: WG238427-Blank
Sample Info: WG238427-2,SL9735
Instrument: gcms-t.i
Y (x10^5)
Min
-Dibromofluoromethane (4.977)
-Pentafluorobenzene (5.799)+
-1,4-Difluorobenzene (6.586)
Toluene-D8 (8.545)
Chlorobenzene-D5 (10.640)
P-Bromofluorobenzene (12.277)
1,4-Dichlorobenzene-D4 (13.729)
\\target_server\gg\chem\gcms-t.i\T101218.b\T7743.D

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ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG238427-1
Client ID: LCS
Project:
SDG: SL9735
LCS File ID: T7741.D

Sample Date:
Received Date:
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Dichlorodifluoromethane	* 165.	50.0	82.4	ug/L	29-164
Chloromethane	* 130.	50.0	65.2	ug/L	59-123
Vinyl Chloride	125.	50.0	62.5	ug/L	64-131
Bromomethane	109.	50.0	54.3	ug/L	57-135
Chloroethane	121.	50.0	60.5	ug/L	53-157
Trichlorofluoromethane	115.	50.0	57.6	ug/L	70-149
Diethyl Ether	98.8	50.0	49.4	ug/L	78-124
1,1-Dichloroethene	107.	50.0	53.4	ug/L	88-127
Carbon Disulfide	110.	50.0	55.0	ug/L	71-129
Methylene Chloride	105.	50.0	52.5	ug/L	72-129
Acetone	94.0	50.0	47.0	ug/L	62-172
trans-1,2-Dichloroethene	88.4	50.0	44.2	ug/L	78-125
Methyl tert-butyl Ether	110.	50.0	54.8	ug/L	81-125
Di-Isopropyl Ether	105.	50.0	52.5	ug/L	81-123
1,1-Dichloroethane	103.	50.0	51.7	ug/L	76-130
Ethyl Tertiary-Butyl Ether	107.	50.0	53.6	ug/L	85-119
cis-1,2-Dichloroethene	99.8	50.0	49.9	ug/L	85-123
2,2-Dichloropropane	108.	50.0	54.1	ug/L	70-132
Bromochloromethane	111.	50.0	55.7	ug/L	85-117
Chloroform	102.	50.0	51.2	ug/L	78-128
Carbon Tetrachloride	113.	50.0	56.5	ug/L	87-126
Tetrahydrofuran	98.6	50.0	49.3	ug/L	74-123
1,1,1-Trichloroethane	105.	50.0	52.3	ug/L	77-129
1,1-Dichloropropene	107.	50.0	53.7	ug/L	87-118
2-Butanone	106.	50.0	53.1	ug/L	71-132
Benzene	104.	50.0	51.9	ug/L	86-116
Tertiary-Amyl Methyl Ether	103.	50.0	51.3	ug/L	80-121
1,2-Dichloroethane	100.	50.0	50.2	ug/L	81-125
Trichloroethene	107.	50.0	53.3	ug/L	79-121
Dibromomethane	105.	50.0	52.5	ug/L	85-117
1,2-Dichloropropane	102.	50.0	51.1	ug/L	84-118
Bromodichloromethane	113.	50.0	56.5	ug/L	85-122
cis-1,3-Dichloropropene	107.	50.0	53.4	ug/L	83-119
1,4-Dioxane	71.7	1000	717.	ug/L	10-149
Toluene	106.	50.0	52.8	ug/L	84-118

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
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ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG238427-1
Client ID: LCS
Project:
SDG: SL9735
LCS File ID: T7741.D

Sample Date:
Received Date:
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
4-Methyl-2-Pentanone	107.	50.0	53.6	ug/L	83-122
Tetrachloroethene	107.	50.0	53.3	ug/L	47-155
trans-1,3-Dichloropropene	108.	50.0	53.9	ug/L	85-135
1,1,2-Trichloroethane	105.	50.0	52.6	ug/L	84-115
Dibromochloromethane	109.	50.0	54.7	ug/L	85-119
1,3-Dichloropropane	103.	50.0	51.5	ug/L	80-119
1,2-Dibromoethane	101.	50.0	50.4	ug/L	84-116
2-Hexanone	94.0	50.0	47.0	ug/L	80-124
Chlorobenzene	102.	50.0	51.1	ug/L	89-113
Ethylbenzene	110.	50.0	55.0	ug/L	88-113
1,1,1,2-Tetrachloroethane	106.	50.0	52.9	ug/L	88-118
m+p-Xylenes	114.	100.	114.	ug/L	88-116
o-Xylene	105.	50.0	52.7	ug/L	90-116
Styrene	104.	50.0	52.2	ug/L	88-117
Bromoform	111.	50.0	55.7	ug/L	86-117
Isopropylbenzene	109.	50.0	54.6	ug/L	96-136
Bromobenzene	97.8	50.0	48.9	ug/L	84-113
N-Propylbenzene	108.	50.0	54.2	ug/L	83-121
1,1,2,2-Tetrachloroethane	101.	50.0	50.4	ug/L	79-121
1,3,5-Trimethylbenzene	104.	50.0	52.2	ug/L	80-123
2-Chlorotoluene	107.	50.0	53.3	ug/L	81-120
1,2,3-Trichloropropane	98.4	50.0	49.2	ug/L	77-120
4-Chlorotoluene	108.	50.0	53.8	ug/L	81-122
tert-Butylbenzene	103.	50.0	51.5	ug/L	84-121
1,2,4-Trimethylbenzene	107.	50.0	53.4	ug/L	83-118
P-Isopropyltoluene	105.	50.0	52.4	ug/L	88-121
1,3-Dichlorobenzene	105.	50.0	52.5	ug/L	86-110
1,4-Dichlorobenzene	101.	50.0	50.3	ug/L	86-111
N-Butylbenzene	106.	50.0	52.8	ug/L	78-121
sec-Butylbenzene	108.	50.0	53.9	ug/L	82-122
1,2-Dichlorobenzene	100.	50.0	50.1	ug/L	86-112
1,2-Dibromo-3-Chloropropane	97.0	50.0	48.5	ug/L	67-124
Hexachlorobutadiene	104.	50.0	52.0	ug/L	73-113
1,2,4-Trichlorobenzene	104.	50.0	52.0	ug/L	76-126
Naphthalene	94.6	50.0	47.3	ug/L	62-126

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LCS Recovery Report

Client:
Lab ID: WG238427-1
Client ID: LCS
Project:
SDG: SL9735
LCS File ID: T7741.D

Sample Date:
Received Date:
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-NOV-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
1,2,3-Trichlorobenzene	98.0	50.0	49.0	ug/L	70-122
P-Bromofluorobenzene	105.				56-133
Toluene-d8	101.				65-128
1,2-Dichloroethane-d4	99.8				67-135
Dibromofluoromethane	96.8				68-128

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Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7741.D
Report Date: 05-Nov-2018 13:33

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T101218.b\T7741.D
Lab Smp Id: WG238427-1
Inj Date : 12-OCT-2018 08:53 MS Autotune Date: 31-AUG-2018 16:19
Operator : HG/JR Inst ID: gcms-t.i
Smp Info : WG238427-1,SL9735
Misc Info : WG238427,WG238351-4,SL9735-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T101218.b\T8A05(56)D.m
Meth Date : 05-Nov-2018 13:31 tcote Quant Type: ISTD
Cal Date : 11-OCT-2018 12:28 Cal File: T7724.D
Als bottle: 2 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.344	1.344	(0.232)	254588	82.3567	82.4(R)	
2	Chloromethane	50	1.480	1.480	(0.256)	174897	65.1671	65.2	
3	Vinyl chloride	62	1.537	1.537	(0.265)	204875	62.4797	62.5	
4	Bromomethane	94	1.759	1.759	(0.304)	128062	54.3331	54.3	
5	Chloroethane	64	1.852	1.852	(0.320)	121851	60.4891	60.5	
6	Trichlorofluoromethane	101	1.952	1.952	(0.337)	385156	57.6025	57.6	
7	Diethyl Ether	59	2.173	2.174	(0.375)	133965	49.4172	49.4	
8	1,1-Dichloroethene	96	2.338	2.331	(0.404)	164998	53.3996	53.4	
9	Freon-113	151	2.359	2.360	(0.407)	143202	54.5116	54.5	
10	Carbon Disulfide	76	2.367	2.360	(0.409)	448086	54.9544	55.0	
11	Iodomethane	142	2.459	2.453	(0.425)	156022	48.8826	48.9	
12	Acrolein	56	2.610	2.617	(0.451)	121461	242.251	242	
13	Allyl Chloride	41	2.724	2.724	(0.470)	227037	51.2606	51.3	
14	Methylene Chloride	84	2.824	2.825	(0.488)	191275	52.5079	52.5	
15	Acetone	43	2.874	2.875	(0.496)	47636	47.0215	47.0	
16	trans-1,2-Dichloroethene	96	2.967	2.968	(0.512)	146495	44.1597	44.2	
17	Methyl Acetate	43	2.989	2.989	(0.516)	103680	43.0068	43.0	
18	Methyl tert-butyl ether	73	3.074	3.075	(0.531)	501518	54.8450	54.8	
19	Tertiary-butyl alcohol	59	3.174	3.182	(0.548)	69743	220.191	220	
20	Acetonitrile	41	3.339	3.339	(0.577)	136706	457.664	458	
21	Di-isopropyl ether	45	3.468	3.468	(0.599)	430480	52.4744	52.5	
22	Chloroprene	53	3.582	3.582	(0.619)	259247	52.3191	52.3	
23	1,1-Dichloroethane	63	3.611	3.611	(0.623)	320385	51.7075	51.7	
24	Acrylonitrile	52	3.682	3.683	(0.636)	204615	248.180	248	

Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7741.D
Report Date: 05-Nov-2018 13:33

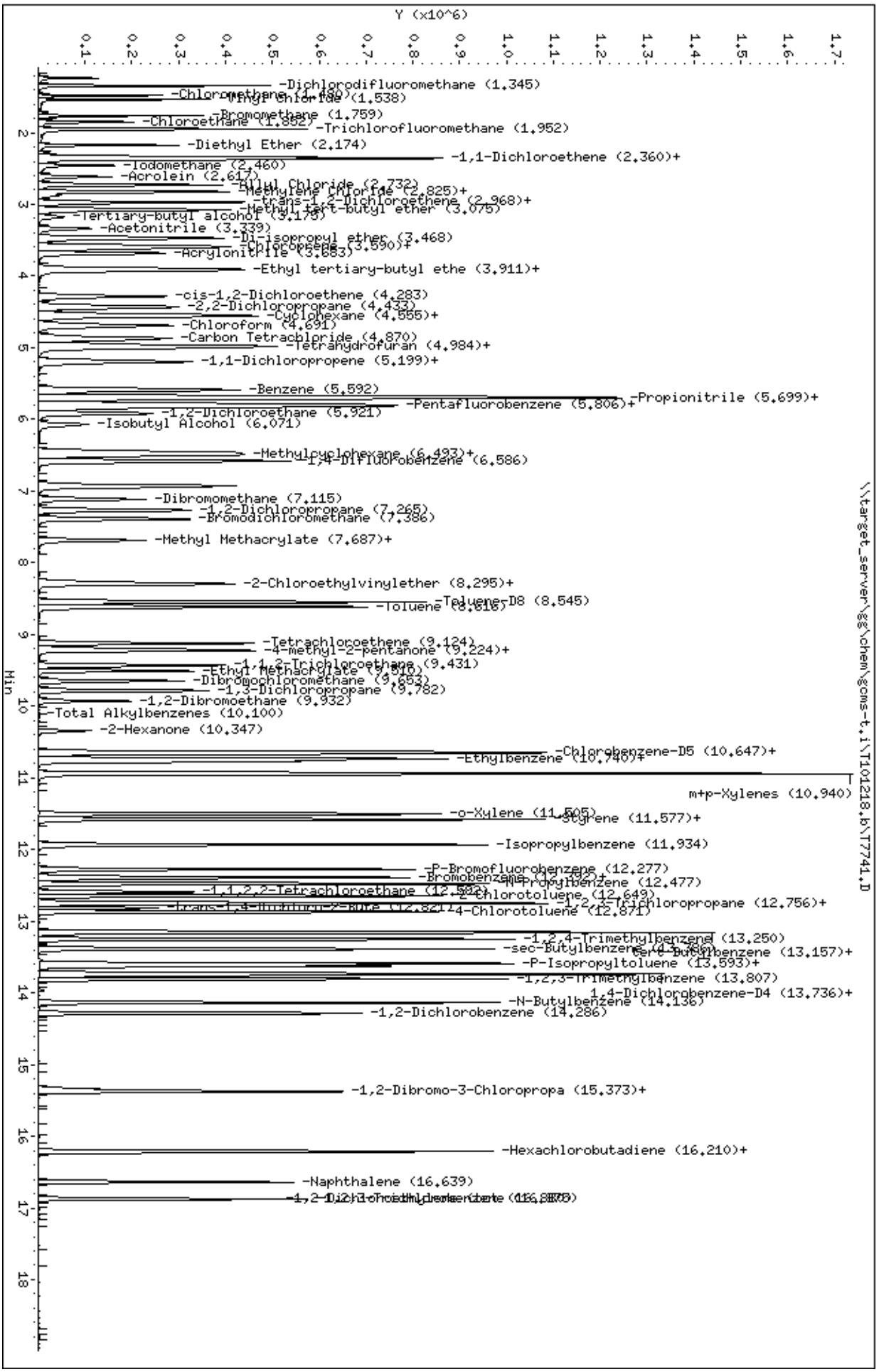
		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	25	Ethyl tertiary-butyl ether	59	3.904	3.904	(0.674)	481233	53.5937	53.6	
	26	Vinyl Acetate	43	3.925	3.926	(0.596)	324582	54.1505	54.2	
	27	cis-1,2-Dichloroethene	96	4.290	4.283	(0.741)	153491	49.9405	49.9	
	28	2,2-Dichloropropane	77	4.433	4.426	(0.765)	342543	54.0966	54.1	
	29	Cyclohexane	56	4.547	4.548	(0.785)	216802	57.3442	57.3	
	30	Bromochloromethane	128	4.569	4.562	(0.789)	71996	55.7281	55.7	
	31	Chloroform	83	4.690	4.691	(0.810)	372683	51.1860	51.2	
	32	Carbon Tetrachloride	117	4.869	4.869	(0.739)	325992	56.5126	56.5	
	33	Tetrahydrofuran	42	4.941	4.934	(0.853)	32128	49.3382	49.3	
$	34	Dibromofluoromethane	113	4.976	4.977	(0.859)	217797	48.3919	48.4	
	35	1,1,1-Trichloroethane	97	4.991	4.984	(0.862)	364572	52.2645	52.3	
	36	1,1-Dichloropropene	75	5.191	5.191	(0.788)	246634	53.7328	53.7	
	37	2-Butanone	43	5.212	5.206	(0.900)	57978	53.1400	53.1	
	38	Benzene	78	5.591	5.585	(0.849)	561509	51.9012	51.9	
	39	Propionitrile	54	5.670	5.670	(0.979)	168497	484.043	484	
	40	Methacrylonitrile	41	5.699	5.692	(0.984)	858234	522.507	522	
*	41	Pentafluorobenzene	168	5.791	5.785	(1.000)	350025	50.0000		
$	42	1,2-Dichloroethane-D4	65	5.813	5.813	(1.004)	324892	49.9206	49.9	
	43	Tertiary-amyl methyl ether	73	5.820	5.820	(1.005)	433015	51.2939	51.3	
	44	1,2-Dichloroethane	62	5.920	5.921	(0.899)	323721	50.2087	50.2	
	45	Isobutyl Alcohol	43	6.070	6.071	(1.048)	89144	975.778	976	
	46	Methylcyclohexane	83	6.464	6.457	(1.116)	241846	50.6694	50.7	
	47	Trichloroethene	95	6.499	6.493	(0.987)	175454	53.3257	53.3	
*	48	1,4-Difluorobenzene	114	6.585	6.586	(1.000)	528705	50.0000		
	49	Dibromomethane	93	7.114	7.107	(1.080)	119209	52.5250	52.5	
	50	1,2-Dichloropropane	63	7.264	7.265	(1.103)	148714	51.0920	51.1	
	51	Bromodichloromethane	83	7.386	7.386	(1.122)	298656	56.4644	56.5	
	52	Methyl Methacrylate	41	7.686	7.687	(1.167)	128864	48.8424	48.8	
	53	1,4-Dioxane	88	7.701	7.694	(1.169)	24066	717.472	717	
	54	2-Chloroethylvinylether	63	8.265	8.259	(1.255)	75685	45.0467	45.0	
	55	cis-1,3-dichloropropene	75	8.294	8.294	(1.259)	290244	53.3621	53.4	
$	56	Toluene-D8	98	8.544	8.545	(1.297)	655440	50.3609	50.4	
	57	Toluene	92	8.616	8.616	(1.308)	348534	52.7826	52.8	
	58	Tetrachloroethene	164	9.123	9.124	(0.858)	117734	53.2654	53.3	
	59	4-methyl-2-pentanone	43	9.195	9.195	(1.396)	120464	53.5647	53.6	
	60	trans-1,3-Dichloropropene	75	9.224	9.224	(1.401)	297760	53.8952	53.9	
	61	1,1,2-Trichloroethane	83	9.431	9.431	(1.432)	122404	52.6103	52.6	
	62	Ethyl Methacrylate	69	9.510	9.510	(1.444)	190608	48.7681	48.8	
	63	Dibromochloromethane	129	9.645	9.653	(0.907)	202069	54.6933	54.7	
	64	1,3-Dichloropropane	76	9.781	9.789	(0.919)	251149	51.4929	51.5	
	65	1,2-Dibromoethane	107	9.931	9.932	(1.508)	153324	50.4112	50.4	
M	66	Total Alkylbenzenes	100				4508469	370.401	370	
	67	2-Hexanone	43	10.346	10.347	(0.972)	80927	47.0573	47.0	
*	68	Chlorobenzene-D5	117	10.639	10.640	(1.000)	475942	50.0000		
	69	Chlorobenzene	112	10.661	10.661	(1.002)	374704	51.1298	51.1	
	70	Ethylbenzene	91	10.732	10.733	(1.009)	732055	54.9725	55.0	
	71	1,1,1,2-Tetrachloroethane	131	10.768	10.768	(1.012)	174480	52.8842	52.9	
	72	m+p-Xylenes	91	10.940	10.940	(1.028)	1149248	113.810	114	
	73	o-Xylene	91	11.505	11.505	(1.081)	582536	52.7296	52.7	
	74	Styrene	104	11.583	11.576	(1.089)	415939	52.2523	52.2	
	75	Bromoform	173	11.576	11.576	(1.088)	136525	55.7330	55.7	
	76	Isopropylbenzene	105	11.934	11.934	(0.869)	685269	54.6348	54.6	
$	77	P-Bromofluorobenzene	95	12.277	12.277	(1.864)	293068	52.4455	52.4	
	78	Bromobenzene	156	12.384	12.392	(0.902)	170673	48.9068	48.9	

Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7741.D
Report Date: 05-Nov-2018 13:33

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	79 cis-1,4-Dichloro-2-Butene	53	12.398	12.399	(0.903)	76659	52.1985	52.2	
	80 N-Propylbenzene	91	12.477	12.477	(0.909)	841644	54.2283	54.2	
	81 1,1,2,2-Tetrachloroethane	83	12.591	12.592	(0.917)	183999	50.3530	50.4	
	82 2-Chlorotoluene	91	12.649	12.649	(0.921)	533871	53.3153	53.3	
	83 1,2,3-Trichloropropane	75	12.734	12.735	(0.928)	172414	49.2110	49.2	
	84 1,3,5-Trimethylbenzene	105	12.756	12.756	(0.929)	590909	52.2404	52.2	
	85 trans-1,4-Dichloro-2-Butene	53	12.820	12.821	(0.934)	62656	53.6590	53.6	
	86 4-Chlorotoluene	91	12.870	12.871	(0.938)	569804	53.8086	53.8	
	87 tert-Butylbenzene	119	13.156	13.157	(0.958)	556289	51.4994	51.5	
	88 Pentachloroethane	165	13.156	13.157	(0.958)	99026	50.1475	50.1	
	89 1,2,4-Trimethylbenzene	105	13.249	13.250	(0.965)	611308	53.3957	53.4	
	90 sec-Butylbenzene	105	13.385	13.385	(0.975)	708901	53.8974	53.9	
	91 P-Isopropyltoluene	119	13.592	13.593	(0.990)	603409	52.3688	52.4	
	92 1,3-Dichlorobenzene	146	13.628	13.629	(0.993)	301845	52.5472	52.5	
*	93 1,4-Dichlorobenzene-D4	152	13.728	13.729	(1.000)	254792	50.0000		
	94 1,4-Dichlorobenzene	146	13.750	13.750	(1.002)	298934	50.3455	50.3	
	95 1,2,3-Trimethylbenzene	105	13.807	13.807	(1.006)	617405	52.8775	52.9	
	96 N-Butylbenzene	91	14.136	14.136	(1.030)	596009	52.7712	52.8	
	97 1,2-Dichlorobenzene	146	14.286	14.286	(1.041)	277348	50.0782	50.1	
	98 1,2-Dibromo-3-Chloropropane	75	15.337	15.337	(1.117)	41222	48.4989	48.5	
	99 1,3,5-Trichlorobenzene	180	15.380	15.380	(1.120)	216974	51.2487	51.2	
	100 Hexachlorobutadiene	225	16.209	16.210	(1.181)	104743	52.0283	52.0	
	101 1,2,4-Trichlorobenzene	180	16.217	16.216	(1.181)	187222	52.0559	52.0	
	102 Naphthalene	128	16.638	16.639	(1.212)	382797	47.2949	47.3	
M	103 1,2-Dichloroethylene (total)	96				299986	94.1002	94.1	
	104 1,2,3-Trichlorobenzene	180	16.874	16.875	(1.229)	179463	48.9522	49.0	
M	105 Xylenes (total)	91				1731784	166.540	166	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.


Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7741.D
Date : 12-OCT-2018 08:53
Client ID:
Sample Info: WG238427-1,SL9735
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: HG/JR
Column diameter: 0.18
\\target_server\gg\chem\gcms-t.i\T101218.b\T7741.D
Y (x10^6)
Min
-Dichlorodifluoromethane (1.345)
-Chloromethane (1.480)
Vinyl Chloride (1.538)
-Bromomethane (1.759)
-Chloroethane (1.852)
-Trichlorofluoromethane (1.952)
-Diethyl Ether (2.174)
-1,1-Dichloroethene (2.360)+
-Iodomethane (2.460)
-Acrolein (2.617)
-Allyl Chloride (2.732)
-Methylene Chloride (2.825)+
-trans-1,2-Dichloroethene (2.968)+
-Methyl tert-butyl ether (3.075)
-Tertiary-butyl alcohol (3.176)
-Acetonitrile (3.339)
-Di-isopropyl ether (3.468)
-Chloroprene (3.590)+
-Acrylonitrile (3.683)
-Ethyl tertiary-butyl ethe (3.911)+
-cis-1,2-Dichloroethene (4.283)
-2,2-Dichloropropane (4.433)
-Cyclohexane (4.555)+
-Chloroform (4.691)
-Carbon Tetrachloride (4.870)
-Tetrahydrofuran (4.984)+
-1,1-Dichloropropene (5.199)+
-Benzene (5.592)
-Propionitrile (5.699)+
-Pentafluorobenzene (5.806)+
-1,2-Dichloroethane (5.921)
-Isobutyl Alcohol (6.071)
-Methylcyclohexane (6.493)+
1,4-Difluorobenzene (6.586)
-Dibromomethane (7.115)
-1,2-Dichloropropane (7.265)
-Bromodichloromethane (7.386)
-Methyl Methacrylate (7.687)+
-2-Chloroethylvinylether (8.295)+
-Toluene-D8 (8.545)
-Toluene (8.616)
-Tetrachloroethene (9.124)
-4-methyl-2-pentanone (9.224)+
-1,1,2-Trichloroethane (9.431)
-Ethyl Methacrylate (9.516)
-Dibromochloromethane (9.653)
-1,3-Dichloropropane (9.782)
-1,2-Dibromoethane (9.932)
-Total Alkylbenzenes (10.100)
-2-Hexanone (10.347)
-Chlorobenzene-D5 (10.647)+
-Ethylbenzene (10.740)+
m+p-Xylenes (10.940)
-o-Xylene (11.505)
-Styrene (11.577)+
-Isopropylbenzene (11.934)
-P-Bromofluorobenzene (12.277)
-Bromobenzene (12.420)+
-N-Propylbenzene (12.477)
-1,1,2,2-Tetrachloroethane (12.542)
-2-Chlorotoluene (12.649)
-1,2,3-Trichloropropane (12.756)+
-trans-1,4-Dichloro-2-Bute (12.821)
4-Chlorotoluene (12.871)
-1,2,4-Trimethylbenzene (13.250)
-sec-Butylbenzene (13.400)
-tert-Butylbenzene (13.157)+
-P-Isopropyltoluene (13.593)+
-1,2,3-Trimethylbenzene (13.807)
1,4-Dichlorobenzene-D4 (13.736)+
-N-Butylbenzene (14.136)
-1,2-Dichlorobenzene (14.286)
-1,2-Dibromo-3-Chloropropa (15.373)+
-Hexachlorobutadiene (16.210)+
-Naphthalene (16.639)
-1,2,4-Trichlorobenzene (16.8

Katahdin
ANALYTICAL SERVICES

MS/MSD Recovery Report

MS ID: WG238427-8
MSD ID: WG238427-9
Sample ID: SL9735-7
Client ID: MW07A-100318
Project:
SDG: SL9735
MS File ID: T7757.D

Received Date:
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427
Report Date: 05-NOV-18
MSD File ID: T7758.D

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Dichlorodifluoromethane	50.0	50.0	ug/L	U2.0	86.0	85.9	172.*	172.*	0	20	29-164
Chloromethane	50.0	50.0	ug/L	U2.0	56.9	66.5	114.	133.*	16	20	59-123
Vinyl Chloride	50.0	50.0	ug/L	U2.0	63.4	66.1	127.	132.*	4	20	64-131
Bromomethane	50.0	50.0	ug/L	U2.0	36.0	42.4	72.0	84.8	16	20	57-135
Chloroethane	50.0	50.0	ug/L	U2.0	63.5	63.8	127.	128.	0	20	53-157
Trichlorofluoromethane	50.0	50.0	ug/L	U2.0	64.7	62.3	129.	125.	4	20	70-149
Diethyl Ether	50.0	50.0	ug/L	U1.0	52.4	50.7	105.	101.	3	20	78-124
1,1-Dichloroethene	50.0	50.0	ug/L	U1.0	57.7	56.8	115.	114.	2	20	88-127
Carbon Disulfide	50.0	50.0	ug/L	U1.0	57.9	58.7	116.	117.	1	20	71-129
Methylene Chloride	50.0	50.0	ug/L	U5.0	52.0	52.3	104.	105.	0	20	72-129
Acetone	50.0	50.0	ug/L	U5.0	45.0	47.4	90.0	94.8	5	20	62-172
trans-1,2-Dichloroethene	50.0	50.0	ug/L	U1.0	43.9	56.7	87.8	113.	25*	20	78-125
Methyl tert-butyl Ether	50.0	50.0	ug/L	U1.0	52.7	55.7	105.	111.	6	20	81-125
Di-Isopropyl Ether	50.0	50.0	ug/L	U1.0	50.6	51.3	101.	103.	1	20	81-123
1,1-Dichloroethane	50.0	50.0	ug/L	U1.0	53.1	52.6	106.	105.	1	20	76-130
Ethyl Tertiary-Butyl Ether	50.0	50.0	ug/L	U1.0	52.4	52.5	105.	105.	0	20	85-119
cis-1,2-Dichloroethene	50.0	50.0	ug/L	U1.0	49.2	50.5	98.4	101.	3	20	85-123
2,2-Dichloropropane	50.0	50.0	ug/L	U1.0	54.5	53.7	109.	107.	1	20	70-132
Bromochloromethane	50.0	50.0	ug/L	U1.0	55.4	55.3	111.	111.	0	20	85-117
Chloroform	50.0	50.0	ug/L	U1.0	54.0	52.2	108.	104.	3	20	78-128
Carbon Tetrachloride	50.0	50.0	ug/L	U1.0	59.9	56.3	120.	113.	6	20	87-126
Tetrahydrofuran	50.0	50.0	ug/L	U5.0	46.0	52.4	92.0	105.	13	20	74-123
1,1,1-Trichloroethane	50.0	50.0	ug/L	U1.0	55.6	54.5	111.	109.	2	20	77-129
1,1-Dichloropropene	50.0	50.0	ug/L	U1.0	54.1	51.8	108.	104.	4	20	87-118
2-Butanone	50.0	50.0	ug/L	U5.0	53.0	53.6	106.	107.	1	20	71-132
Benzene	50.0	50.0	ug/L	U1.0	51.4	50.4	103.	101.	2	20	86-116
Tertiary-Amyl Methyl Ether	50.0	50.0	ug/L	U1.0	51.1	49.7	102.	99.4	3	20	80-121
1,2-Dichloroethane	50.0	50.0	ug/L	U1.0	52.7	49.7	105.	99.4	6	20	81-125
Trichloroethene	50.0	50.0	ug/L	U1.0	56.2	53.0	112.	106.	6	20	79-121
Dibromomethane	50.0	50.0	ug/L	U1.0	52.2	50.7	104.	101.	3	20	85-117
1,2-Dichloropropane	50.0	50.0	ug/L	U1.0	48.9	47.6	97.8	95.2	3	20	84-118
Bromodichloromethane	50.0	50.0	ug/L	U1.0	57.6	54.2	115.	108.	6	20	85-122
cis-1,3-Dichloropropene	50.0	50.0	ug/L	U1.0	49.7	47.2	99.4	94.4	5	20	83-119

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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ANALYTICAL SERVICES

MS/MSD Recovery Report

MS ID: WG238427-8
MSD ID: WG238427-9
Sample ID: SL9735-7
Client ID: MW07A-100318
Project:
SDG: SL9735
MS File ID: T7757.D

Received Date:
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427
Report Date: 05-NOV-18
MSD File ID: T7758.D

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
1,4-Dioxane	1000	1000	ug/L	U100	702.	774.	70.2	77.4	10	20	10-149
Toluene	50.0	50.0	ug/L	U1.0	53.0	50.6	106.	101.	5	20	84-118
4-Methyl-2-Pentanone	50.0	50.0	ug/L	U5.0	51.1	51.3	102.	103.	0	20	83-122
Tetrachloroethene	50.0	50.0	ug/L	U1.0	52.4	54.3	105.	109.	4	20	47-155
trans-1,3-Dichloropropene	50.0	50.0	ug/L	U1.0	53.1	51.6	106.	103.	3	20	85-135
1,1,2-Trichloroethane	50.0	50.0	ug/L	U1.0	52.0	51.5	104.	103.	1	20	84-115
Dibromochloromethane	50.0	50.0	ug/L	U1.0	53.1	52.8	106.	106.	0	20	85-119
1,3-Dichloropropane	50.0	50.0	ug/L	U1.0	50.8	51.6	102.	103.	2	20	80-119
1,2-Dibromoethane	50.0	50.0	ug/L	U1.0	50.1	49.3	100.	98.6	2	20	84-116
2-Hexanone	50.0	50.0	ug/L	U5.0	44.1	48.2	88.2	96.4	9	20	80-124
Chlorobenzene	50.0	50.0	ug/L	U1.0	51.4	52.2	103.	104.	2	20	89-113
Ethylbenzene	50.0	50.0	ug/L	U1.0	55.5	55.2	111.	110.	0	20	88-113
1,1,1,2-Tetrachloroethane	50.0	50.0	ug/L	U1.0	53.1	53.0	106.	106.	0	20	88-118
m+p-Xylenes	100.	100.	ug/L	U2.0	116.	115.	116.*	115.	1	20	88-116
o-Xylene	50.0	50.0	ug/L	U1.0	53.5	52.4	107.	105.	2	20	90-116
Styrene	50.0	50.0	ug/L	U1.0	50.9	51.3	102.	103.	1	20	88-117
Bromoform	50.0	50.0	ug/L	U1.0	54.7	54.6	109.	109.	0	20	86-117
Isopropylbenzene	50.0	50.0	ug/L	U1.0	55.6	52.8	111.	106.	5	20	96-136
Bromobenzene	50.0	50.0	ug/L	U1.0	50.0	48.8	100.	97.6	2	20	84-113
N-Propylbenzene	50.0	50.0	ug/L	U1.0	56.0	52.7	112.	105.	6	20	83-121
1,1,2,2-Tetrachloroethane	50.0	50.0	ug/L	U1.0	48.7	48.2	97.4	96.4	1	20	79-121
1,3,5-Trimethylbenzene	50.0	50.0	ug/L	U1.0	53.1	51.3	106.	103.	3	20	80-123
2-Chlorotoluene	50.0	50.0	ug/L	U1.0	54.4	51.3	109.	103.	6	20	81-120
1,2,3-Trichloropropane	50.0	50.0	ug/L	U1.0	49.6	47.6	99.2	95.2	4	20	77-120
4-Chlorotoluene	50.0	50.0	ug/L	U1.0	55.1	52.5	110.	105.	5	20	81-122
tert-Butylbenzene	50.0	50.0	ug/L	U1.0	53.4	50.4	107.	101.	6	20	84-121
1,2,4-Trimethylbenzene	50.0	50.0	ug/L	U1.0	54.5	51.8	109.	104.	5	20	83-118
P-Isopropyltoluene	50.0	50.0	ug/L	U1.0	52.6	50.9	105.	102.	3	20	88-121
1,3-Dichlorobenzene	50.0	50.0	ug/L	U1.0	52.4	50.9	105.	102.	3	20	86-110
1,4-Dichlorobenzene	50.0	50.0	ug/L	U1.0	51.2	48.2	102.	96.4	6	20	86-111
N-Butylbenzene	50.0	50.0	ug/L	U1.0	53.9	52.8	108.	106.	2	20	78-121
sec-Butylbenzene	50.0	50.0	ug/L	U1.0	55.4	52.7	111.	105.	5	20	82-122
1,2-Dichlorobenzene	50.0	50.0	ug/L	U1.0	50.9	48.3	102.	96.6	5	20	86-112

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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ANALYTICAL SERVICES

MS/MSD Recovery Report

MS ID: WG238427-8
MSD ID: WG238427-9
Sample ID: SL9735-7
Client ID: MW07A-100318
Project:
SDG: SL9735
MS File ID: T7757.D

Received Date:
Extract Date: 12-OCT-18
Extracted By: HG/JR
Extraction Method: SW846 5030
Lab Prep Batch: WG238427
Report Date: 05-NOV-18
MSD File ID: T7758.D

Analysis Date: 12-OCT-18
Analyst: HG/JR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
1,2-Dibromo-3-Chloropropane	50.0	50.0	ug/L	U1.0	55.1	48.6	110.	97.2	12	20	67-124
Hexachlorobutadiene	50.0	50.0	ug/L	U1.0	53.8	51.8	108.	104.	4	20	73-113
1,2,4-Trichlorobenzene	50.0	50.0	ug/L	U1.0	51.5	50.5	103.	101.	2	20	76-126
Naphthalene	50.0	50.0	ug/L	U1.0	47.6	47.3	95.2	94.6	1	20	62-126
1,2,3-Trichlorobenzene	50.0	50.0	ug/L	U1.0	47.2	47.0	94.4	94.0	0	20	70-122
P-Bromofluorobenzene							105.	102.			56-133
Toluene-d8							102.	99.8			65-128
1,2-Dichloroethane-d4							108.	105.			67-135
Dibromofluoromethane							98.1	101.			68-128

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
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Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7757.D
Report Date: 05-Nov-2018 13:42

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T101218.b\T7757.D
Lab Smp Id: WG238427-8 Client Smp ID: MW07A-100318MS
Inj Date : 12-OCT-2018 17:15 MS Autotune Date: 31-AUG-2018 16:19
Operator : HG/JR Inst ID: gcms-t.i
Smp Info : WG238427-8,SL9735
Misc Info : WG238427,WG238351-4,SL9735-7
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T101218.b\T8A05(56)D.m
Meth Date : 05-Nov-2018 13:33 tcote Quant Type: ISTD
Cal Date : 11-OCT-2018 12:28 Cal File: T7724.D
Als bottle: 13 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.344	1.344	(0.232)	238967	86.0548	86.0(R)	
2	Chloromethane	50	1.480	1.480	(0.256)	137175	56.8980	56.9	
3	Vinyl chloride	62	1.537	1.537	(0.265)	186829	63.4265	63.4	
4	Bromomethane	94	1.759	1.759	(0.304)	78129	36.0385	36.0	
5	Chloroethane	64	1.852	1.852	(0.320)	114913	63.5029	63.5	
6	Trichlorofluoromethane	101	1.952	1.952	(0.337)	388814	64.7327	64.7	
7	Diethyl Ether	59	2.173	2.174	(0.375)	127587	52.3925	52.4	
8	1,1-Dichloroethene	96	2.338	2.331	(0.404)	159855	57.7371	57.7	
9	Freon-113	151	2.366	2.360	(0.409)	143680	60.8853	60.9	
10	Carbon Disulfide	76	2.366	2.360	(0.409)	424069	57.8967	57.9	
11	Iodomethane	142	2.452	2.453	(0.423)	93687	33.2822	33.3	
12	Acrolein	56	2.617	2.617	(0.452)	110172	244.612	245	
13	Allyl Chloride	41	2.731	2.724	(0.472)	214848	54.0001	54.0	
14	Methylene Chloride	84	2.824	2.825	(0.488)	170243	52.0106	52.0	
15	Acetone	43	2.874	2.875	(0.496)	40992	45.0439	45.0	
16	trans-1,2-Dichloroethene	96	2.967	2.968	(0.512)	130779	43.8852	43.9	
17	Methyl Acetate	43	2.989	2.989	(0.516)	95111	43.9187	43.9	
18	Methyl tert-butyl ether	73	3.074	3.075	(0.531)	432720	52.6786	52.7	
19	Tertiary-butyl alcohol	59	3.182	3.182	(0.549)	60444	212.437	212	
20	Acetonitrile	41	3.339	3.339	(0.577)	123093	458.742	459	
21	Di-isopropyl ether	45	3.475	3.468	(0.600)	372954	50.6088	50.6	
22	Chloroprene	53	3.582	3.582	(0.619)	270146	60.8479	60.8	
23	1,1-Dichloroethane	63	3.611	3.611	(0.623)	295432	53.0781	53.1	

Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7757.D
Report Date: 05-Nov-2018 13:42

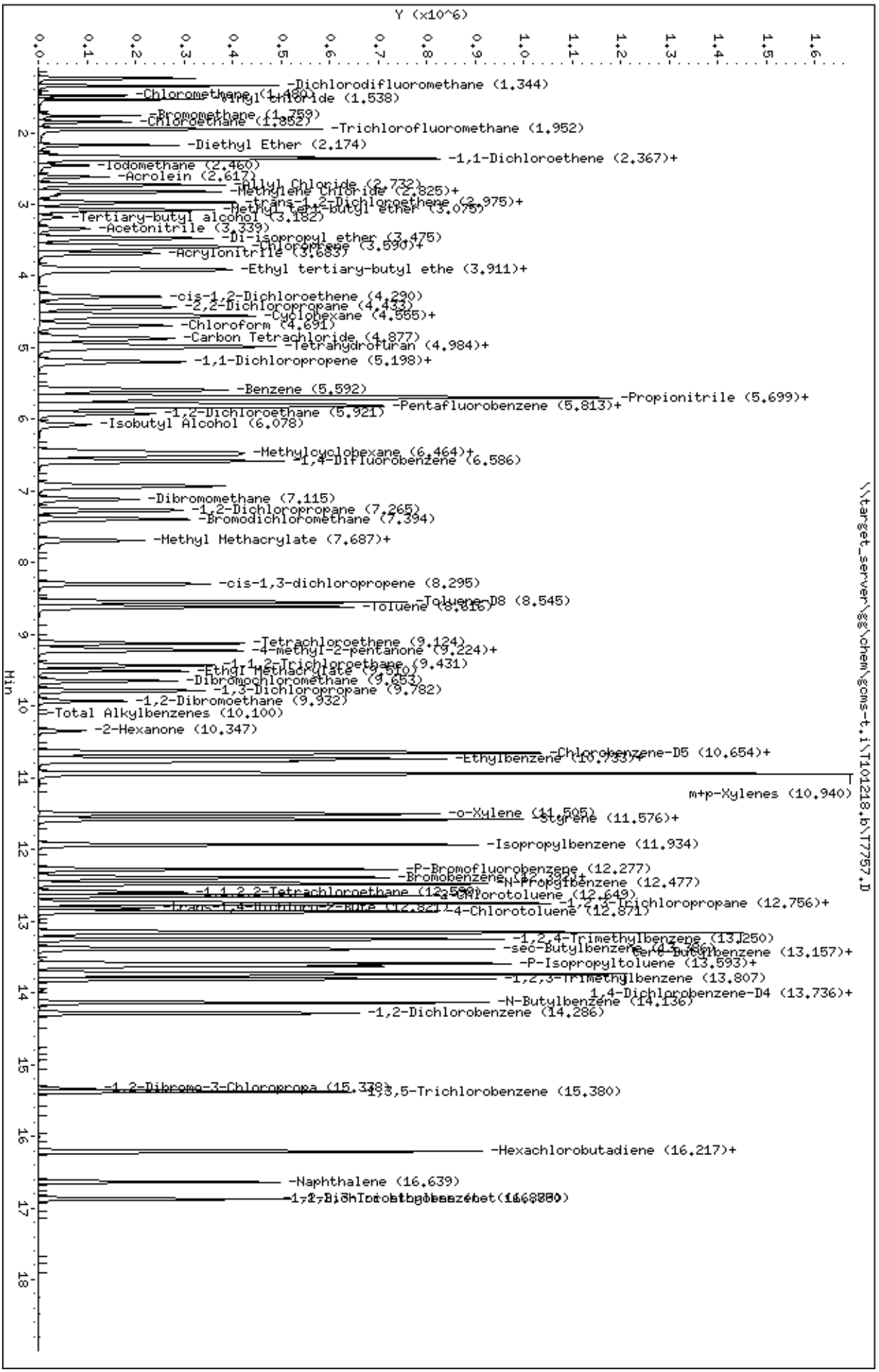
		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	24	Acrylonitrile	52	3.689	3.683	(0.637)	190986	257.874	258	
	25	Ethyl tertiary-butyl ether	59	3.904	3.904	(0.674)	422884	52.4271	52.4	
	26	Vinyl Acetate	43	3.925	3.926	(0.596)	291622	53.3355	53.3	
	27	cis-1,2-Dichloroethene	96	4.290	4.283	(0.741)	135836	49.1996	49.2	
	28	2,2-Dichloropropane	77	4.433	4.426	(0.765)	309859	54.4747	54.5	
	29	Cyclohexane	56	4.547	4.548	(0.785)	203648	59.9932	60.0	
	30	Bromochloromethane	128	4.562	4.562	(0.788)	64334	55.4348	55.4	
	31	Chloroform	83	4.690	4.691	(0.810)	353242	54.0083	54.0	
	32	Carbon Tetrachloride	117	4.869	4.869	(0.739)	315021	59.8682	59.9	
	33	Tetrahydrofuran	42	4.933	4.934	(0.852)	26866	45.9786	46.0	
$	34	Dibromofluoromethane	113	4.976	4.977	(0.859)	198240	49.0330	49.0	
	35	1,1,1-Trichloroethane	97	4.991	4.984	(0.862)	348762	55.6582	55.6	
	36	1,1-Dichloropropene	75	5.191	5.191	(0.788)	226443	54.0890	54.1	
	37	2-Butanone	43	5.212	5.206	(0.900)	51909	52.9636	53.0	
	38	Benzene	78	5.591	5.585	(0.849)	507102	51.3847	51.4	
	39	Propionitrile	54	5.670	5.670	(0.979)	163625	523.260	523	
	40	Methacrylonitrile	41	5.698	5.692	(0.984)	797464	540.473	540	
*	41	Pentafluorobenzene	168	5.791	5.785	(1.000)	314429	50.0000		
$	42	1,2-Dichloroethane-D4	65	5.813	5.813	(1.004)	316576	54.1496	54.1	
	43	Tertiary-amyl methyl ether	73	5.827	5.820	(1.006)	387603	51.1124	51.1	
	44	1,2-Dichloroethane	62	5.920	5.921	(0.899)	310113	52.7285	52.7	
	45	Isobutyl Alcohol	43	6.077	6.071	(1.049)	85908	1048.68	1050	
	46	Methylcyclohexane	83	6.464	6.457	(1.116)	236155	54.9941	55.0	
	47	Trichloroethene	95	6.499	6.493	(0.987)	168527	56.1514	56.2	
*	48	1,4-Difluorobenzene	114	6.585	6.586	(1.000)	482276	50.0000		
	49	Dibromomethane	93	7.114	7.107	(1.080)	108094	52.2127	52.2	
	50	1,2-Dichloropropane	63	7.264	7.265	(1.103)	129952	48.9222	48.9	
	51	Bromodichloromethane	83	7.393	7.386	(1.123)	277727	57.5625	57.6	
	52	Methyl Methacrylate	41	7.686	7.687	(1.167)	118269	49.1325	49.1	
	53	1,4-Dioxane	88	7.693	7.694	(1.168)	21480	702.026	702	
	55	cis-1,3-dichloropropene	75	8.301	8.294	(1.261)	246635	49.7098	49.7	
$	56	Toluene-D8	98	8.544	8.545	(1.297)	603936	50.8709	50.9	
	57	Toluene	92	8.616	8.616	(1.308)	318995	52.9599	53.0	
	58	Tetrachloroethene	164	9.123	9.124	(0.858)	107894	52.3918	52.4	
	59	4-methyl-2-pentanone	43	9.195	9.195	(1.396)	104821	51.0961	51.1	
	60	trans-1,3-Dichloropropene	75	9.224	9.224	(1.401)	267717	53.1223	53.1	
	61	1,1,2-Trichloroethane	83	9.431	9.431	(1.432)	110482	52.0577	52.0	
	62	Ethyl Methacrylate	69	9.510	9.510	(1.444)	170218	47.7637	47.8	
	63	Dibromochloromethane	129	9.653	9.653	(0.907)	182920	53.1396	53.1	
	64	1,3-Dichloropropane	76	9.788	9.789	(0.920)	230784	50.7861	50.8	
	65	1,2-Dibromoethane	107	9.931	9.932	(1.508)	139133	50.1493	50.1	
M	66	Total Alkylbenzenes	100				4256228	378.965	379	
	67	2-Hexanone	43	10.346	10.347	(0.972)	70922	44.1049	44.1	
*	68	Chlorobenzene-D5	117	10.639	10.640	(1.000)	443436	50.0000		
	69	Chlorobenzene	112	10.661	10.661	(1.002)	350877	51.3882	51.4	
	70	Ethylbenzene	91	10.732	10.733	(1.009)	688724	55.5098	55.5	
	71	1,1,1,2-Tetrachloroethane	131	10.768	10.768	(1.012)	163332	53.1343	53.1	
	72	m+p-Xylenes	91	10.940	10.940	(1.028)	1087676	115.685	116	
	73	o-Xylene	91	11.504	11.505	(1.081)	550974	53.5372	53.5	
	74	Styrene	104	11.583	11.576	(1.089)	377672	50.9213	50.9	
	75	Bromoform	173	11.576	11.576	(1.088)	124871	54.7123	54.7	
	76	Isopropylbenzene	105	11.934	11.934	(0.869)	643442	55.6220	55.6	
$	77	P-Bromofluorobenzene	95	12.277	12.277	(1.864)	267377	52.4543	52.4	
	78	Bromobenzene	156	12.384	12.392	(0.902)	160856	49.9648	50.0	

Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7757.D
Report Date: 05-Nov-2018 13:42

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	79 cis-1,4-Dichloro-2-Butene	53	12.405	12.399	(0.904)	73546	54.2845	54.3	
	80 N-Propylbenzene	91	12.477	12.477	(0.909)	802647	56.0589	56.0	
	81 1,1,2,2-Tetrachloroethane	83	12.598	12.592	(0.918)	164043	48.6619	48.7	
	82 2-Chlorotoluene	91	12.649	12.649	(0.921)	502863	54.4361	54.4	
	83 1,2,3-Trichloropropane	75	12.734	12.735	(0.928)	160327	49.6042	49.6	
	84 1,3,5-Trimethylbenzene	105	12.756	12.756	(0.929)	553687	53.0781	53.1	
	85 trans-1,4-Dichloro-2-Butene	53	12.820	12.821	(0.934)	58362	54.1791	54.2	
	86 4-Chlorotoluene	91	12.870	12.871	(0.938)	538403	55.1132	55.1	
	87 tert-Butylbenzene	119	13.156	13.157	(0.958)	531889	53.4026	53.4	
	88 Pentachloroethane	165	13.156	13.157	(0.958)	96923	53.2046	53.2	
	89 1,2,4-Trimethylbenzene	105	13.249	13.250	(0.965)	575336	54.4929	54.5	
	90 sec-Butylbenzene	105	13.385	13.385	(0.975)	671515	55.3706	55.4	
	91 P-Isopropyltoluene	119	13.592	13.593	(0.990)	559384	52.6285	52.6	
	92 1,3-Dichlorobenzene	146	13.628	13.629	(0.993)	277961	52.4531	52.4	
*	93 1,4-Dichlorobenzene-D4	152	13.728	13.729	(1.000)	235052	50.0000		
	94 1,4-Dichlorobenzene	146	13.750	13.750	(1.002)	280584	51.2236	51.2	
	95 1,2,3-Trimethylbenzene	105	13.807	13.807	(1.006)	590347	54.8062	54.8	
	96 N-Butylbenzene	91	14.136	14.136	(1.030)	561770	53.9333	53.9	
	97 1,2-Dichlorobenzene	146	14.286	14.286	(1.041)	260286	50.9444	50.9	
	98 1,2-Dibromo-3-Chloropropane	75	15.337	15.337	(1.117)	43216	55.0942	55.1	
	99 1,3,5-Trichlorobenzene	180	15.380	15.380	(1.120)	209346	53.5996	53.6	
	100 Hexachlorobutadiene	225	16.209	16.210	(1.181)	99857	53.7669	53.8	
	101 1,2,4-Trichlorobenzene	180	16.217	16.216	(1.181)	170818	51.4835	51.5	
	102 Naphthalene	128	16.638	16.639	(1.212)	355321	47.5825	47.6	
M	103 1,2-Dichloroethylene (total)	96				266615	93.0848	93.1	
	104 1,2,3-Trichlorobenzene	180	16.874	16.875	(1.229)	159593	47.2055	47.2	
M	105 Xylenes (total)	91				1638650	169.222	169	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.


Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7757.D
Date : 12-OCT-2018 17:15
Client ID: MW07A-100318MS
Sample Info: WG238427-8,SL9735
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: HG/JR
Column diameter: 0.18
\\target_server\gg\chem\gcms-t.i\T101218.b\T7757.D
Y (x10^6)
Min
-Dichlorodifluoromethane (1.344)
-Chloromethane (1.480)
-Vinyl chloride (1.538)
-Bromomethane (1.759)
-Chloroethane (1.862)
-Trichlorofluoromethane (1.952)
-Diethyl Ether (2.174)
-1,1-Dichloroethene (2.367)+
-Iodomethane (2.460)
-Acrolein (2.617)
-Allyl Chloride (2.732)
-Methylene Chloride (2.825)+
-trans-1,2-Dichloroethene (2.975)+
-Methyl tert-butyl ether (3.076)
-Tertiary-butyl alcohol (3.182)
-Acetonitrile (3.339)
-Di-isopropyl ether (3.475)
-Chloroprene (3.590)+
-Acrylonitrile (3.683)
-Ethyl tertiary-butyl ethe (3.911)+
-cis-1,2-Dichloroethene (4.290)
-2,2-Dichloropropane (4.433)
-Cyclohexane (4.555)+
-Chloroform (4.691)
-Carbon Tetrachloride (4.877)
-Tetrahydrofuran (4.984)+
-1,1-Dichloropropene (5.198)+
-Benzene (5.592)
-Propionitrile (5.699)+
-Pentafluorobenzene (5.813)+
-1,2-Dichloroethane (5.921)
-Isobutyl Alcohol (6.078)
-Methylcyclohexane (6.464)+
-1,4-Difluorobenzene (6.586)
-Dibromomethane (7.115)
-1,2-Dichloropropane (7.265)
-Bromodichloromethane (7.394)
-Methyl Methacrylate (7.687)+
-cis-1,3-dichloropropene (8.295)
-Toluene-D8 (8.545)
-Toluene (8.616)
-Tetrachloroethene (9.124)
-4-methyl-2-pentanone (9.224)+
-1,1,2-Trichloroethane (9.431)
-Ethyl Methacrylate (9.510)
-Dibromochloromethane (9.653)
-1,3-Dichloropropane (9.782)
-1,2-Dibromoethane (9.932)
-Total Alkylbenzenes (10.100)
-2-Hexanone (10.347)
-Chlorobenzene-D5 (10.654)+
-Ethylbenzene (10.733)+
m+p-Xylenes (10.940)
-o-Xylene (11.505)
-Styrene (11.576)+
-Isopropylbenzene (11.934)
-P-Bromofluorobenzene (12.277)
-Bromobenzene (12.290)+
-N-Propylbenzene (12.477)
-1,1,2,2-Tetrachloroethane (12.560)
-4-Chlorotoluene (12.649)
-1,2,3-Trichloropropane (12.756)+
-trans-1,4-Dichloro-2-Bute (12.821)+
-4-Chlorotoluene (12.871)
-1,2,4-Trimethylbenzene (13.250)
-sec-Butylbenzene (13.286)
-tert-Butylbenzene (13.157)+
-P-Isopropyltoluene (13.593)+
-1,2,3-Trimethylbenzene (13.807)
1,4-Dichlorobenzene-D4 (13.736)+
-N-Butylbenzene (14.136)
-1,2-Dichlorobenzene (14.286)
-1,2-Dibromo-3-Chloropropa (15.378)
-1,3,5-Trichlorobenzene (15.380)
-Hexachlorobutadiene (16.217)+
-Naphthalene (16.639)
-1,2,3-Trichlorobenzene (16.880)

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Report Date: 05-Nov-2018 13:42

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T101218.b\T7758.D
Lab Smp Id: WG238427-9 Client Smp ID: MW07A-100318MSD
Inj Date : 12-OCT-2018 17:45 MS Autotune Date: 31-AUG-2018 16:19
Operator : HG/JR Inst ID: gcms-t.i
Smp Info : WG238427-9,SL9735
Misc Info : WG238427,WG238351-4,SL9735-7
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T101218.b\T8A05(56)D.m
Meth Date : 05-Nov-2018 13:33 tcote Quant Type: ISTD
Cal Date : 11-OCT-2018 12:28 Cal File: T7724.D
Als bottle: 14 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.344	1.344	(0.232)	253556	85.9219	85.9(R)	
2	Chloromethane	50	1.480	1.480	(0.256)	170371	66.4983	66.5(R)	
3	Vinyl chloride	62	1.537	1.537	(0.265)	206787	66.0605	66.1(R)	
4	Bromomethane	94	1.759	1.759	(0.304)	96568	42.3543	42.4	
5	Chloroethane	64	1.852	1.852	(0.320)	122650	63.7801	63.8	
6	Trichlorofluoromethane	101	1.952	1.952	(0.337)	397878	62.3339	62.3	
7	Diethyl Ether	59	2.173	2.174	(0.375)	131150	50.6785	50.7	
8	1,1-Dichloroethene	96	2.338	2.331	(0.404)	167347	56.8499	56.8	
9	Freon-113	151	2.359	2.360	(0.407)	149816	59.7403	59.7	
10	Carbon Disulfide	76	2.366	2.360	(0.409)	457002	58.7122	58.7	
11	Iodomethane	142	2.459	2.453	(0.425)	147298	48.3633	48.4	
12	Acrolein	56	2.617	2.617	(0.452)	124343	259.789	260	
13	Allyl Chloride	41	2.731	2.724	(0.472)	225629	53.3644	53.4	
14	Methylene Chloride	84	2.824	2.825	(0.488)	181893	52.3000	52.3	
15	Acetone	43	2.881	2.875	(0.498)	45868	47.4286	47.4	
16	trans-1,2-Dichloroethene	96	2.967	2.968	(0.512)	179640	56.7252	56.7	
17	Methyl Acetate	43	2.989	2.989	(0.516)	115596	50.2289	50.2	
18	Methyl tert-butyl ether	73	3.074	3.075	(0.531)	486275	55.7060	55.7	
19	Tertiary-butyl alcohol	59	3.182	3.182	(0.549)	70092	231.813	232	
20	Acetonitrile	41	3.339	3.339	(0.577)	141506	496.253	496	
21	Di-isopropyl ether	45	3.468	3.468	(0.599)	401723	51.2968	51.3	
22	Chloroprene	53	3.582	3.582	(0.619)	281322	59.6074	59.6	
23	1,1-Dichloroethane	63	3.611	3.611	(0.623)	311332	52.6350	52.6	

Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7758.D
Report Date: 05-Nov-2018 13:42

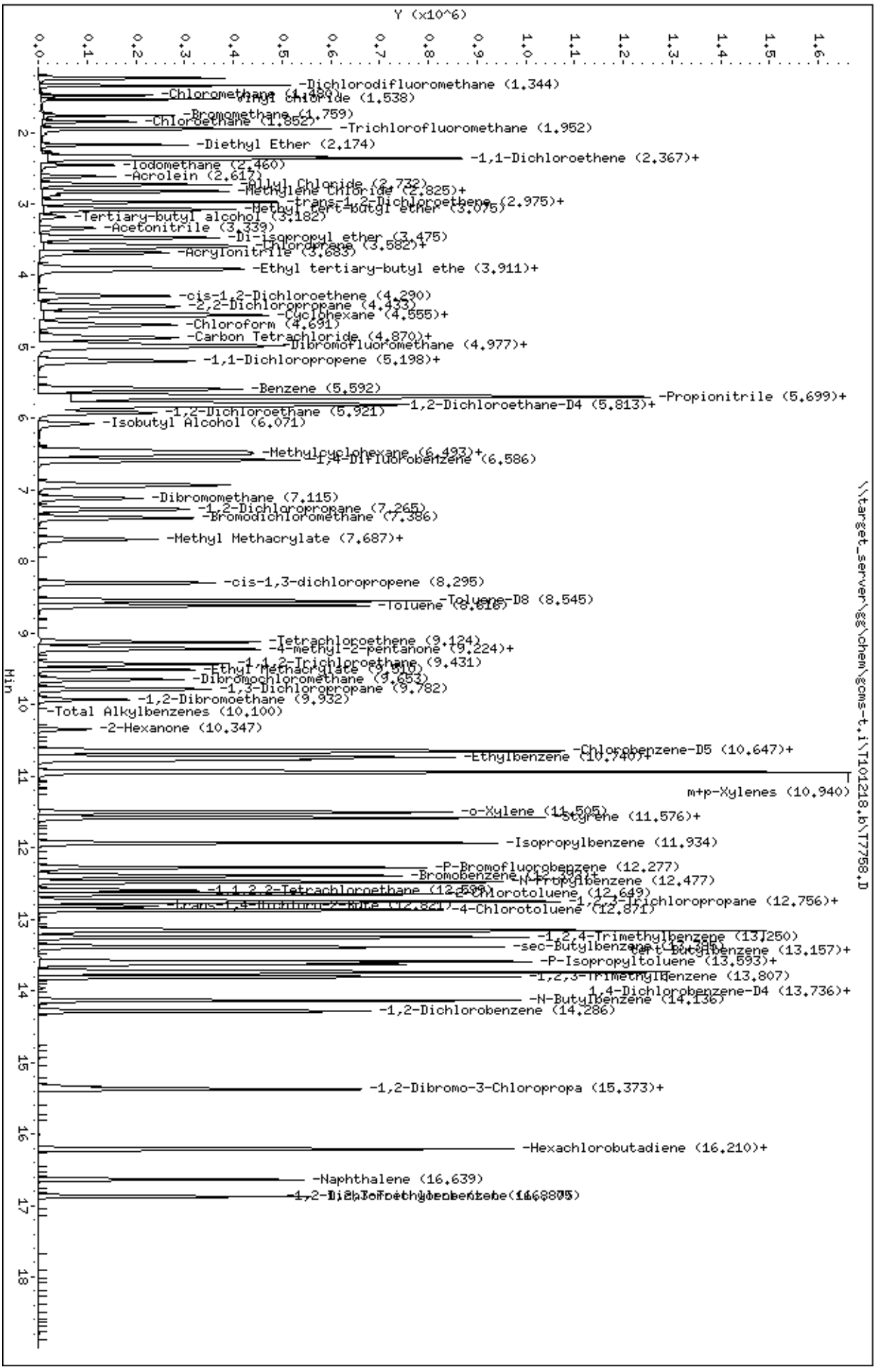
		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	24	Acrylonitrile	52	3.682	3.683	(0.636)	204201	259.452	259	
	25	Ethyl tertiary-butyl ether	59	3.904	3.904	(0.674)	450165	52.5169	52.5	
	26	Vinyl Acetate	43	3.925	3.926	(0.596)	318703	53.3008	53.3	
	27	cis-1,2-Dichloroethene	96	4.290	4.283	(0.741)	148143	50.4917	50.5	
	28	2,2-Dichloropropane	77	4.433	4.426	(0.765)	324568	53.6945	53.7	
	29	Cyclohexane	56	4.547	4.548	(0.785)	221122	61.3124	61.3	
	30	Bromochloromethane	128	4.569	4.562	(0.789)	68211	55.3082	55.3	
	31	Chloroform	83	4.690	4.691	(0.810)	362692	52.1818	52.2	
	32	Carbon Tetrachloride	117	4.869	4.869	(0.739)	324078	56.3193	56.3	
	33	Tetrahydrofuran	42	4.941	4.934	(0.853)	32630	52.4445	52.4	
$	34	Dibromofluoromethane	113	4.976	4.977	(0.859)	216641	50.4233	50.4	
	35	1,1,1-Trichloroethane	97	4.991	4.984	(0.862)	362825	54.4867	54.5	
	36	1,1-Dichloropropene	75	5.198	5.191	(0.789)	237518	51.8445	51.8	
	37	2-Butanone	43	5.212	5.206	(0.900)	55800	53.5750	53.6	
	38	Benzene	78	5.591	5.585	(0.849)	544313	50.4357	50.4	
	39	Propionitrile	54	5.670	5.670	(0.979)	175319	527.582	528	
	40	Methacrylonitrile	41	5.698	5.692	(0.984)	851498	543.049	543	
*	41	Pentafluorobenzene	168	5.791	5.785	(1.000)	334141	50.0000		
$	42	1,2-Dichloroethane-D4	65	5.813	5.813	(1.004)	325357	52.3685	52.4	
	43	Tertiary-amyl methyl ether	73	5.820	5.820	(1.005)	400280	49.6702	49.7	
	44	1,2-Dichloroethane	62	5.920	5.921	(0.899)	319683	49.7046	49.7	
	45	Isobutyl Alcohol	43	6.070	6.071	(1.048)	92948	1068.14	1070	
	46	Methylcyclohexane	83	6.456	6.457	(1.115)	248671	54.5022	54.5	
	47	Trichloroethene	95	6.499	6.493	(0.987)	173970	53.0050	53.0	
*	48	1,4-Difluorobenzene	114	6.585	6.586	(1.000)	527405	50.0000		
	49	Dibromomethane	93	7.114	7.107	(1.080)	114743	50.6818	50.7	
	50	1,2-Dichloropropane	63	7.264	7.265	(1.103)	138323	47.6037	47.6	
	51	Bromodichloromethane	83	7.393	7.386	(1.123)	286199	54.2427	54.2	
	52	Methyl Methacrylate	41	7.686	7.687	(1.167)	131319	49.8619	49.9	
	53	1,4-Dioxane	88	7.693	7.694	(1.168)	25889	773.723	774	
	55	cis-1,3-dichloropropene	75	8.294	8.294	(1.259)	256380	47.2523	47.2	
$	56	Toluene-D8	98	8.544	8.545	(1.297)	648097	49.9195	49.9	
	57	Toluene	92	8.616	8.616	(1.308)	333175	50.5810	50.6	
	58	Tetrachloroethene	164	9.123	9.124	(0.858)	116764	54.3055	54.3	
	59	4-methyl-2-pentanone	43	9.202	9.195	(1.397)	115037	51.2777	51.3	
	60	trans-1,3-Dichloropropene	75	9.224	9.224	(1.401)	284316	51.5886	51.6	
	61	1,1,2-Trichloroethane	83	9.431	9.431	(1.432)	119454	51.4689	51.5	
	62	Ethyl Methacrylate	69	9.510	9.510	(1.444)	184455	47.3383	47.3	
	63	Dibromochloromethane	129	9.653	9.653	(0.907)	189613	52.7587	52.8	
	64	1,3-Dichloropropane	76	9.788	9.789	(0.920)	244790	51.5943	51.6	
	65	1,2-Dibromoethane	107	9.931	9.932	(1.508)	149539	49.2879	49.3	
M	66	Total Alkylbenzenes	100				4421139	362.731	363	
	67	2-Hexanone	43	10.346	10.347	(0.972)	80487	48.1712	48.2	
*	68	Chlorobenzene-D5	117	10.639	10.640	(1.000)	462980	50.0000		
	69	Chlorobenzene	112	10.661	10.661	(1.002)	371871	52.1638	52.2	
	70	Ethylbenzene	91	10.739	10.733	(1.009)	714776	55.1777	55.2	
	71	1,1,1,2-Tetrachloroethane	131	10.775	10.768	(1.013)	170030	52.9783	53.0	
	72	m+p-Xylenes	91	10.940	10.940	(1.028)	1132528	115.358	115	
	73	o-Xylene	91	11.504	11.505	(1.081)	563639	52.4444	52.4	
	74	Styrene	104	11.583	11.576	(1.089)	397042	51.2736	51.3	
	75	Bromoform	173	11.576	11.576	(1.088)	130176	54.6289	54.6	
	76	Isopropylbenzene	105	11.933	11.934	(0.869)	664230	52.8537	52.8	
$	77	P-Bromofluorobenzene	95	12.277	12.277	(1.864)	283806	50.9132	50.9	
	78	Bromobenzene	156	12.391	12.392	(0.903)	170650	48.8274	48.8	

Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7758.D
Report Date: 05-Nov-2018 13:42

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	79 cis-1,4-Dichloro-2-Butene	53	12.398	12.399	(0.903)	74073	50.3625	50.4	
	80 N-Propylbenzene	91	12.477	12.477	(0.909)	819832	52.7443	52.7	
	81 1,1,2,2-Tetrachloroethane	83	12.598	12.592	(0.918)	176406	48.2032	48.2	
	82 2-Chlorotoluene	91	12.649	12.649	(0.921)	514191	51.2735	51.3	
	83 1,2,3-Trichloropropane	75	12.734	12.735	(0.928)	167162	47.6409	47.6	
	84 1,3,5-Trimethylbenzene	105	12.756	12.756	(0.929)	581448	51.3080	51.3	
	85 trans-1,4-Dichloro-2-Butene	53	12.820	12.821	(0.934)	60150	51.4361	51.4	
	86 4-Chlorotoluene	91	12.870	12.871	(0.938)	556494	52.4734	52.5	
	87 tert-Butylbenzene	119	13.156	13.157	(0.958)	546012	50.4581	50.4	
	88 Pentachloroethane	165	13.156	13.157	(0.958)	98648	49.8817	49.9	
	89 1,2,4-Trimethylbenzene	105	13.249	13.250	(0.965)	594358	51.8106	51.8	
	90 sec-Butylbenzene	105	13.385	13.385	(0.975)	695127	52.7496	52.7	
	91 P-Isopropyltoluene	119	13.592	13.593	(0.990)	587414	50.8850	50.9	
	92 1,3-Dichlorobenzene	146	13.628	13.629	(0.993)	292747	50.8875	50.9	
*	93 1,4-Dichlorobenzene-D4	152	13.728	13.729	(1.000)	255172	50.0000		
	94 1,4-Dichlorobenzene	146	13.750	13.750	(1.002)	286952	48.2556	48.2	
	95 1,2,3-Trimethylbenzene	105	13.807	13.807	(1.006)	605748	51.8019	51.8	
	96 N-Butylbenzene	91	14.136	14.136	(1.030)	596948	52.7757	52.8	
	97 1,2-Dichlorobenzene	146	14.286	14.286	(1.041)	268110	48.3381	48.3	
	98 1,2-Dibromo-3-Chloropropane	75	15.337	15.337	(1.117)	41332	48.5557	48.6	
	99 1,3,5-Trichlorobenzene	180	15.380	15.380	(1.120)	221836	52.3190	52.3	
	100 Hexachlorobutadiene	225	16.209	16.210	(1.181)	104495	51.8279	51.8	
	101 1,2,4-Trichlorobenzene	180	16.216	16.216	(1.181)	181938	50.5113	50.5	
	102 Naphthalene	128	16.638	16.639	(1.212)	383107	47.2632	47.3	
M	103 1,2-Dichloroethylene (total)	96				327783	107.217	107	
	104 1,2,3-Trichlorobenzene	180	16.874	16.875	(1.229)	172507	47.0041	47.0	
M	105 Xylenes (total)	91				1696167	167.802	168	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.


Y (x10^6)
Min
Data File: \\target_server\gg\chem\gcms-t.i\T101218.b\T7758.D
Date : 12-OCT-2018 17:45
Client ID: MW07A-100318HSD
Sample Info: WG238427-9,SL9735
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: HG/JR
Column diameter: 0.18
\\target_server\gg\chem\gcms-t.i\T101218.b\T7758.D
-Dichlorodifluoromethane (1.344)
-Chloromethane (1.490)
Vinyl chloride (1.538)
-Bromomethane (1.759)
-Chloroethane (1.852)
-Trichlorofluoromethane (1.952)
-Diethyl Ether (2.174)
-1,1-Dichloroethene (2.367)+
-Iodomethane (2.460)
-Acrolein (2.617)
-Allyl Chloride (2.732)
-Methylene Chloride (2.825)+
-Methyl tert-butyl ether (3.075)
-trans-1,2-Dichloroethene (2.975)+
-Tertiary-butyl alcohol (3.182)
-Acetonitrile (3.339)
-Di-isopropyl ether (3.475)
-Chloroprene (3.582)+
-Acrylonitrile (3.683)
-Ethyl tertiary-butyl ethe (3.911)+
-cis-1,2-Dichloroethene (4.290)
-2,2-Dichloropropane (4.433)
-Cyclohexane (4.555)+
-Chloroform (4.691)
-Carbon Tetrachloride (4.870)+
-Dibromofluoromethane (4.977)+
-1,1-Dichloropropene (5.198)+
-Benzene (5.592)
-Propionitrile (5.699)+
1,2-Dichloroethane-D4 (5.813)+
-1,2-Dichloroethane (5.921)
-Isobutyl Alcohol (6.071)
-Methylcyclohexane (6.493)+
1,4-Difluorobenzene (6.586)
-Dibromomethane (7.115)
-1,2-Dichloropropane (7.265)
-Bromodichloromethane (7.386)
-Methyl Methacrylate (7.687)+
-cis-1,3-dichloropropene (8.295)
-Toluene-D8 (8.545)
-Toluene (8.616)
-Tetrachloroethene (9.124)
-4-methyl-2-pentanone (9.224)+
-1,1,2-Trichloroethane (9.431)
-Ethyl Methacrylate (9.510)
-Dibromochloromethane (9.653)
-1,3-Dichloropropane (9.782)
-1,2-Dibromoethane (9.932)
-Total Alkylbenzenes (10.100)
-2-Hexanone (10.347)
-Chlorobenzene-D5 (10.647)+
-Ethylbenzene (10.740)+
m+p-Xylenes (10.940)
-o-Xylene (11.505)
-Styrene (11.576)+
-Isopropylbenzene (11.934)
-P-Bromofluorobenzene (12.277)
-Bromobenzene (12.291)+
-N-Propylbenzene (12.477)
-1,1,2,2-Tetrachloroethane (12.599)
-2-Chlorotoluene (12.649)
-1,2,3-Trichloropropane (12.756)+
-trans-1,4-Dichloro-2-Bute (12.821)
-4-Chlorotoluene (12.871)
-1,2,4-Trimethylbenzene (13.250)
-sec-Butylbenzene (13.285)
-tert-Butylbenzene (13.157)+
-P-Isopropyltoluene (13.593)+
-1,2,3-Trimethylbenzene (13.807)
1,4-Dichlorobenzene-D4 (13.736)+
-N-Butylbenzene (14.136)
-1,2-Dichlorobenzene (14.286)
-1,2-Dibromo-3-Chloropropa (15.373)+
-Hexachlorobutadiene (16.210)+
-Naphthalene (16.639)
-1,2,3-Trichlorobenzene (16.805)

Logbooks and Supporting Documents

KATAHDIN ANALYTICAL SERVICES

GCMS-T INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION: 10-11-18 935 TTC 10/12/18

					PREP METHOD			Criteria							
SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	5030	5035	1311	NAS	DoD	QAPP	Y/N	ANALYST	PH	TRC	COMMENTS
WG235351-10	TT5737	1	—	YGABE2007	✓						Y		7	NA	
VSTD50-44	TT7719		1	TSA05 (SW)							Y				
20-53 *	20		2								Y				
5-62 *	21		3								Y				
1-81 *	22		4								Y				
10-86 *	23		5								Y				
100-5	24		6								Y				10-11-18
TNOLKS-7/8	25		7								N				
↓	26		8								Y				N for IND
VBLKA	27		9								N				
B-9	28		10								Y				
SL9240-1	29		11				✓				Y		<2		
SL9235B	30		12				✓				Y				
SL9244-4C	31		13				✓				Y				
-5C	32		14				✓				Y				
SL9293-1B	33		15				✓				Y				
-2B	34		16				✓				Y				
-3B	35		17				✓				Y				
-4B	36		18				✓				Y				1938 ✓
Rinse	37		19								–		Z		
↓	38		20								–				

TTC 10/12/18

* 10-11-18 1015

STANDARD	CODE
BFB	Y1228
CAL. STD.	Y1248/Y1249B
LCS/MS MIX	Y1250
EXTRAS MIX	Y1251

STANDARD	CODE
IS MIX	Y1242
SS MIX	↓

Circle Methods:

SW846 8260 (circled) EPA 624

SW846 8260 SIM EPA 524

SW846 8260 SIM (heated purge) OTHER.

KATAHDIN ANALYTICAL SERVICES

GCMS-T INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION: 10-12-18 7:50

					PREP METHOD			Criteria			pH Paper Lot #:			KI Paper Lot #	
SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	5030	5035	1311	KAS	DoD	QAPP	Y/N	ANALYST	PH	TRC	COMMENTS
WG238427-3	TB758	1	—	VOA BFB AQ	✓						Y	HG/JR	✓	N/A	
VStdSc -4	T7740	1	1	T8A05(56)D	✓						Y	↓	↓	↓	
LCS -1/-6	41	1	2	↓	✓						Y				Ind Check 'A' file
VBlnkA	42	1	3		✓						N				Target hits
MBlnk -2	43	1	4		✓						Y				
TCLP Blank -6	44	20	5				✓				Y		—		PBT1483
SL9735-9B	45	1	6		✓			✓			Y		<2		
↓ -8B	46	1	7		✓			✓			Y		<2		
SL9919-1 DL	47	20	8				✓		5.0		Y		—		1554 no hits >LOQ
↓ -2 DL	48	20	9				✓		5.0		Y		—		1554 ↓
SL9801-2 DL	49	20	10				✓		5.0		N		—		1554
SL9735-1RA	50	1	11		✓			✓			Y		<2		
-2	51	1	12		✓						Y		<2		
-3	52	1	13		✓						Y		<2		
-4	53	1	14		~						Y		<2		
-5	54	1	15		✓						Y		<2		
-6	55	1	16		✓						Y		<2		
-7	56	1	17		✓						Y		<2		
-7 MS 48	57	1	18		✓						Y		<2		
✓ -7 MSD 49	58	1	19		✓			✓			Y		<2		
CCV 1 -5	59	1	20								Y		✓		1815 ✓
CCV 2	60	1	21								N		✓		Not needed
CCV 3	↓ 61	1	22								N		✓		↓
Rinse	↓ 62	1	23	↓							—	↓		↓	
															TPL 10/13/18

STANDARD	CODE
BFB	V1238
CAL. STD.	V1248
LCS/MS MIX	V1250
EXTRAS MIX	V1251

STANDARD	CODE
IS MIX	V1242
SS MIX	↓

Circle Methods:

(SW846 8260) EPA 624

SW846 8260 SIM EPA 524

SW846 8260 SIM OTHER.

(heated purge)

PCB DATA

QC Summary Section

Katahdin
ANALYTICAL SERVICES

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** New Bedford Harbor **Matrix:** AQ
Lab Code: KAS **SDG:** SL9735

Client Sample ID	Lab Sample ID	Col. ID	DCB	#	TCX	#
MW01-100418	SL9735-1RE	A	67.0		104.	
MW01-100418	SL9735-1RE	B	69.4		109.	
MW03-100318	SL9735-2RE	A	42.6	*	82.9	
MW03-100318	SL9735-2RE	B	44.7		89.2	
MW04A-100318	SL9735-3RE	A	43.9		68.4	
MW04A-100318	SL9735-3RE	B	46.8		73.8	
MW05-100318	SL9735-4RE	A	63.3		94.1	
MW05-100318	SL9735-4RE	B	65.6		103.	
MW05-100318-REP	SL9735-5RE	A	63.6		88.6	
MW05-100318-REP	SL9735-5RE	B	51.0		95.6	
MW06-100418	SL9735-6RE	A	69.2		95.7	
MW06-100418	SL9735-6RE	B	71.4		102.	
MW07A-100318	SL9735-7RE	A	87.6		108.	
MW07A-100318	SL9735-7RE	B	74.8		113.	*
EB-001-100318	SL9735-8RE	A	58.1		97.0	
EB-001-100318	SL9735-8RE	B	59.1		101.	
Method Blank Sample	WG245126-1	A	84.4		114.	*
Method Blank Sample	WG245126-1	B	83.8		121.	*
Laboratory Control S	WG245126-3	A	59.9		106.	
Laboratory Control S	WG245126-3	B	63.5		110.	
Matrix Spike	WG245126-4	A	81.8		109.	
Matrix Spike	WG245126-4	B	88.0		113.	*
Matrix Spike Duplica	WG245126-5	A	83.1		104.	
Matrix Spike Duplica	WG245126-5	B	87.6		107.	

		QC Limits
TCX	TETRACHLORO-M-XYLENE	62-111
DCB	DECACHLOROBIPHENYL	44-135

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Katahdin
ANALYTICAL SERVICES

Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : New Bedford Harbor
Lab File ID : 7MA491.D
Matrix : AQ

Column A
Instrument ID : GC07
Date Analyzed : 23-JAN-19
Time Analyzed : 16:52

SDG : SL9735
Lab Sample ID : WG245126-1
Date Extracted : 23-JAN-19
Extraction Method : SW846 3510C

Column B
Instrument ID : GC07
Date Analyzed : 23-JAN-19
Time Analyzed : 16:52

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG245126-3	7MA492.D	01/23/19	17:20
Matrix Spike	WG245126-4	7MA494.D	01/23/19	18:16
Matrix Spike Duplica	WG245126-5	7MA495.D	01/23/19	18:44
MW01-100418	SL9735-1RE	7MA496.D	01/23/19	19:12
MW03-100318	SL9735-2RE	7MA497.D	01/23/19	19:39
MW04A-100318	SL9735-3RE	7MA498.D	01/23/19	20:07
MW05-100318	SL9735-4RE	7MA499.D	01/23/19	20:35
MW05-100318-REP	SL9735-5RE	7MA500.D	01/23/19	21:03
MW06-100418	SL9735-6RE	7MA501.D	01/23/19	21:31
MW07A-100318	SL9735-7RE	7MA502.D	01/23/19	21:58
EB-001-100318	SL9735-8RE	7MA503.D	01/23/19	22:26

Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services
SDG : SL9735
Project : New Bedford Harbor
Column ID : A
Instrument ID : GC07

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	TCX	DCB	
Initial Calibration	WG243328-1	12/22/18	16:40	8.246	21.40	
Initial Calibration	WG243328-2	12/22/18	17:07	8.244	21.40	
Initial Calibration	WG243328-3	12/22/18	17:35	8.254	21.41	
Initial Calibration	WG243328-4	12/22/18	18:03	8.254	21.40	
Initial Calibration	WG243328-5	12/22/18	18:31	8.251	21.40	
Initial Calibration	WG243328-6	12/22/18	18:59	8.249	21.40	
Independent Source	WG243328-7	12/22/18	19:26			
Independent Source	WG243328-8	12/22/18	19:54			
Initial Calibration	WG243328-9	12/22/18	20:22			
Initial Calibration	WG243328-16	12/22/18	23:37			
Initial Calibration	WG243328-23	12/23/18	02:52			
Initial Calibration	WG243328-24	12/23/18	03:19			
Initial Calibration	WG243328-25	12/23/18	03:47			
Continuing Calibrati	WG245120-1	01/23/19	14:01	7.962	21.07	
Method Blank Sample	WG245126-1	01/23/19	16:52	7.966	21.06	
Laboratory Control S	WG245126-3	01/23/19	17:20	7.963	21.07	
Matrix Spike	WG245126-4	01/23/19	18:16	7.972	21.07	
Matrix Spike Duplica	WG245126-5	01/23/19	18:44	7.973	21.07	
MW01-100418	SL9735-1RE	01/23/19	19:12	7.969	21.07	
MW03-100318	SL9735-2RE	01/23/19	19:39	7.971	21.07	
MW04A-100318	SL9735-3RE	01/23/19	20:07	7.972	21.07	
MW05-100318	SL9735-4RE	01/23/19	20:35	7.973	21.07	
MW05-100318-REP	SL9735-5RE	01/23/19	21:03	7.969	21.07	
MW06-100418	SL9735-6RE	01/23/19	21:31	7.972	21.07	
MW07A-100318	SL9735-7RE	01/23/19	21:58	7.969	21.07	
EB-001-100318	SL9735-8RE	01/23/19	22:26	7.974	21.07	
Continuing Calibrati	WG245120-2	01/23/19	22:54	7.971	21.07	

Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services
SDG : SL9735
Project : New Bedford Harbor
Column ID : B
Instrument ID : GC07

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	TCX	DCB	
Initial Calibration	WG243328-1	12/22/18	16:40	8.136	21.41	
Initial Calibration	WG243328-2	12/22/18	17:07	8.158	21.42	
Initial Calibration	WG243328-3	12/22/18	17:35	8.169	21.43	
Initial Calibration	WG243328-4	12/22/18	18:03	8.167	21.43	
Initial Calibration	WG243328-5	12/22/18	18:31	8.166	21.42	
Initial Calibration	WG243328-6	12/22/18	18:59	8.164	21.43	
Independent Source	WG243328-7	12/22/18	19:26			
Independent Source	WG243328-8	12/22/18	19:54			
Initial Calibration	WG243328-9	12/22/18	20:22			
Initial Calibration	WG243328-16	12/22/18	23:37			
Initial Calibration	WG243328-23	12/23/18	02:52			
Initial Calibration	WG243328-24	12/23/18	03:19			
Initial Calibration	WG243328-25	12/23/18	03:47			
Continuing Calibrati	WG245120-1	01/23/19	14:01	7.871	21.06	
Method Blank Sample	WG245126-1	01/23/19	16:52	7.848	21.05	
Laboratory Control S	WG245126-3	01/23/19	17:20	7.87	21.06	
Matrix Spike	WG245126-4	01/23/19	18:16	7.881	21.06	
Matrix Spike Duplica	WG245126-5	01/23/19	18:44	7.882	21.06	
MW01-100418	SL9735-1RE	01/23/19	19:12	7.879	21.06	
MW03-100318	SL9735-2RE	01/23/19	19:39	7.88	21.06	
MW04A-100318	SL9735-3RE	01/23/19	20:07	7.883	21.06	
MW05-100318	SL9735-4RE	01/23/19	20:35	7.882	21.06	
MW05-100318-REP	SL9735-5RE	01/23/19	21:03	7.88	21.06	
MW06-100418	SL9735-6RE	01/23/19	21:31	7.881	21.06	
MW07A-100318	SL9735-7RE	01/23/19	21:58	7.88	21.06	
EB-001-100318	SL9735-8RE	01/23/19	22:26	7.883	21.06	
Continuing Calibrati	WG245120-2	01/23/19	22:54	7.88	21.07	

Sample Data Section

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-1RE
Client ID: MW01-100418
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: 7MA496.D

Sample Date: 04-OCT-18
Received Date: 05-OCT-18
Extract Date: 23-JAN-19
Extracted By: BP/JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG245126

Analysis Date: 23-JAN-19
Analyst: BF
Analysis Method: SW846 8082A
Matrix: AQ
% Solids: NA
Report Date: 24-JAN-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Aroclor-1016	U	0.048	ug/L	1	.5	0.048	0.014
Aroclor-1221	U	0.048	ug/L	1	.5	0.048	0.019
Aroclor-1232	U	0.048	ug/L	1	.5	0.048	0.0086
Aroclor-1242	U	0.048	ug/L	1	.5	0.048	0.017
Aroclor-1248	U	0.048	ug/L	1	.5	0.048	0.019
Aroclor-1254	U	0.048	ug/L	1	.5	0.048	0.0079
Aroclor-1260	J	0.036	ug/L	1	.5	0.048	0.016
Total PCBs	J	0.036	ug/L	1	3.5	0.34	0.0079
Tetrachloro-M-Xylene		109.	%				
Decachlorobiphenyl		69.4	%				

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P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
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Form 10
Pesticide Identification Summary

Lab Name : Katahdin Analytical Services
Project : New Bedford Harbor

SDG : SL9735
Lab Sample ID : SL9735-1RE
Client Sample ID : MW01-100418

Column A
Instrument ID : GC07
Date Analyzed : 01/23/19
Time Analyzed : 19:12

Column B
Instrument ID : GC07
Date Analyzed : 01/23/19
Time Analyzed : 19:12

Analyte	Peak	Column	RT	Concentration	Mean	RPD
Aroclor-1260	1	A	15.19	.0229		
	2	A	16.49	.0225		
	3	A	17.97	.0314		
	4	A	18.61	.0553		
	5	A	19.99	.0424	.0349	
	1	B	15.21	.0225		
	2	B	16.52	.0193		
	3	B	17.88	.023		
	4	B	18.69	.0639		
	5	B	19.93	.0488	.0355	1.7

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Data File: \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA496.D
Report Date: 24-Jan-2019 14:17

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA496.D
Lab Smp Id: SL9735-1RE Client Smp ID: MW01-100418
Inj Date : 23-JAN-2019 19:12
Operator : BF Inst ID: gc07.i
Smp Info : SL9735-1RE
Misc Info : WG245120,WG245126,WG243328-1
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07MA23.b\PCB133.m
Meth Date : 24-Jan-2019 12:00 bflanders Quant Type: ESTD
Cal Date : 23-DEC-2018 04:43 Cal File: 7LL864.D
Als bottle: 74
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: TSW8082.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: INSPIRON1

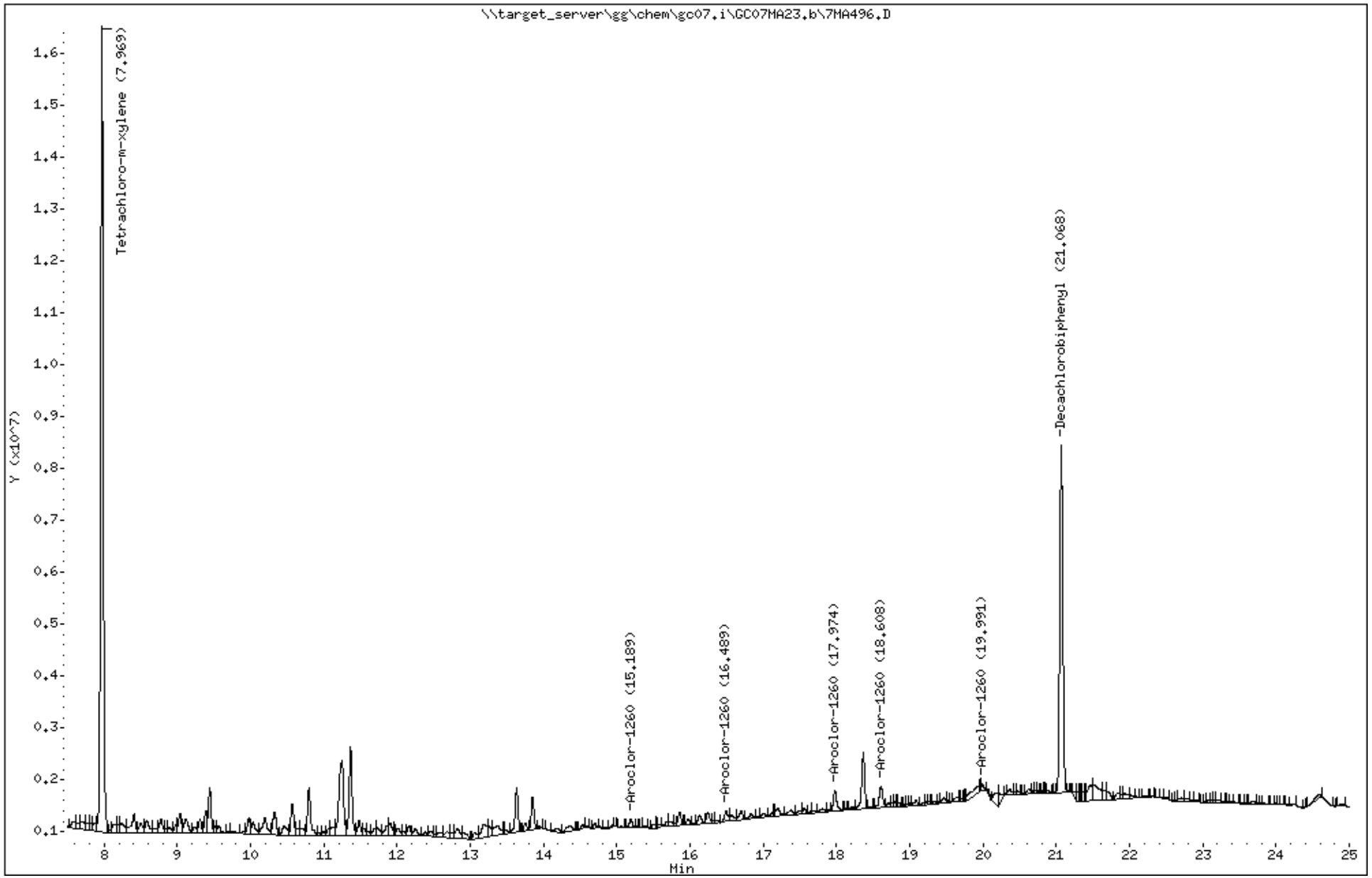
Concentration Formula: Amt * DF * Vt*(1/Vo)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.040	Sample Volume (L)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/mL)	FINAL (ug/L)	TARGET RANGE	RATIO	REVIEW CODE
$ 3 Tetrachloro-m-xylene						CAS #: 877-09-8		
7.969	7.971	-0.002	15527111	0.10368	0.0997			
9 Aroclor-1260						CAS #: 11096-82-5		
15.189	15.193	-0.004	147001	0.02385	0.0229	80.00- 120.00	100.00(aM)	M5
16.489	16.491	-0.002	203694	0.02344	0.0225	94.69- 142.03	138.57	M5
17.974	17.979	-0.005	388702	0.03262	0.0314	89.28- 133.92	264.42	M5
18.607	18.616	-0.009	413293	0.05747	0.0553	72.48- 108.72	281.15	M5
19.990	20.001	-0.011	130694	0.04406	0.0424	0.00- 0.00	88.91	M5
Average of Peak Concentrations =					0.0349			
M 1 Total PCBs						CAS #:		
			256676	0.03629	0.0349		(a)	
$ 12 Decachlorobiphenyl						CAS #: 2051-24-3		
21.067	21.071	-0.004	6698006	0.06707	0.0645		(M)	M5

BF
3:09 pm, Jan 24, 2019

Data File: \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA496.D
Date : 23-JAN-2019 19:12
Client ID: MW01-100418
Instrument: gc07.i
Sample Info: SL9735-1RE
Purge Volume: 1.0
Operator: BF
Column phase: ZB-MultiResidue-1
Column diameter: 0.53



Data File: 7MA496.D
Report Date: 24-Jan-2019 14:17

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07MA23.b\GC07MA23.b\7MA496.D
Lab Smp Id: SL9735-1RE Client Smp ID: MW01-100418
Inj Date : 23-JAN-2019 19:12
Operator : BF Inst ID: gc07.i
Smp Info : SL9735-1RE
Misc Info : WG245120,WG245126,WG243328-1
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07MA23.b\PCB133.m\PCB133.m
Meth Date : 24-Jan-2019 12:02 bflanders Quant Type: ESTD
Cal Date : 23-DEC-2018 17:10 Cal File: 7LL891.D
Als bottle: 74
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: TSW8082.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * Vt*(1/Vo)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.040	Sample Volume (L)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/mL)	FINAL (ug/L)	TARGET RANGE	RATIO	REVIEW CODE
$ 2 Tetrachloro-m-xylene					CAS #: 877-09-8			
7.879	7.880	-0.001	5250873	0.10930	0.105			
9 Aroclor-1260					CAS #: 11096-82-5			
15.213	15.215	-0.002	45966	0.02344	0.0225	80.00- 120.00	100.00(a)	
16.518	16.523	-0.005	50769	0.02010	0.0193	94.69- 142.03	110.45	
17.884	17.888	-0.004	96442	0.02398	0.0230	89.28- 133.92	209.81	
18.691	18.702	-0.011	153153	0.06643	0.0639	72.48- 108.72	333.19	
19.934	19.935	-0.001	50743	0.05081	0.0488	0.00- 0.00	110.39	
		Average of Peak Concentrations =			0.0355			
M 1 Total PCBs					CAS #:			
			79414	0.03695	0.0355		(a)	
$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
21.061	21.065	-0.004	2180796	0.06947	0.0668			

Data File: \\target_server\gc\chem\gc07.i\GC07MA23.b\GC07MA23.b\7MA496.D
Date : 23-JAN-2019 19:12
Client ID: MW01-100418
Sample Info: SL9735-1RE
Purge Volume: 1.0
Column phase: ZB-MultiResidue-2

Instrument: gc07.i
Operator: BF
Column diameter: 0.53

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-2RE
Client ID: MW03-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: 7MA497.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 23-JAN-19
Extracted By: BP/JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG245126

Analysis Date: 23-JAN-19
Analyst: BF
Analysis Method: SW846 8082A
Matrix: AQ
% Solids: NA
Report Date: 24-JAN-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Aroclor-1016	U	0.048	ug/L	1	.5	0.048	0.014
Aroclor-1221	U	0.048	ug/L	1	.5	0.048	0.019
Aroclor-1232	U	0.048	ug/L	1	.5	0.048	0.0085
Aroclor-1242	U	0.048	ug/L	1	.5	0.048	0.017
Aroclor-1248	U	0.048	ug/L	1	.5	0.048	0.019
Aroclor-1254	U	0.048	ug/L	1	.5	0.048	0.0078
Aroclor-1260	U	0.048	ug/L	1	.5	0.048	0.016
Total PCBs	U	0.33	ug/L	1	3.5	0.33	0.0078
Tetrachloro-M-Xylene		89.2	%				
Decachlorobiphenyl		44.7	%				

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Data File: \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA497.D
Report Date: 24-Jan-2019 14:17

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA497.D
Lab Smp Id: SL9735-2RE Client Smp ID: MW03-100318
Inj Date : 23-JAN-2019 19:39
Operator : BF Inst ID: gc07.i
Smp Info : SL9735-2RE
Misc Info : WG245120,WG245126,WG243328-1
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07MA23.b\PCB133.m
Meth Date : 24-Jan-2019 12:00 bflanders Quant Type: ESTD
Cal Date : 23-DEC-2018 04:43 Cal File: 7LL864.D
Als bottle: 75
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: TSW8082.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * Vt*(1/Vo)*1000 * CpndVariable

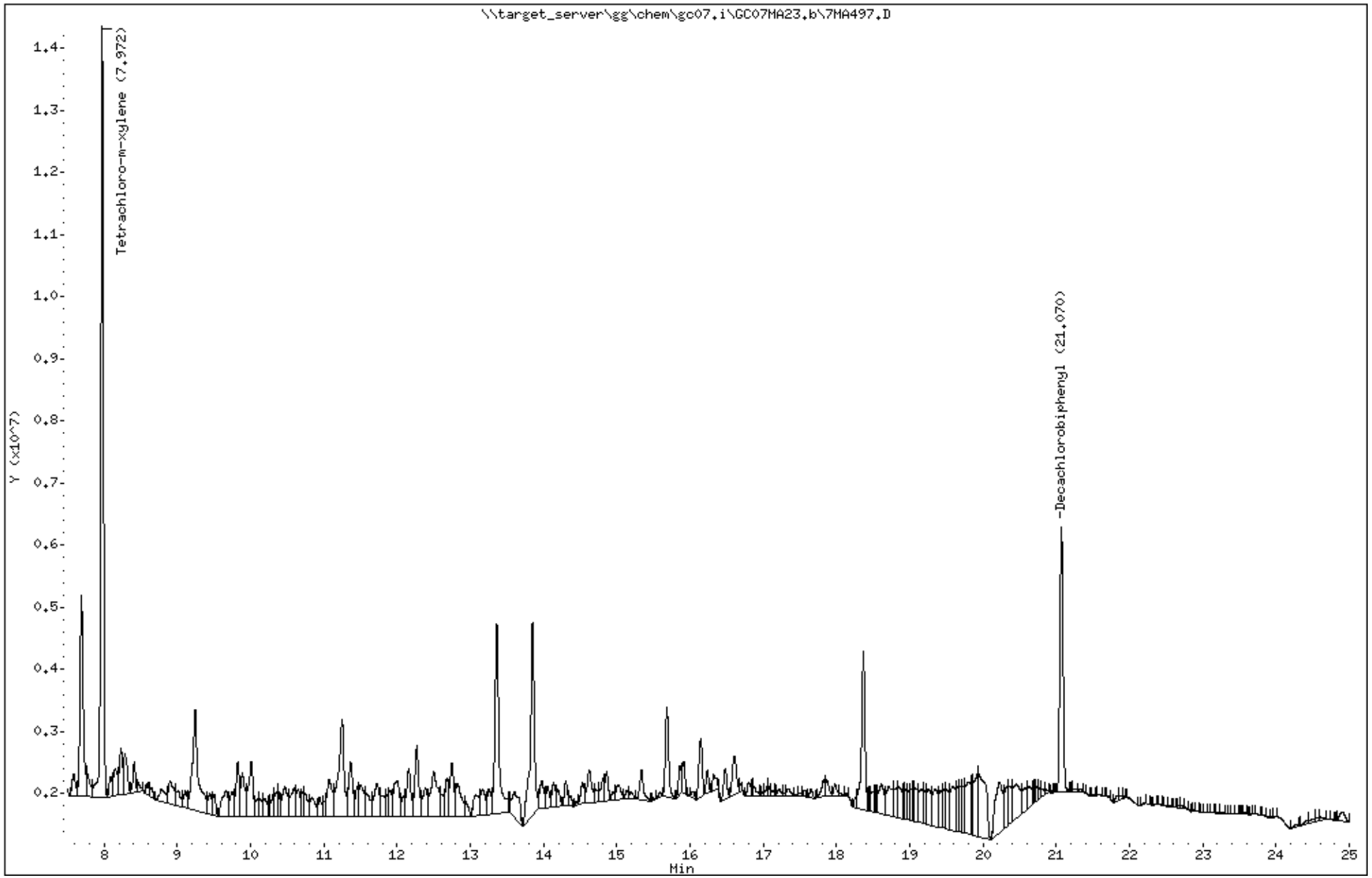
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.050	Sample Volume (L)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/mL)	CONCENTRATIONS FINAL (ug/L)	TARGET RANGE	RATIO	REVIEW CODE
$ 3 Tetrachloro-m-xylene						CAS #: 877-09-8		
7.971	7.971	0.000	12409728	0.08286	0.0789			
$ 12 Decachlorobiphenyl						CAS #: 2051-24-3		
21.070	21.071	-0.001	4260014	0.04266	0.0406		(aR)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
R - Spike/Surrogate failed recovery limits.

Data File: \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA497.D
Date : 23-JAN-2019 19:39
Client ID: MW03-100318
Instrument: gc07.i
Sample Info: SL9735-2RE
Purge Volume: 1.1
Operator: BF
Column phase: ZB-MultiResidue-1
Column diameter: 0.53



Katahdin Analytical Services 2000018

REISSUE2

Data File: 7MA497.D
Report Date: 24-Jan-2019 14:17

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07MA23.b\GC07MA23.b\7MA497.D
Lab Smp Id: SL9735-2RE Client Smp ID: MW03-100318
Inj Date : 23-JAN-2019 19:39
Operator : BF Inst ID: gc07.i
Smp Info : SL9735-2RE
Misc Info : WG245120,WG245126,WG243328-1
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07MA23.b\PCB133.m\PCB133.m
Meth Date : 24-Jan-2019 12:02 bflanders Quant Type: ESTD
Cal Date : 23-DEC-2018 17:10 Cal File: 7LL891.D
Als bottle: 75
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: TSW8082.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * Vt*(1/Vo)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.050	Sample Volume (L)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/mL)	FINAL (ug/L)	TARGET RANGE	RATIO	REVIEW CODE
$ 2 Tetrachloro-m-xylene						CAS #: 877-09-8		
7.880	7.880	0.000	4283659	0.08917	0.0849			
$ 12 Decachlorobiphenyl						CAS #: 2051-24-3		
21.060	21.065	-0.005	1403012	0.04469	0.0426			(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\goo7.i\GC07MA23.b\GC07MA23.b\7MA497.D
Date : 23-JAN-2019 19:39
Client ID: MW03-100318
Sample Info: SL97735-2RE
Purge Volume: 1.1
Column phase: ZB-MultiResidue-2

Instrument: goo7.i
Operator: BF
Column diameter: 0.53

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-3RE
Client ID: MW04A-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: 7MA498.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 23-JAN-19
Extracted By: BP/JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG245126

Analysis Date: 23-JAN-19
Analyst: BF
Analysis Method: SW846 8082A
Matrix: AQ
% Solids: NA
Report Date: 24-JAN-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Aroclor-1016	U	0.049	ug/L	1	.5	0.049	0.015
Aroclor-1221	U	0.049	ug/L	1	.5	0.049	0.020
Aroclor-1232	U	0.049	ug/L	1	.5	0.049	0.0087
Aroclor-1242	U	0.049	ug/L	1	.5	0.049	0.018
Aroclor-1248	U	0.049	ug/L	1	.5	0.049	0.020
Aroclor-1254	U	0.049	ug/L	1	.5	0.049	0.0080
Aroclor-1260	J	0.026	ug/L	1	.5	0.049	0.017
Total PCBs	J	0.026	ug/L	1	3.5	0.34	0.0080
Tetrachloro-M-Xylene		73.8	%				
Decachlorobiphenyl		46.8	%				

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Katahdin
ANALYTICAL SERVICES

Form 10
Pesticide Identification Summary

Lab Name : Katahdin Analytical Services
Project : New Bedford Harbor

SDG : SL9735
Lab Sample ID : SL9735-3RE
Client Sample ID : MW04A-100318

Column A
Instrument ID : GC07
Date Analyzed : 01/23/19
Time Analyzed : 20:07

Column B
Instrument ID : GC07
Date Analyzed : 01/23/19
Time Analyzed : 20:07

Analyte	Peak	Column	RT	Concentration	Mean	RPD
Aroclor-1260	1	A	15.2	.0243		
	2	A	16.5	.0213		
	3	A	17.97	.0228		
	4	A	18.61	.0262		
	5	A	19.99	.0344	.0258	
	1	B	15.22	.013		
	2	B	16.52	.0162		
	3	B	17.89	.0173		
	4	B	18.7	0		
	5	B	19.93	.0338	.0201	24.8

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Data File: \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA498.D
Report Date: 24-Jan-2019 14:17

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA498.D
Lab Smp Id: SL9735-3RE Client Smp ID: MW04A-100318
Inj Date : 23-JAN-2019 20:07
Operator : BF Inst ID: gc07.i
Smp Info : SL9735-3RE
Misc Info : WG245120,WG245126,WG243328-1
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07MA23.b\PCB133.m
Meth Date : 24-Jan-2019 12:00 bflanders Quant Type: ESTD
Cal Date : 23-DEC-2018 04:43 Cal File: 7LL864.D
Als bottle: 76
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: TSW8082.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * Vt*(1/Vo)*1000 * CpndVariable

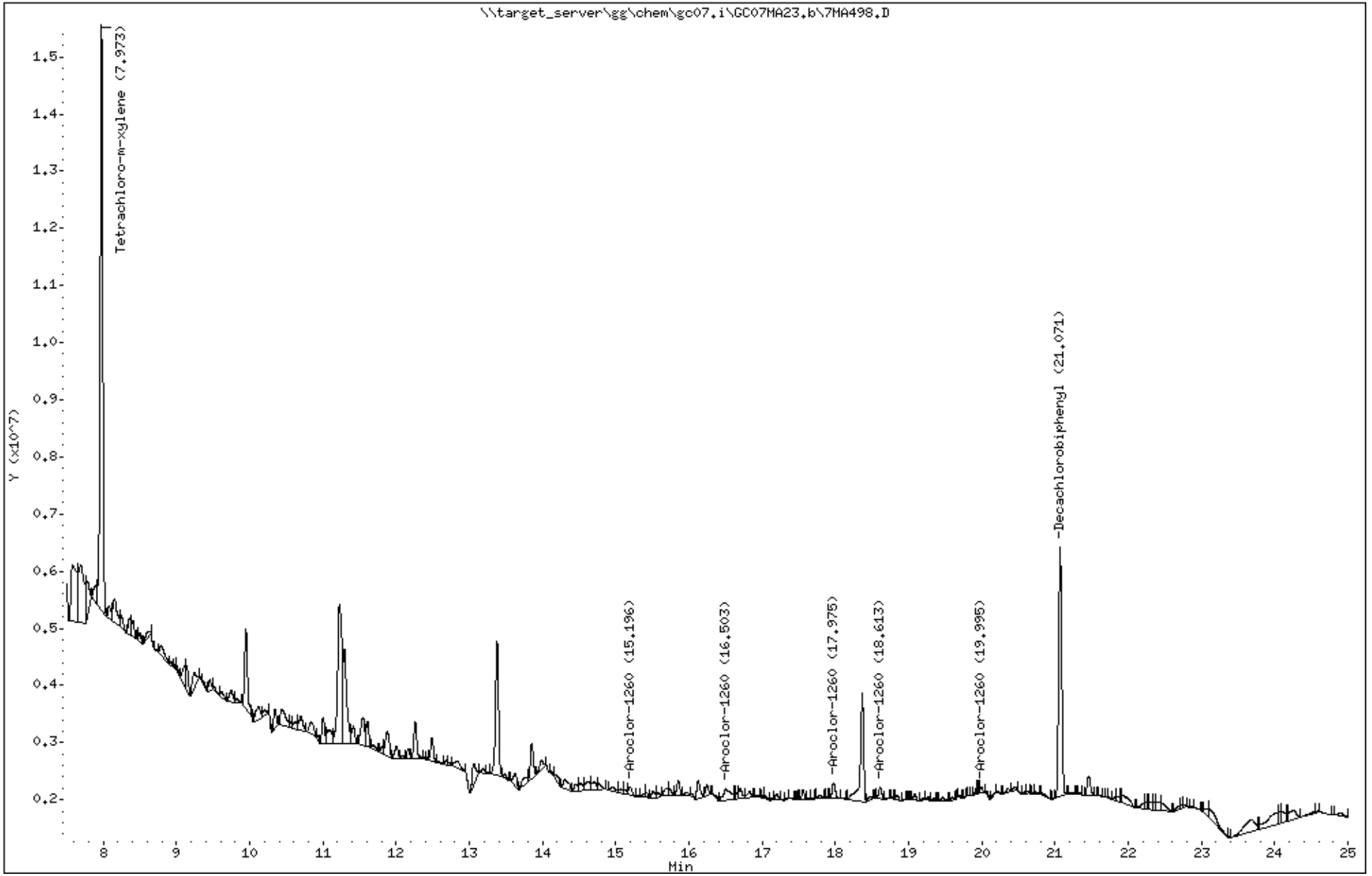
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.020	Sample Volume (L)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/mL)	CONCENTRATIONS FINAL (ug/L)	TARGET RANGE	RATIO	REVIEW CODE
$ 3 Tetrachloro-m-xylene					CAS #: 877-09-8			
7.972	7.971	0.001	10237272	0.06836	0.0670		(M)	M5
9 Aroclor-1260					CAS #: 11096-82-5			
15.196	15.193	0.003	153080	0.02483	0.0243	80.00- 120.00	100.00(aM)	M5
16.502	16.491	0.011	188825	0.02173	0.0213	94.69- 142.03	123.35	M5
17.974	17.979	-0.005	277373	0.02328	0.0228	89.28- 133.92	181.19	M5
18.612	18.616	-0.004	192512	0.02677	0.0262	72.48- 108.72	125.76	M5
19.994	20.001	-0.007	104244	0.03515	0.0344	0.00- 0.00	68.10	M5
Average of Peak Concentrations =					0.0258			
M 1 Total PCBs					CAS #:			
			183206	0.02635	0.0258		(a)	
$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
21.071	21.071	0.000	4376292	0.04382	0.0430		(aR)	

BF

3:10 pm, Jan 24, 2019

Data File: \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA498.D
Date : 23-JAN-2019 20:07
Client ID: MW04A-100318
Instrument: gc07.i
Sample Info: SL9735-3RE
Purge Volume: 1.0
Operator: BF
Column phase: ZB-MultiResidue-1
Column diameter: 0.53



Katahdin Analytical Services 2000024

REISSUE2

Data File: 7MA498.D
Report Date: 24-Jan-2019 14:17

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07MA23.b\GC07MA23.b\7MA498.D
Lab Smp Id: SL9735-3RE Client Smp ID: MW04A-100318
Inj Date : 23-JAN-2019 20:07
Operator : BF Inst ID: gc07.i
Smp Info : SL9735-3RE
Misc Info : WG245120,WG245126,WG243328-1
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07MA23.b\PCB133.m\PCB133.m
Meth Date : 24-Jan-2019 12:02 bflanders Quant Type: ESTD
Cal Date : 23-DEC-2018 17:10 Cal File: 7LL891.D
Als bottle: 76
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: TSW8082.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * Vt*(1/Vo)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.020	Sample Volume (L)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/mL)	CONCENTRATIONS FINAL (ug/L)	TARGET RANGE	RATIO	REVIEW CODE
$ 2 Tetrachloro-m-xylene						CAS #: 877-09-8		
7.883	7.880	0.003	3543599	0.07376	0.0723			
9 Aroclor-1260						CAS #: 11096-82-5		
15.215	15.215	0.000	25936	0.01323	0.0130	80.00- 120.00	100.00(a)	
16.523	16.523	0.000	41801	0.01655	0.0162	94.69- 142.03	161.17	
17.888	17.888	0.000	71026	0.01766	0.0173	89.28- 133.92	273.85	
18.702	18.702	0.000	0	0.000	0.000	72.48- 108.72	0.00	
19.926	19.935	-0.009	34461	0.03451	0.0338	0.00- 0.00	132.87	
Average of Peak Concentrations =					0.0201			
M 1 Total PCBs						CAS #:		
			34644	0.01639	0.0161		(a)	
$ 12 Decachlorobiphenyl						CAS #: 2051-24-3		
21.061	21.065	-0.004	1469643	0.04682	0.0459		(aM)	M5

BF
3:10 pm, Jan 24, 2019

Data File: \\target_server\gc\chem\goo7.i\GC07MA23.b\GC07MA23.b\7MA498.D
Date : 23-JAN-2019 20:07
Client ID: MW04A-100318
Sample Info: SL97735-3RE
Purge Volume: 1.0
Column phase: ZB-MultiResidue-2

Instrument: goo7.i
Operator: BF
Column diameter: 0.53

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-4RE
Client ID: MW05-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: 7MA499.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 23-JAN-19
Extracted By: BP/JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG245126

Analysis Date: 23-JAN-19
Analyst: BF
Analysis Method: SW846 8082A
Matrix: AQ
% Solids: NA
Report Date: 24-JAN-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Aroclor-1016	U	0.048	ug/L	1	.5	0.048	0.014
Aroclor-1221	U	0.048	ug/L	1	.5	0.048	0.019
Aroclor-1232	U	0.048	ug/L	1	.5	0.048	0.0085
Aroclor-1242	U	0.048	ug/L	1	.5	0.048	0.017
Aroclor-1248	U	0.048	ug/L	1	.5	0.048	0.019
Aroclor-1254	U	0.048	ug/L	1	.5	0.048	0.0078
Aroclor-1260		0.068	ug/L	1	.5	0.048	0.016
Total PCBs	J	0.068	ug/L	1	3.5	0.33	0.0078
Tetrachloro-M-Xylene		103.	%				
Decachlorobiphenyl		65.6	%				

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ANALYTICAL SERVICES

Form 10
Pesticide Identification Summary

Lab Name : Katahdin Analytical Services
Project : New Bedford Harbor

SDG : SL9735
Lab Sample ID : SL9735-4RE
Client Sample ID : MW05-100318

Column A
Instrument ID : GC07
Date Analyzed : 01/23/19
Time Analyzed : 20:35

Column B
Instrument ID : GC07
Date Analyzed : 01/23/19
Time Analyzed : 20:35

Analyte	Peak	Column	RT	Concentration	Mean	RPD
Aroclor-1260	1	A	15.19	.0489		
	2	A	16.49	.0378		
	3	A	17.98	.0763		
	4	A	18.61	.0813		
	5	A	20	.0975	.0684	
	1	B	15.22	.0465		
	2	B	16.52	.0562		
	3	B	17.89	.0676		
	4	B	18.7	0		
	5	B	19.93	.0644	.0587	15.3

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Data File: \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA499.D
Report Date: 24-Jan-2019 14:17

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA499.D
Lab Smp Id: SL9735-4RE Client Smp ID: MW05-100318
Inj Date : 23-JAN-2019 20:35
Operator : BF Inst ID: gc07.i
Smp Info : SL9735-4RE
Misc Info : WG245120,WG245126,WG243328-1
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07MA23.b\PCB133.m
Meth Date : 24-Jan-2019 12:00 bflanders Quant Type: ESTD
Cal Date : 23-DEC-2018 04:43 Cal File: 7LL864.D
Als bottle: 77
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: TSW8082.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * Vt*(1/Vo)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.050	Sample Volume (L)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/mL)	CONCENTRATIONS FINAL (ug/L)	TARGET RANGE	RATIO	REVIEW CODE
$ 3 Tetrachloro-m-xylene					CAS #: 877-09-8			
7.973	7.971	0.002	14089837	0.09408	0.0896			
9 Aroclor-1260					CAS #: 11096-82-5			
15.190	15.193	-0.003	316325	0.05131	0.0489	80.00- 120.00	100.00(M)	M5
16.493	16.491	0.002	345107	0.03971	0.0378	94.69- 142.03	109.10	M5
17.980	17.979	0.001	955007	0.08015	0.0763	89.28- 133.92	301.91	M5
18.611	18.616	-0.005	614069	0.08539	0.0813	72.48- 108.72	194.13	M5
19.995	20.001	-0.006	303703	0.10239	0.0975	0.00- 0.00	96.01	M5
		Average of Peak Concentrations =			0.0684			
M 1 Total PCBs					CAS #:			
			506842	0.07179	0.0684		(a)	
$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
21.070	21.071	-0.001	6318690	0.06327	0.0603			

BF

3:10 pm, Jan 24, 2019

Data File: \\target_server\gc\chem\gc07.i\GC07MA23.b\7MA499.D
Date : 23-JAN-2019 20:35
Client ID: MW05-100318
Sample Info: SL97735-4RE
Purge Volume: 1.1
Column phase: ZB-MultiResidue-1

Instrument: gc07.i
Operator: BF
Column diameter: 0.53

Data File: 7MA499.D
Report Date: 24-Jan-2019 14:17

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07MA23.b\GC07MA23.b\7MA499.D
Lab Smp Id: SL9735-4RE Client Smp ID: MW05-100318
Inj Date : 23-JAN-2019 20:35
Operator : BF Inst ID: gc07.i
Smp Info : SL9735-4RE
Misc Info : WG245120,WG245126,WG243328-1
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07MA23.b\PCB133.m\PCB133.m
Meth Date : 24-Jan-2019 12:02 bflanders Quant Type: ESTD
Cal Date : 23-DEC-2018 17:10 Cal File: 7LL891.D
Als bottle: 77
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: TSW8082.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * Vt*(1/Vo)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.050	Sample Volume (L)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/mL)	FINAL (ug/L)	TARGET RANGE	RATIO	REVIEW CODE
$ 2 Tetrachloro-m-xylene					CAS #: 877-09-8			
7.882	7.880	0.002	4944964	0.10293	0.0980		(M)	M3
9 Aroclor-1260					CAS #: 11096-82-5			
15.215	15.215	0.000	95794	0.04886	0.0465	80.00- 120.00	100.00	
16.522	16.523	-0.001	148972	0.05899	0.0562	94.69- 142.03	155.51	
17.887	17.888	-0.001	285418	0.07096	0.0676	89.28- 133.92	297.95	
18.702	18.702	0.000	0	0.000	0.000	72.48- 108.72	0.00	
19.934	19.935	-0.001	67529	0.06762	0.0644	0.00- 0.00	70.49	
		Average of Peak Concentrations =			0.0587			
M 1 Total PCBs					CAS #:			
			119542	0.04929	0.0469		(a)	
$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
21.062	21.065	-0.003	2060043	0.06562	0.0625			

BF
3:10 pm, Jan 24, 2019

Data File: \\target_server\gg\chem\goo7.i\GC07MA23.b\GC07MA23.b\7MA499.D
Date : 23-JAN-2019 20:35
Client ID: MW05-100318
Sample Info: SL9735-4RE
Purge Volume: 1.1
Column phase: ZB-MultiResidue-2

Instrument: goo7.i
Operator: BF
Column diameter: 0.53

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ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-5RE
Client ID: MW05-100318-REP
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: 7MA500.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 23-JAN-19
Extracted By: BP/JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG245126

Analysis Date: 23-JAN-19
Analyst: BF
Analysis Method: SW846 8082A
Matrix: AQ
% Solids: NA
Report Date: 24-JAN-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Aroclor-1016	U	0.048	ug/L	1	.5	0.048	0.014
Aroclor-1221	U	0.048	ug/L	1	.5	0.048	0.019
Aroclor-1232	U	0.048	ug/L	1	.5	0.048	0.0085
Aroclor-1242	U	0.048	ug/L	1	.5	0.048	0.017
Aroclor-1248	U	0.048	ug/L	1	.5	0.048	0.019
Aroclor-1254	U	0.048	ug/L	1	.5	0.048	0.0078
Aroclor-1260	U	0.048	ug/L	1	.5	0.048	0.016
Total PCBs	U	0.33	ug/L	1	3.5	0.33	0.0078
Tetrachloro-M-Xylene		95.6	%				
Decachlorobiphenyl		63.6	%				

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Data File: \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA500.D
Report Date: 24-Jan-2019 14:17

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Data file : \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA500.D
Lab Smp Id: SL9735-5RE Client Smp ID: MW05-100318-REP
Inj Date : 23-JAN-2019 21:03
Operator : BF Inst ID: gc07.i
Smp Info : SL9735-5RE
Misc Info : WG245120,WG245126,WG243328-1
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07MA23.b\PCB133.m
Meth Date : 24-Jan-2019 12:00 bflanders Quant Type: ESTD
Cal Date : 23-DEC-2018 04:43 Cal File: 7LL864.D
Als bottle: 78
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: TSW8082.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * Vt*(1/Vo)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.050	Sample Volume (L)
Cpnd Variable		Local Compound Variable

				CONCENTRATIONS ON-COL (ug/mL)	FINAL (ug/L)	TARGET RANGE	RATIO	REVIEW CODE
RT	EXP RT	DLT RT	RESPONSE					
$ 3 Tetrachloro-m-xylene						CAS #: 877-09-8		
7.969	7.971	-0.002	13266758	0.08859	0.0844			
$ 12 Decachlorobiphenyl						CAS #: 2051-24-3		
21.068	21.071	-0.003	6341591	0.06350	0.0605			

Data File: \\target_server\gc\chem\gc07.i\GC07MA23.b\7MA500.D
Date : 23-JAN-2019 21:03
Client ID: MW05-100318-REP
Sample Info: SL9735-SRE
Purge Volume: 1.1
Column phase: ZB-MultiResidue-1
Instrument: gc07.i
Operator: BF
Column diameter: 0.53
\\target_server\gc\chem\gc07.i\GC07MA23.b\7MA500.D
Y (x10^8)
Min
-Tetrachloro-m-xylene (7.970)
-Decachlorobiphenyl (21.068)

Data File: 7MA500.D
Report Date: 24-Jan-2019 14:17

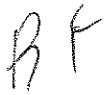
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07MA23.b\GC07MA23.b\7MA500.D
Lab Smp Id: SL9735-5RE Client Smp ID: MW05-100318-REP
Inj Date : 23-JAN-2019 21:03
Operator : BF Inst ID: gc07.i
Smp Info : SL9735-5RE
Misc Info : WG245120,WG245126,WG243328-1
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07MA23.b\PCB133.m\PCB133.m
Meth Date : 24-Jan-2019 12:02 bflanders Quant Type: ESTD
Cal Date : 23-DEC-2018 17:10 Cal File: 7LL891.D
Als bottle: 78
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: TSW8082.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * Vt*(1/Vo)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.050	Sample Volume (L)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/mL)	CONCENTRATIONS FINAL (ug/L)	TARGET RANGE	RATIO		REVIEW CODE
$ 2 Tetrachloro-m-xylene						CAS #: 877-09-8			
7.880	7.880	0.000	4589940	0.09554	0.0910			(M)	M3
$ 12 Decachlorobiphenyl						CAS #: 2051-24-3			
21.058	21.065	-0.007	1600507	0.05099	0.0486				



3:10 pm, Jan 24, 2019

QC Flag Legend

M - Compound response manually integrated.

Data File: \\target_server\gc\chem\goo7.i\GC07MA23.b\GC07MA23.b\7MA500.D
Date : 23-JAN-2019 21:03
Client ID: MW05-100318-REP
Sample Info: SL9735-5RE
Purge Volume: 1.1
Column phase: ZB-MultiResidue-2
Instrument: goo7.i
Operator: BF
Column diameter: 0.53
\\target_server\gc\chem\goo7.i\GC07MA23.b\GC07MA23.b\7MA500.D
Min
Y (x10^8)
-Tetrachloro-m-xylene (7.881)
-Decachlorobiphenyl (21.059)

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-6RE
Client ID: MW06-100418
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: 7MA501.D

Sample Date: 04-OCT-18
Received Date: 05-OCT-18
Extract Date: 23-JAN-19
Extracted By: BP/JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG245126

Analysis Date: 23-JAN-19
Analyst: BF
Analysis Method: SW846 8082A
Matrix: AQ
% Solids: NA
Report Date: 24-JAN-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Aroclor-1016	U	0.048	ug/L	1	.5	0.048	0.014
Aroclor-1221	U	0.048	ug/L	1	.5	0.048	0.019
Aroclor-1232	U	0.048	ug/L	1	.5	0.048	0.0085
Aroclor-1242	U	0.048	ug/L	1	.5	0.048	0.017
Aroclor-1248	U	0.048	ug/L	1	.5	0.048	0.019
Aroclor-1254	U	0.048	ug/L	1	.5	0.048	0.0078
Aroclor-1260	JJ	0.024	ug/L	1	.5	0.048	0.016
Total PCBs	J	0.024	ug/L	1	3.5	0.33	0.0078
Tetrachloro-M-Xylene		102.	%				
Decachlorobiphenyl		71.4	%				

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Form 10
Pesticide Identification Summary

Lab Name : Katahdin Analytical Services
Project : New Bedford Harbor

SDG : SL9735
Lab Sample ID : SL9735-6RE
Client Sample ID : MW06-100418

Column A
Instrument ID : GC07
Date Analyzed : 01/23/19
Time Analyzed : 21:31

Column B
Instrument ID : GC07
Date Analyzed : 01/23/19
Time Analyzed : 21:31

Analyte	Peak	Column	RT	Concentration	Mean	RPD
Aroclor-1260	1	A	15.19	.0212		
	2	A	16.49	.0192		
	3	A	17.98	.0255		
	4	A	18.61	.0302		
	5	A	20	0	.024	
	1	B	15.21	.0108		
	2	B	16.51	.00307		
	3	B	17.89	.0196		
	4	B	18.7	0		
	5	B	19.93	.0173	.0127	61.6

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Data File: \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA501.D
Report Date: 24-Jan-2019 14:17

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA501.D
Lab Smp Id: SL9735-6RE Client Smp ID: MW06-100418
Inj Date : 23-JAN-2019 21:31
Operator : BF Inst ID: gc07.i
Smp Info : SL9735-6RE
Misc Info : WG245120,WG245126,WG243328-1
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07MA23.b\PCB133.m
Meth Date : 24-Jan-2019 12:00 bflanders Quant Type: ESTD
Cal Date : 23-DEC-2018 04:43 Cal File: 7LL864.D
Als bottle: 79
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: TSW8082.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * Vt*(1/Vo)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.050	Sample Volume (L)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/mL)	CONCENTRATIONS FINAL (ug/L)	TARGET RANGE	RATIO	REVIEW CODE
$ 3 Tetrachloro-m-xylene					CAS #: 877-09-8			
7.972	7.971	0.001	14322325	0.09564	0.0911		(M)	M5
9 Aroclor-1260					CAS #: 11096-82-5			
15.190	15.193	-0.003	137178	0.02225	0.0212	80.00- 120.00	100.00(a)	
16.487	16.491	-0.004	175355	0.02018	0.0192	94.69- 142.03	127.83	
17.975	17.979	-0.004	318993	0.02677	0.0255	89.28- 133.92	232.54	
18.610	18.616	-0.006	228405	0.03176	0.0302	72.48- 108.72	166.50	
20.001	20.001	0.000	0	0.000	0.000	0.00- 0.00	0.00	
Average of Peak Concentrations =					0.0240			
M 1 Total PCBs					CAS #:			
			171986	0.02019	0.0192		(a)	
$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
21.068	21.071	-0.003	6914774	0.06924	0.0659			

BF

3:10 pm, Jan 24, 2019

Data File: \\target_server\gc\chem\gc07.i\GC07MA23.b\7MA501.D
Date : 23-JAN-2019 21:31
Client ID: MW06-100418
Sample Info: SL97735-6RE
Purge Volume: 1.1
Column phase: ZB-Multi Residue-1

Instrument: gc07.i
Operator: BF
Column diameter: 0.53

Data File: 7MA501.D
Report Date: 24-Jan-2019 14:17

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07MA23.b\GC07MA23.b\7MA501.D
Lab Smp Id: SL9735-6RE Client Smp ID: MW06-100418
Inj Date : 23-JAN-2019 21:31
Operator : BF Inst ID: gc07.i
Smp Info : SL9735-6RE
Misc Info : WG245120,WG245126,WG243328-1
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07MA23.b\PCB133.m\PCB133.m
Meth Date : 24-Jan-2019 12:02 bflanders Quant Type: ESTD
Cal Date : 23-DEC-2018 17:10 Cal File: 7LL891.D
Als bottle: 79
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: TSW8082.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * Vt*(1/Vo)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.050	Sample Volume (L)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/mL)	CONCENTRATIONS FINAL (ug/L)	TARGET RANGE	RATIO	REVIEW CODE
$ 2 Tetrachloro-m-xylene					CAS #: 877-09-8			
7.881	7.880	0.001	4918626	0.10239	0.0975			
9 Aroclor-1260					CAS #: 11096-82-5			
15.214	15.215	-0.001	22300	0.01137	0.0108	80.00- 120.00	100.00(a)	
16.509	16.523	-0.014	8151	0.00323	0.00307	94.69- 142.03	36.55	
17.886	17.888	-0.002	82609	0.02054	0.0196	89.28- 133.92	370.44	
18.702	18.702	0.000	0	0.000	0.000	72.48- 108.72	0.00	
19.932	19.935	-0.003	18192	0.01822	0.0173	0.00- 0.00	81.58	
Average of Peak Concentrations =					0.0127			
M 1 Total PCBs					CAS #:			
			26250	0.01067	0.0102		(a)	
$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
21.059	21.065	-0.006	2241254	0.07140	0.0680			

Data File: \\target_server\gc\chem\gc07.i\GC07MA23.b\GC07MA23.b\7MA501.D
Date : 23-JAN-2019 21:31
Client ID: MW06-100418
Sample Info: SL97735-6RE
Purge Volume: 1.1
Column phase: ZB-MultiResidue-2

Instrument: gc07.i
Operator: BF
Column diameter: 0.53

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-7RE
Client ID: MW07A-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: 7MA502.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 23-JAN-19
Extracted By: BP/JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG245126

Analysis Date: 23-JAN-19
Analyst: BF
Analysis Method: SW846 8082A
Matrix: AQ
% Solids: NA
Report Date: 24-JAN-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Aroclor-1016	U	0.048	ug/L	1	.5	0.048	0.014
Aroclor-1221	U	0.048	ug/L	1	.5	0.048	0.019
Aroclor-1232	U	0.048	ug/L	1	.5	0.048	0.0085
Aroclor-1242	U	0.048	ug/L	1	.5	0.048	0.017
Aroclor-1248	U	0.048	ug/L	1	.5	0.048	0.019
Aroclor-1254	U	0.048	ug/L	1	.5	0.048	0.0078
Aroclor-1260	J	0.032	ug/L	1	.5	0.048	0.016
Total PCBs	J	0.032	ug/L	1	3.5	0.33	0.0078
Tetrachloro-M-Xylene	*	113.	%				
Decachlorobiphenyl		87.6	%				

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ANALYTICAL SERVICES

Form 10
Pesticide Identification Summary

Lab Name : Katahdin Analytical Services
Project : New Bedford Harbor

SDG : SL9735
Lab Sample ID : SL9735-7RE
Client Sample ID : MW07A-100318

Column A
Instrument ID : GC07
Date Analyzed : 01/23/19
Time Analyzed : 21:58

Column B
Instrument ID : GC07
Date Analyzed : 01/23/19
Time Analyzed : 21:58

Analyte	Peak	Column	RT	Concentration	Mean	RPD
Aroclor-1260	1	A	15.19	.0293		
	2	A	16.49	.0323		
	3	A	17.98	.0346		
	4	A	18.62	.024		
	5	A	20	.0255	.0291	
	1	B	15.21	.024		
	2	B	16.52	.0276		
	3	B	17.89	.0311		
	4	B	18.7	0		
	5	B	19.93	.0436	.0315	7.9

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Data File: \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA502.D
Report Date: 24-Jan-2019 14:50

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA502.D
Lab Smp Id: SL9735-7RE Client Smp ID: MW07A-100318
Inj Date : 23-JAN-2019 21:58
Operator : BF Inst ID: gc07.i
Smp Info : SL9735-7RE
Misc Info : WG245120,WG245126,WG243328-1
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07MA23.b\PCB133.m
Meth Date : 24-Jan-2019 12:00 bflanders Quant Type: ESTD
Cal Date : 23-DEC-2018 04:43 Cal File: 7LL864.D
Als bottle: 80
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: TSW8082.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: INSPIRON1

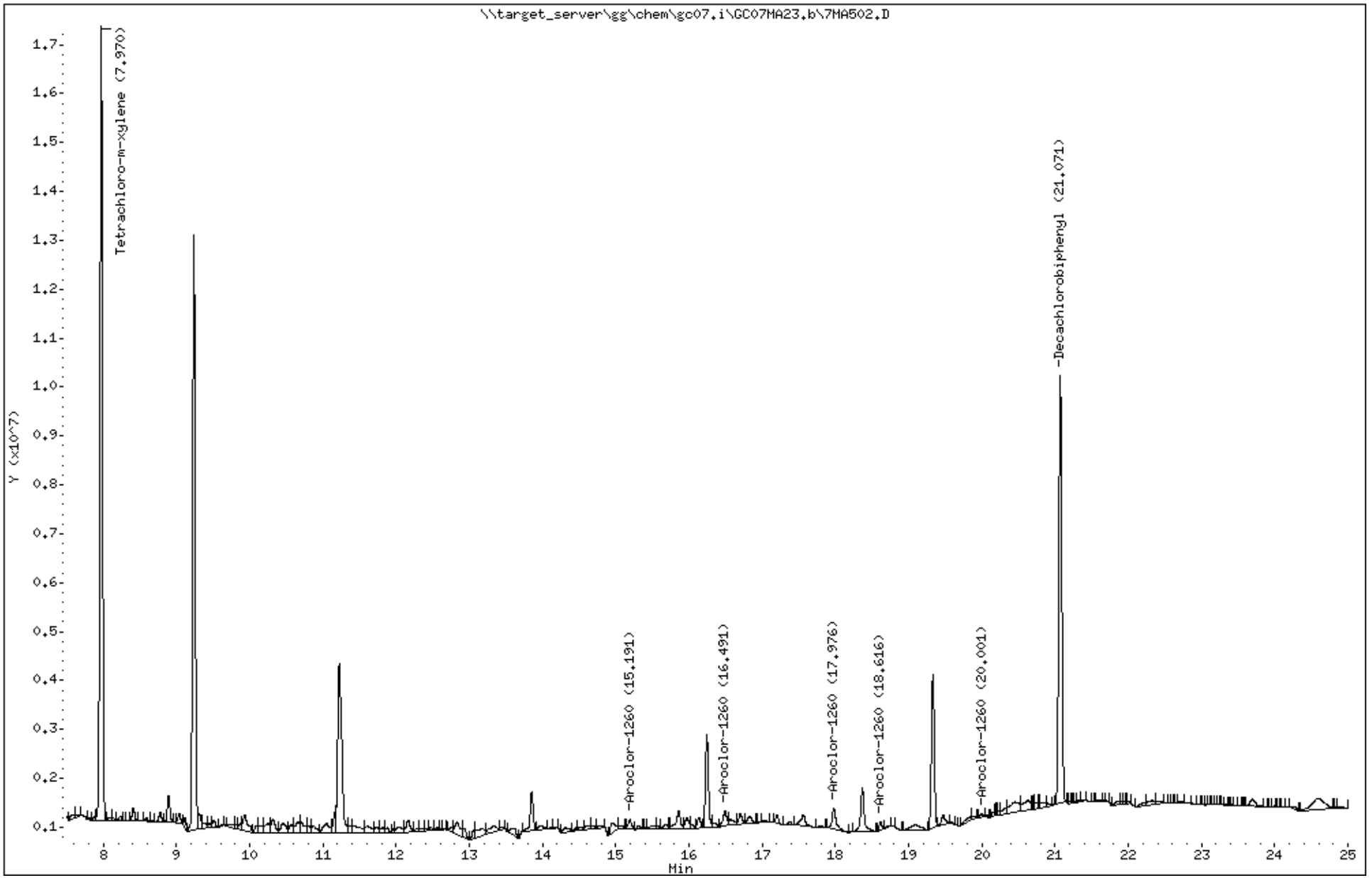
Concentration Formula: Amt * DF * Vt*(1/Vo)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.050	Sample Volume (L)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/mL)	CONCENTRATIONS FINAL (ug/L)	TARGET RANGE	RATIO	REVIEW CODE
$ 3 Tetrachloro-m-xylene					CAS #: 877-09-8			
7.969	7.971	-0.002	16237525	0.10842	0.103			
9 Aroclor-1260					CAS #: 11096-82-5			
15.191	15.193	-0.002	189849	0.03080	0.0293	80.00- 120.00	100.00(aM)	M5
16.491	16.491	0.000	295211	0.03397	0.0323	94.69- 142.03	155.50	M5
17.976	17.979	-0.003	432563	0.03630	0.0346	89.28- 133.92	227.85	M5
18.616	18.616	0.000	180853	0.02515	0.0240	72.48- 108.72	95.26	M5
20.001	20.001	0.000	79536	0.02682	0.0255	0.00- 0.00	41.89	M5
Average of Peak Concentrations =					0.0291			
M 1 Total PCBs					CAS #:			
			235602	0.03061	0.0291		(a)	
$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
21.071	21.071	0.000	8747897	0.08760	0.0834		(M)	M5

BF
3:10 pm, Jan 24, 2019

Data File: \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA502.D
Date : 23-JAN-2019 21:58
Client ID: MW07A-100318
Instrument: gc07.i
Sample Info: SL9735-7RE
Purge Volume: 1.1
Operator: BF
Column phase: ZB-MultiResidue-1
Column diameter: 0.53



Katahdin Analytical Services 2000047

REISSUE2

Data File: 7MA502.D
Report Date: 24-Jan-2019 14:50

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07MA23.b\GC07MA23.b\7MA502.D
Lab Smp Id: SL9735-7RE Client Smp ID: MW07A-100318
Inj Date : 23-JAN-2019 21:58
Operator : BF Inst ID: gc07.i
Smp Info : SL9735-7RE
Misc Info : WG245120,WG245126,WG243328-1
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07MA23.b\PCB133.m\PCB133.m
Meth Date : 24-Jan-2019 12:02 bflanders Quant Type: ESTD
Cal Date : 23-DEC-2018 17:10 Cal File: 7LL891.D
Als bottle: 80
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: TSW8082.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * Vt*(1/Vo)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.050	Sample Volume (L)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/mL)	FINAL (ug/L)	TARGET RANGE	RATIO	REVIEW CODE
$ 2 Tetrachloro-m-xylene					CAS #: 877-09-8			
7.880	7.880	0.000	5432340	0.11308	0.108			(R)
9 Aroclor-1260					CAS #: 11096-82-5			
15.213	15.215	-0.002	49313	0.02515	0.0240	80.00- 120.00	100.00	(a)
16.516	16.523	-0.007	73077	0.02894	0.0276	94.69- 142.03	148.19	
17.890	17.888	0.002	131284	0.03264	0.0311	89.28- 133.92	266.23	
18.702	18.702	0.000	0	0.000	0.000	72.48- 108.72	0.00	
19.928	19.935	-0.007	45707	0.04577	0.0436	0.00- 0.00	92.69	
		Average of Peak Concentrations =			0.0315			
M 1 Total PCBs					CAS #:			
			59876	0.02650	0.0252			(a)
$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
21.061	21.065	-0.004	2347729	0.07479	0.0712			

Data File: \\target_server\gg\chem\goo7.i\GC07MA23.b\GC07MA23.b\7MA502.D
Date : 23-JAN-2019 21:58
Client ID: MW07A-100318
Sample Info: SL9735-7RE
Purge Volume: 1.1
Column phase: ZB-MultiResidue-2

Instrument: goo7.i
Operator: BF
Column diameter: 0.53

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: AECOM Environment
Lab ID: SL9735-8RE
Client ID: EB-001-100318
Project: New Bedford Harbor
SDG: SL9735
Lab File ID: 7MA503.D

Sample Date: 03-OCT-18
Received Date: 05-OCT-18
Extract Date: 23-JAN-19
Extracted By: BP/JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG245126

Analysis Date: 23-JAN-19
Analyst: BF
Analysis Method: SW846 8082A
Matrix: AQ
% Solids: NA
Report Date: 24-JAN-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Aroclor-1016	U	0.049	ug/L	1	.5	0.049	0.015
Aroclor-1221	U	0.049	ug/L	1	.5	0.049	0.020
Aroclor-1232	U	0.049	ug/L	1	.5	0.049	0.0087
Aroclor-1242	U	0.049	ug/L	1	.5	0.049	0.018
Aroclor-1248	U	0.049	ug/L	1	.5	0.049	0.020
Aroclor-1254	U	0.049	ug/L	1	.5	0.049	0.0080
Aroclor-1260		0.52	ug/L	1	.5	0.049	0.017
Total PCBs		0.52	ug/L	1	3.5	0.34	0.0080
Tetrachloro-M-Xylene		101.	%				
Decachlorobiphenyl		59.1	%				

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ANALYTICAL SERVICES

Form 10
Pesticide Identification Summary

Lab Name : Katahdin Analytical Services
Project : New Bedford Harbor

SDG : SL9735
Lab Sample ID : SL9735-8RE
Client Sample ID : EB-001-100318

Column A
Instrument ID : GC07
Date Analyzed : 01/23/19
Time Analyzed : 22:26

Column B
Instrument ID : GC07
Date Analyzed : 01/23/19
Time Analyzed : 22:26

Analyte	Peak	Column	RT	Concentration	Mean	RPD
Aroclor-1260	1	A	15.19	.399		
	2	A	16.49	.43		
	3	A	17.98	.585		
	4	A	18.61	.556		
	5	A	20	.637	.521	
	1	B	15.21	.336		
	2	B	16.52	.307		
	3	B	17.89	.479		
	4	B	18.7	.509		
	5	B	19.93	.562	.438	17.3

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Data File: \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA503.D
Report Date: 24-Jan-2019 14:17

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA503.D
Lab Smp Id: SL9735-8RE Client Smp ID: EB-001-100318
Inj Date : 23-JAN-2019 22:26
Operator : BF Inst ID: gc07.i
Smp Info : SL9735-8RE
Misc Info : WG245120,WG245126,WG243328-1
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07MA23.b\PCB133.m
Meth Date : 24-Jan-2019 12:00 bflanders Quant Type: ESTD
Cal Date : 23-DEC-2018 04:43 Cal File: 7LL864.D
Als bottle: 81
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: TSW8082.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: INSPIRON1

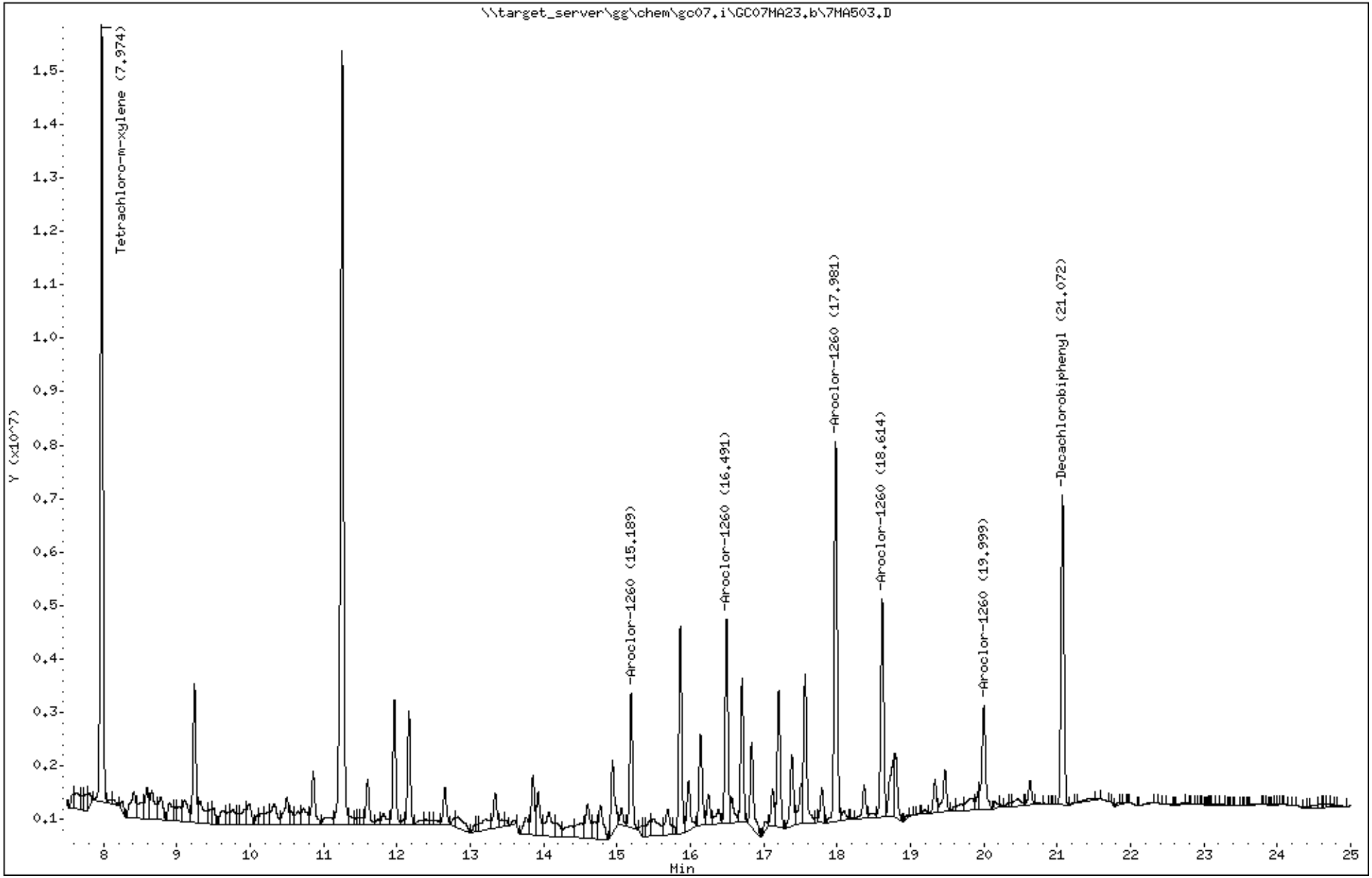
Concentration Formula: Amt * DF * Vt*(1/Vo)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.020	Sample Volume (L)
Cpnd Variable		Local Compound Variable

				CONCENTRATIONS ON-COL (ug/mL)	FINAL (ug/L)	TARGET RANGE	RATIO	REVIEW CODE
$ 3 Tetrachloro-m-xylene					CAS #: 877-09-8			
7.974	7.971	0.003	14522114	0.09697	0.0951		(M)	M5
9 Aroclor-1260					CAS #: 11096-82-5			
15.189	15.193	-0.004	2507307	0.40673	0.399	80.00- 120.00	100.00(M)	M5
16.490	16.491	-0.001	3807975	0.43814	0.430	94.69- 142.03	151.88	M5
17.980	17.979	0.001	7106609	0.59642	0.585	89.28- 133.92	283.44	M5
18.614	18.616	-0.002	4077178	0.56698	0.556	72.48- 108.72	162.61	M5
19.999	20.001	-0.002	1927848	0.64998	0.637	0.00- 0.00	76.89	M5
		Average of Peak Concentrations =			0.521			
M 1 Total PCBs					CAS #:			
			3885383	0.53165	0.521			
$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
21.072	21.071	0.001	5797453	0.05805	0.0569			

BF
3:10 pm, Jan 24, 2019

Data File: \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA503.D
Date : 23-JAN-2019 22:26
Client ID: EB-001-100318
Instrument: gc07.i
Sample Info: SL9735-8RE
Purge Volume: 1.0
Operator: BF
Column phase: ZB-MultiResidue-1
Column diameter: 0.53



Katahdin Analytical Services 2000053

REISSUE2

Data File: 7MA503.D
Report Date: 24-Jan-2019 14:17

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07MA23.b\GC07MA23.b\7MA503.D
Lab Smp Id: SL9735-8RE Client Smp ID: EB-001-100318
Inj Date : 23-JAN-2019 22:26
Operator : BF Inst ID: gc07.i
Smp Info : SL9735-8RE
Misc Info : WG245120,WG245126,WG243328-1
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07MA23.b\PCB133.m\PCB133.m
Meth Date : 24-Jan-2019 12:02 bflanders Quant Type: ESTD
Cal Date : 23-DEC-2018 17:10 Cal File: 7LL891.D
Als bottle: 81
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: TSW8082.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * Vt*(1/Vo)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.020	Sample Volume (L)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/mL)	CONCENTRATIONS FINAL (ug/L)	TARGET RANGE	RATIO	REVIEW CODE
$ 2 Tetrachloro-m-xylene					CAS #: 877-09-8			
7.883	7.880	0.003	4871620	0.10141	0.0994		(M)	M5
9 Aroclor-1260					CAS #: 11096-82-5			
15.214	15.215	-0.001	671011	0.34223	0.336	80.00- 120.00	100.00	
16.523	16.523	0.000	789975	0.31283	0.307	94.69- 142.03	117.73	
17.889	17.888	0.001	1965814	0.48874	0.479	89.28- 133.92	292.96	
18.703	18.702	0.001	1196269	0.51891	0.509	72.48- 108.72	178.28	
19.933	19.935	-0.002	572655	0.57344	0.562	0.00- 0.00	85.34	
		Average of Peak Concentrations =			0.438			
M 1 Total PCBs					CAS #:			
			1039144	0.44723	0.438			
$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
21.063	21.065	-0.002	1852981	0.05903	0.0579			

BF

3:10 pm, Jan 24, 2019

Data File: \\target_server\gg\chem\goo7.i\GC07MA23.b\GC07MA23.b\7MA503.D
Date : 23-JAN-2019 22:26
Client ID: EB-001-100318
Sample Info: SL9735-8RE
Purge Volume: 1.0
Column phase: ZB-MultiResidue-2

Instrument: goo7.i
Operator: BF
Column diameter: 0.53

Standards Data Section

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
Project : New Bedford Harbor
Lab File IDs : 7LL889.D 7LL890.D 7LL891.D 7LL864.D 7LL892.D 7LL893.D

SDG: SL9735
Instrument ID: GC07
Column ID: A
Calibration Date(s): 22-DEC-18 16:40, 23-DEC-18 18:06

	0.050000(Level 1	0.100000(Level 2	0.250000(Level 3	1.0000 Level 4	2.5000 Level 5	10.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Aroclor-1221(2)	4363480	4244100	3825732	3461667	3256439	2569589	AVG		3620168		18.5103(	20.00000	O
Aroclor-1221(1)	1806640	1730770	1606328	1478719	1477392	1180838	AVG		1546781		14.4066(	20.00000	O
Aroclor-1232(3)	4227760	3696160	3261904	3206136	2998215	2630602	AVG		3336796		16.7342(	20.00000	O
Aroclor-1232(2)	1980800	1890540	1716020	1609192	1456842	1263904	AVG		1652883		16.2258(	20.00000	O
Aroclor-1232(5)	1666620	1613360	1505912	1492406	1416979	1347187	AVG		1507077		7.88738	20.00000	O
Aroclor-1232(4)	1512320	1475590	1334012	1270203	1221502	1129271	AVG		1323816		11.1973(	20.00000	O
Aroclor-1232(1)	3464080	3399080	3048164	2890037	2482976	2069535	AVG		2892312		18.6352(	20.00000	O
Aroclor-1242(1)	3520140	3508810	3257792	2990440	2687469	2221154	AVG		3030968		16.7874(	20.00000	O
Aroclor-1242(5)	3337180	3337670	3163260	3100656	3010512	2861078	AVG		3135059		5.95824	20.00000	O
Aroclor-1242(3)	7123400	6815260	6316712	6015305	5622303	4712704	AVG		6100947		14.2249(	20.00000	O
Aroclor-1242(2)	2701400	2593660	2441400	2292248	2115801	1789461	AVG		2322328		14.3978(	20.00000	O
Aroclor-1242(4)	3010920	3001690	2860640	2665302	2617355	2320135	AVG		2746007		9.67782	20.00000	O
Aroclor-1016(3)	7533060	6950620	6863840	6451927	5948062	5300176	AVG		6507947		12.1939(	20.00000	O
Aroclor-1016(1)	3813460	3677680	3508044	3258267	2859772	2490511	AVG		3267956		15.5683(	20.00000	O
Aroclor-1016(5)	3163200	3068020	3048460	2810996	2639063	2562023	AVG		2881960		8.60961	20.00000	O
Aroclor-1016(4)	3223320	3097230	3062564	2814946	2725858	2602144	AVG		2921010		8.29430	20.00000	O
Aroclor-1016(2)	2815900	2711460	2647396	2489917	2265168	1999949	AVG		2488298		12.3307(	20.00000	O
Aroclor-1248(1)	4495520	3767660	3418920	3258273	3133090	2729249	AVG		3467119		17.5436(	20.00000	O
Aroclor-1248(5)	2993400	2795520	2592980	2540985	2589088	2433593	AVG		2657594		7.60852	20.00000	O
Aroclor-1248(4)	5729080	5319560	5178720	5015178	4821511	4293859	AVG		5059651		9.58102	20.00000	O
Aroclor-1248(3)	4840380	4573900	4253852	4172761	4087548	3524357	AVG		4242133		10.6053(	20.00000	O
Aroclor-1248(2)	4463900	4151470	3831624	3646730	3418113	3018164	AVG		3755000		13.7543(	20.00000	O
Aroclor-1254(2)	6649540	6217150	5676856	5828684	5756340	4951620	AVG		5846698		9.73645	20.00000	O
Aroclor-1254(3)	9050600	8804750	8292300	8675109	8536104	6910988	AVG		8378309		9.10122	20.00000	O
Aroclor-1254(5)	7121660	6824990	6205144	6575175	6713610	5789300	AVG		6538313		7.25992	20.00000	O
Aroclor-1254(4)	6699260	6401890	5878016	6136787	6102252	5299644	AVG		6086308		7.84651	20.00000	O
Aroclor-1254(1)	5999020	5711310	5065824	5163652	5108223	4320332	AVG		5228060		11.1423(	20.00000	O
Aroclor-1260(5)	3186300	3041660	2956320	3000628	2695775	2915481	AVG		2966027		5.45984	20.00000	O
Aroclor-1260(4)	7544960	7207380	7234164	7535698	6806820	6816934	AVG		7190993		4.54357	20.00000	O
Aroclor-1260(1)	6735240	6379060	6348644	6402742	5758978	5362677	AVG		6164557		8.17492	20.00000	O
Aroclor-1260(3)	12352940	12008930	12293084	12864523	11400586	10572271	AVG		11915389		6.83121	20.00000	O
Aroclor-1260(2)	9203360	8952020	8924160	9136386	8254843	7676935	AVG		8691284		6.90718	20.00000	O
Tetrachloro-m-xylene	14843200	14552000	15045860	15778755	14657070(	14979195	AVG		149760133		2.90819	20.00000	
Decachlorobiphenyl	11335500	10651150	10263080	98155700	88648440	89879340	AVG		99863463		9.62826	20.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL9735
Project : New Bedford Harbor
Instrument ID: GC07
Lab File IDs : 7LL889.D 7LL890.D 7LL891.D 7LL864.D 7LL892.D 7LL893.D
Column ID: B
Calibration Date(s): 22-DEC-18 16:40 23-DEC-18 18:06

	0.050000(Level 1	0.100000(Level 2	0.250000(Level 3	1.0000 Level 4	2.5000 Level 5	10.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Aroclor-1221(1)	621660	615820	559276	510326	533372	441004	AVG		546910		12.4622(	20.00000	O
Aroclor-1221(2)	1493460	1448380	1324824	1204458	1181932	965539	AVG		1269765		15.3322(	20.00000	O
Aroclor-1232(2)	633360	620200	550536	522759	479320	430222	AVG		539400		14.66527	20.00000	O
Aroclor-1232(1)	1196900	1167510	1057720	995157	893488	777708	AVG		1014747		15.86803	20.00000	O
Aroclor-1232(5)	604700	604530	525684	507774	487752	472059	AVG		533750		10.82934	20.00000	O
Aroclor-1232(3)	1141580	1110010	1031032	1024620	974046	902619	AVG		1030651		8.48476	20.00000	O
Aroclor-1232(4)	571520	564400	519540	502220	484246	463510	AVG		517573		8.36671	20.00000	O
Aroclor-1016(1)	1211140	1143150	1124996	1056676	934726	855432	AVG		1054353		12.81935	20.00000	O
Aroclor-1016(2)	2211520	2154680	2123460	2104356	1948911	1760529	AVG		2050576		8.14298	20.00000	O
Aroclor-1016(5)	1054780	987790	984720	933137	881961	865891	AVG		951380		7.51947	20.00000	O
Aroclor-1016(4)	1147720	1086950	1083340	1082983	980730	970108	AVG		1058638		6.52359	20.00000	O
Aroclor-1016(3)	1203680	1149210	1124012	1090443	976582	931235	AVG		1079194		9.71451	20.00000	O
Aroclor-1242(3)	2041120	2036580	1962360	1913530	1840254	1588421	AVG		1897044		8.92213	20.00000	O
Aroclor-1242(4)	1003220	996690	935080	868314	846716	792530	AVG		907092		9.39653	20.00000	O
Aroclor-1242(1)	1139020	1119630	1051868	962480	896086	778367	AVG		991242		14.06558	20.00000	O
Aroclor-1242(5)	1260720	1205970	1146512	1081938	1045022	980292	AVG		1120076		9.31974	20.00000	O
Aroclor-1242(2)	1027740	1014850	963064	909194	853093	746868	AVG		919135		11.61872	20.00000	O
Aroclor-1248(5)	1297160	1195420	1138380	1088242	1099502	1031212	AVG		1141653		8.20856	20.00000	O
Aroclor-1248(1)	1278760	1160360	1083932	1037457	1020160	934460	AVG		1085855		11.07769	20.00000	O
Aroclor-1248(3)	1621740	1465720	1403708	1366690	1331894	1203121	AVG		1398812		10.00861	20.00000	O
Aroclor-1248(2)	1543780	1391140	1292548	1223154	1204475	1066727	AVG		1286971		12.82523	20.00000	O
Aroclor-1248(4)	2182020	2013940	1915216	1854631	1863791	1622994	AVG		1908765		9.72788	20.00000	O
Aroclor-1254(1)	2174900	2085330	1871952	1908439	1929816	1643753	AVG		1935698		9.51685	20.00000	O
Aroclor-1254(2)	2174320	2061460	1837232	1924756	1946390	1644673	AVG		1931472		9.46981	20.00000	O
Aroclor-1254(4)	2186680	2137130	1953956	2040579	2069108	1805653	AVG		2032184		6.73820	20.00000	O
Aroclor-1254(3)	2906820	2803280	2596676	2735061	2786120	2307885	AVG		2689307		7.90254	20.00000	O
Aroclor-1254(5)	2214540	2130360	1988488	2070595	2166015	1890260	AVG		2076710		5.79579	20.00000	O
Aroclor-1260(3)	4026060	4040450	4225624	4334773	3984923	3521481	AVG		4022219		6.95725	20.00000	O
Aroclor-1260(1)	2146900	2071690	2013640	1923688	1850553	1757627	AVG		1960683		7.37452	20.00000	O
Aroclor-1260(5)	1009800	991100	992132	1017313	942779	1038672	AVG		998633		3.25882	20.00000	O
Aroclor-1260(2)	2632420	2547240	2559000	2629787	2469787	2313489	AVG		2525287		4.75045	20.00000	O
Aroclor-1260(4)	2379200	2320400	2284520	2378749	2272456	2196872	AVG		2305366		3.02716	20.00000	O
Tetrachloro-m-xylene	46442000	44799000	46758400	50767400	47852780	51620390	AVG		48039995		5.50685	20.00000	
Decachlorobiphenyl	33510000	32576000	31617200	31588750	28354260	30702280	AVG		31391415		5.64141	20.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

Report Date: 26-Dec-2018 13:11

Calibration History

Method : \\target_server\gg\chem\gc07.i\SrcMeths\PCB133.m
Start Cal Date: 22-DEC-2018 16:40
End Cal Date : 23-DEC-2018 18:06
Last Cal Level: 4
Last Cal Type : Continuing Calibration

Initial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 1 , Cal Amount: 0.05000		
23-DEC-2018 16:15	AR1268	7LL889.D
23-DEC-2018 13:29	AR1262	7LL883.D
23-DEC-2018 10:43	AR1248	7LL877.D
23-DEC-2018 07:56	AR1232	7LL871.D
23-DEC-2018 05:10	AR1221	7LL865.D
23-DEC-2018 00:05	AR1242	7LL854.D
22-DEC-2018 20:50	AR1254	7LL847.D
22-DEC-2018 17:07	AR1660	7LL839.D
Cal Level: 2 , Cal Amount: 0.10000		
23-DEC-2018 16:43	AR1268	7LL890.D
23-DEC-2018 13:56	AR1262	7LL884.D
23-DEC-2018 11:10	AR1248	7LL878.D
23-DEC-2018 08:24	AR1232	7LL872.D
23-DEC-2018 05:38	AR1221	7LL866.D
23-DEC-2018 00:32	AR1242	7LL855.D
22-DEC-2018 21:18	AR1254	7LL848.D
22-DEC-2018 17:35	AR1660	7LL840.D
Cal Level: 3 , Cal Amount: 0.25000		
23-DEC-2018 17:10	AR1268	7LL891.D
23-DEC-2018 14:24	AR1262	7LL885.D
23-DEC-2018 11:38	AR1248	7LL879.D
23-DEC-2018 08:52	AR1232	7LL873.D
23-DEC-2018 06:06	AR1221	7LL867.D
23-DEC-2018 01:00	AR1242	7LL856.D
22-DEC-2018 21:46	AR1254	7LL849.D
22-DEC-2018 18:03	AR1660	7LL841.D
Cal Level: 4 , Cal Amount: 1.00000		
23-DEC-2018 04:43	AR1268	7LL864.D
23-DEC-2018 04:15	AR1262	7LL863.D
23-DEC-2018 03:47	AR1248	7LL862.D
23-DEC-2018 03:19	AR1232	7LL861.D
23-DEC-2018 02:52	AR1221	7LL860.D
22-DEC-2018 23:37	AR1242	7LL853.D
22-DEC-2018 20:22	AR1254	7LL846.D
22-DEC-2018 16:40	AR1660	7LL838.D

Cal Level: 5 , Cal Amount: 2.50000		
23-DEC-2018 17:38	AR1268	7LL892.D
23-DEC-2018 14:52	AR1262	7LL886.D
23-DEC-2018 12:06	AR1248	7LL880.D
23-DEC-2018 09:20	AR1232	7LL874.D
23-DEC-2018 06:33	AR1221	7LL868.D
23-DEC-2018 01:28	AR1242	7LL857.D
22-DEC-2018 22:13	AR1254	7LL850.D
22-DEC-2018 18:31	AR1660	7LL842.D

Cal Level: 6 , Cal Amount: 10.00000		
23-DEC-2018 18:06	AR1268	7LL893.D
23-DEC-2018 15:20	AR1262	7LL887.D
23-DEC-2018 12:33	AR1248	7LL881.D
23-DEC-2018 09:47	AR1232	7LL875.D
23-DEC-2018 07:01	AR1221	7LL869.D
23-DEC-2018 01:56	AR1242	7LL858.D
22-DEC-2018 22:41	AR1254	7LL851.D
22-DEC-2018 18:59	AR1660	7LL843.D

Report Date: 26-Dec-2018 13:12

Calibration History

Method : \\target_server\gg\chem\gc07.i\SrcMeths\PCB133.m\PCB133.m
Start Cal Date: 22-DEC-2018 16:40
End Cal Date : 23-DEC-2018 18:06
Last Cal Level: 3
Last Cal Type : Continuing Calibration

Initial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 1 , Cal Amount: 0.05000		
23-DEC-2018 16:15	AR1268	7LL889.D
23-DEC-2018 13:29	AR1262	7LL883.D
23-DEC-2018 10:43	AR1248	7LL877.D
23-DEC-2018 07:56	AR1232	7LL871.D
23-DEC-2018 05:10	AR1221	7LL865.D
23-DEC-2018 00:05	AR1242	7LL854.D
22-DEC-2018 20:50	AR1254	7LL847.D
22-DEC-2018 17:07	AR1660	7LL839.D
Cal Level: 2 , Cal Amount: 0.10000		
23-DEC-2018 16:43	AR1268	7LL890.D
23-DEC-2018 13:56	AR1262	7LL884.D
23-DEC-2018 11:10	AR1248	7LL878.D
23-DEC-2018 08:24	AR1232	7LL872.D
23-DEC-2018 05:38	AR1221	7LL866.D
23-DEC-2018 00:32	AR1242	7LL855.D
22-DEC-2018 21:18	AR1254	7LL848.D
22-DEC-2018 17:35	AR1660	7LL840.D
Cal Level: 3 , Cal Amount: 0.25000		
23-DEC-2018 17:10	AR1268	7LL891.D
23-DEC-2018 14:24	AR1262	7LL885.D
23-DEC-2018 11:38	AR1248	7LL879.D
23-DEC-2018 08:52	AR1232	7LL873.D
23-DEC-2018 06:06	AR1221	7LL867.D
23-DEC-2018 01:00	AR1242	7LL856.D
22-DEC-2018 21:46	AR1254	7LL849.D
22-DEC-2018 18:03	AR1660	7LL841.D
Cal Level: 4 , Cal Amount: 1.00000		
23-DEC-2018 04:43	AR1268	7LL864.D
23-DEC-2018 04:15	AR1262	7LL863.D
23-DEC-2018 03:47	AR1248	7LL862.D
23-DEC-2018 03:19	AR1232	7LL861.D
23-DEC-2018 02:52	AR1221	7LL860.D
22-DEC-2018 23:37	AR1242	7LL853.D
22-DEC-2018 20:22	AR1254	7LL846.D
22-DEC-2018 16:40	AR1660	7LL838.D

Cal Level: 5 , Cal Amount: 2.50000		
23-DEC-2018 17:38	AR1268	7LL892.D
23-DEC-2018 14:52	AR1262	7LL886.D
23-DEC-2018 12:06	AR1248	7LL880.D
23-DEC-2018 09:20	AR1232	7LL874.D
23-DEC-2018 06:33	AR1221	7LL868.D
23-DEC-2018 01:28	AR1242	7LL857.D
22-DEC-2018 22:13	AR1254	7LL850.D
22-DEC-2018 18:31	AR1660	7LL842.D

Cal Level: 6 , Cal Amount: 10.00000		
23-DEC-2018 18:06	AR1268	7LL893.D
23-DEC-2018 15:20	AR1262	7LL887.D
23-DEC-2018 12:33	AR1248	7LL881.D
23-DEC-2018 09:47	AR1232	7LL875.D
23-DEC-2018 07:01	AR1221	7LL869.D
23-DEC-2018 01:56	AR1242	7LL858.D
22-DEC-2018 22:41	AR1254	7LL851.D
22-DEC-2018 18:59	AR1660	7LL843.D

Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL844.D
Report Date: 26-Dec-2018 13:04

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa01504
Sample Matrix: LIQUID Fraction: PCB
Lab Smp Id: WG243328-7
Level: LOW Operator: BF
Data Type: GC MULTI COMP SampleType: INSTSPIKE
SpikeList File: 1016ind.spk Quant Type: ESTD
Sublist File: AR1016.sub
Method File: \\target_server\gg\chem\gc07.i\GC07LL22.b\PCB133.m
Misc Info: WG243328,WG243328,WG243328-1,TL2688-1

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
6 Aroclor-1016	1.00	1.08	108.00	80-120

Data File: 7LL844.D
Report Date: 26-Dec-2018 13:05

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa01504
Sample Matrix: LIQUID Fraction: PCB
Lab Smp Id: WG243328-7
Level: LOW Operator: BF
Data Type: GC MULTI COMP SampleType: INSTSPIKE
SpikeList File: 1016ind.spk Quant Type: ESTD
Sublist File: AR1016.sub
Method File: \\target_server\gg\chem\gc07.i\GC07LL22.b\PCB133.m\PCB133.m
Misc Info: WG243328,WG243328,WG243328-1,TL2688-1

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
5 Aroclor-1016	1.00	1.08	108.00	80-120

Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL845.D
Report Date: 26-Dec-2018 13:04

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa01504
Sample Matrix: LIQUID Fraction: PCB
Lab Smp Id: WG243328-8
Level: LOW Operator: BF
Data Type: GC MULTI COMP SampleType: INSTSPIKE
SpikeList File: 1260ind.spk Quant Type: ESTD
Sublist File: AR1260.sub
Method File: \\target_server\gg\chem\gc07.i\GC07LL22.b\PCB133.m
Misc Info: WG243328,WG243328,WG243328-1,TL2688-1

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
9 Aroclor-1260	1.00	1.02	102.00	80-120

Data File: 7LL845.D
Report Date: 26-Dec-2018 13:05

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa01504
Sample Matrix: LIQUID Fraction: PCB
Lab Smp Id: WG243328-8
Level: LOW Operator: BF
Data Type: GC MULTI COMP SampleType: INSTSPIKE
SpikeList File: 1260ind.spk Quant Type: ESTD
Sublist File: AR1260.sub
Method File: \\target_server\gg\chem\gc07.i\GC07LL22.b\PCB133.m\PCB133.m
Misc Info: WG243328,WG243328,WG243328-1,TL2688-1

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
9 Aroclor-1260	1.00	1.05	105.00	80-120

Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL838.D
Report Date: 26-Dec-2018 13:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL838.D
Lab Smp Id: WG243328-1
Inj Date : 22-DEC-2018 16:40
Operator : BF   Inst ID: gc07.i
Smp Info : WG243328-1
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07LL22.b\PCB133.m
Meth Date : 24-Dec-2018 15:51 gc07.i   Quant Type: ESTD
Cal Date : 22-DEC-2018 23:37   Cal File: 7LL853.D
Als bottle: 63   Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: AR1660.sub
Target Version: 4.12   Sample Matrix: SOIL

Concentration Formula: Amt * DF * 1000*Vt*(100/(100-M))/Ws * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
M	0.00000	% Moisture
Ws	0.03000	Weight of Sample (Kg)
Cpnd Variable		Local Compound Variable

			AMOUNTS					
				CAL-AMT	ON-COL			
RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
$ 3 Tetrachloro-m-xylene						CAS #: 877-09-8		
8.246	8.232	0.014	3155751	0.02000	0.0211			
6 Aroclor-1016						CAS #: 12674-11-2		
10.257	10.242	0.015	3258267	1.00000	0.997	80.00- 120.00	100.00	
10.732	10.717	0.015	2489917	1.00000	1.00	158.77- 238.15	76.42	
11.511	11.493	0.018	6451927	1.00000	0.991	296.98- 445.46	198.02	
11.897	11.882	0.015	2814946	1.00000	0.964	114.78- 172.16	86.39	
12.677	12.660	0.017	2810996	1.00000	0.975	112.32- 168.48	86.27	
		Average of Peak Amounts =			0.98540			
9 Aroclor-1260						CAS #: 11096-82-5		
15.487	15.468	0.019	6402742	1.00000	1.04	80.00- 120.00	100.00	
16.791	16.770	0.021	9136386	1.00000	1.05	94.69- 142.03	142.69	
18.282	18.260	0.022	12864523	1.00000	1.08	89.28- 133.92	200.92	
18.919	18.897	0.022	7535698	1.00000	1.05	72.48- 108.72	117.69	
20.304	20.283	0.021	3000628	1.00000	1.01	0.00- 0.00	46.86	
		Average of Peak Amounts =			1.04600			
$ 12 Decachlorobiphenyl						CAS #: 2051-24-3		
21.396	21.372	0.024	1963114	0.02000	0.0196			

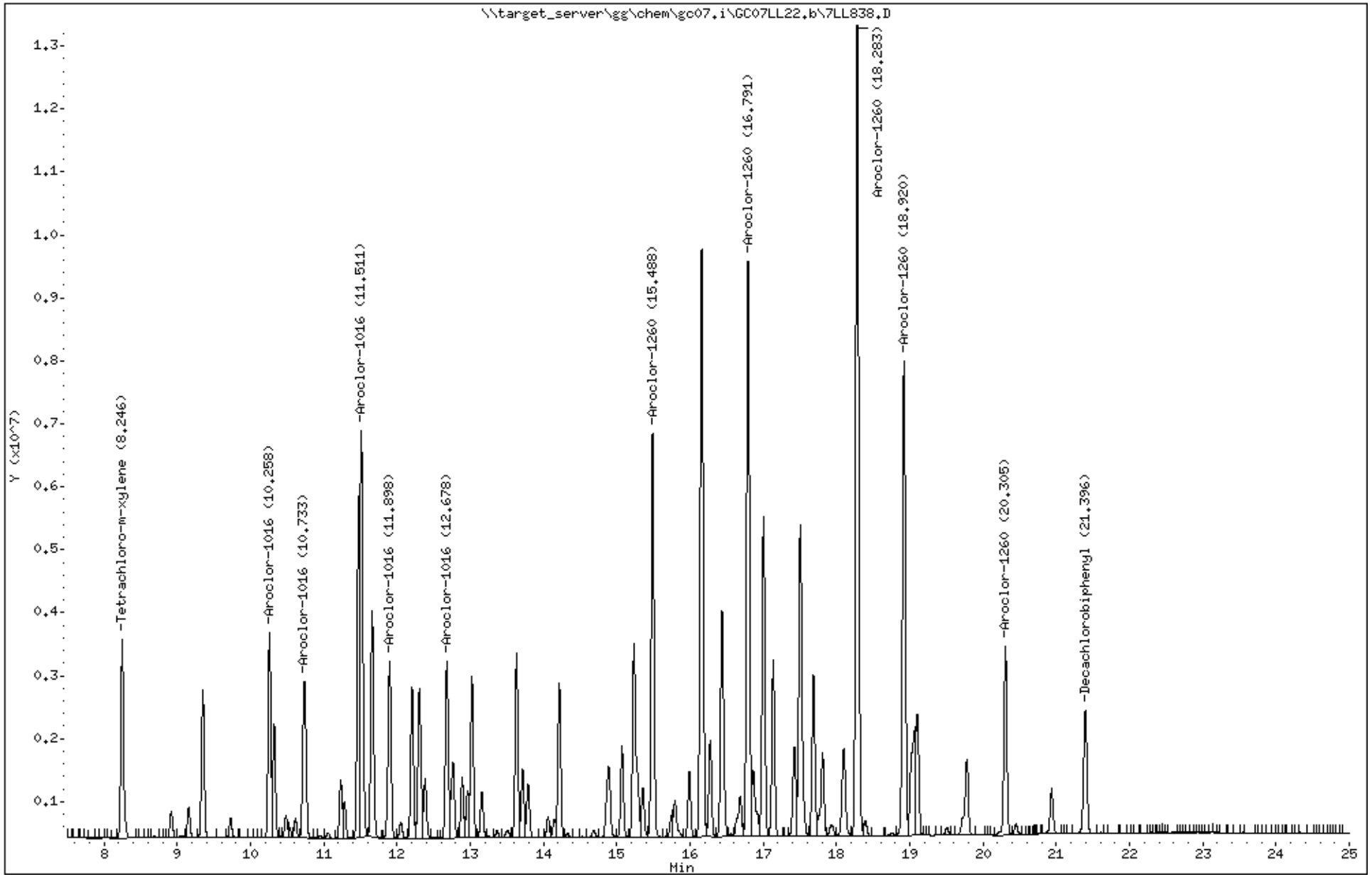
Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL838.D
Date : 22-DEC-2018 16:40
Client ID:
Sample Info: WG243328-1

Instrument: gc07.i

Operator: BF

Column phase: ZB-MultiResidue-1

Column diameter: 0.53



Katahdin Analytical Services 2000068

REISSUE2

Data File: 7LL838.D
Report Date: 26-Dec-2018 13:05

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07LL22.b\GC07LL22.b\7LL838.D
Lab Smp Id: WG243328-1
Inj Date : 22-DEC-2018 16:40
Operator : BF   Inst ID: gc07.i
Smp Info : WG243328-1
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07LL22.b\PCB133.m\PCB133.m
Meth Date : 24-Dec-2018 15:51 gc07.i   Quant Type: ESTD
Cal Date : 22-DEC-2018 16:40   Cal File: 7LL838.D
Als bottle: 63   Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: AR1660.sub
Target Version: 4.12   Sample Matrix: SOIL

Concentration Formula: Amt * DF * 1000*Vt*(100/(100-M))/Ws * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
M	0.00000	% Moisture
Ws	0.03000	Weight of Sample (Kg)
Cpnd Variable		Local Compound Variable

			AMOUNTS					
				CAL-AMT	ON-COL			
RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
$ 2 Tetrachloro-m-xylene						CAS #: 877-09-8		
8.136	8.145	-0.009	1015348	0.02000	0.0200			
5 Aroclor-1016						CAS #: 12674-11-2		
10.282	10.288	-0.006	1056676	1.00000	1.00	80.00- 120.00	100.00	
11.551	11.550	0.001	2104356	1.00000	1.00	158.77- 238.15	199.15	
11.694	11.695	-0.001	1090443	1.00000	1.00	296.98- 445.46	103.20	
12.024	12.026	-0.002	1082983	1.00000	1.00	114.78- 172.17	102.49	
12.761	12.758	0.003	933137	1.00000	1.00	112.32- 168.48	88.31	
Average of Peak Amounts =					1.00000			
9 Aroclor-1260						CAS #: 11096-82-5		
15.521	15.515	0.006	1923688	1.00000	1.00	80.00- 120.00	100.00	
16.834	16.826	0.008	2629787	1.00000	1.00	94.69- 142.03	136.71	
18.206	18.193	0.013	4334773	1.00000	1.00	89.28- 133.92	225.34	
19.026	19.015	0.011	2378749	1.00000	1.00	72.48- 108.72	123.66	
20.257	20.245	0.012	1017313	1.00000	1.00	0.00- 0.00	52.88	
Average of Peak Amounts =					1.00000			
$ 12 Decachlorobiphenyl						CAS #: 2051-24-3		
21.412	21.396	0.016	631775	0.02000	0.0200			

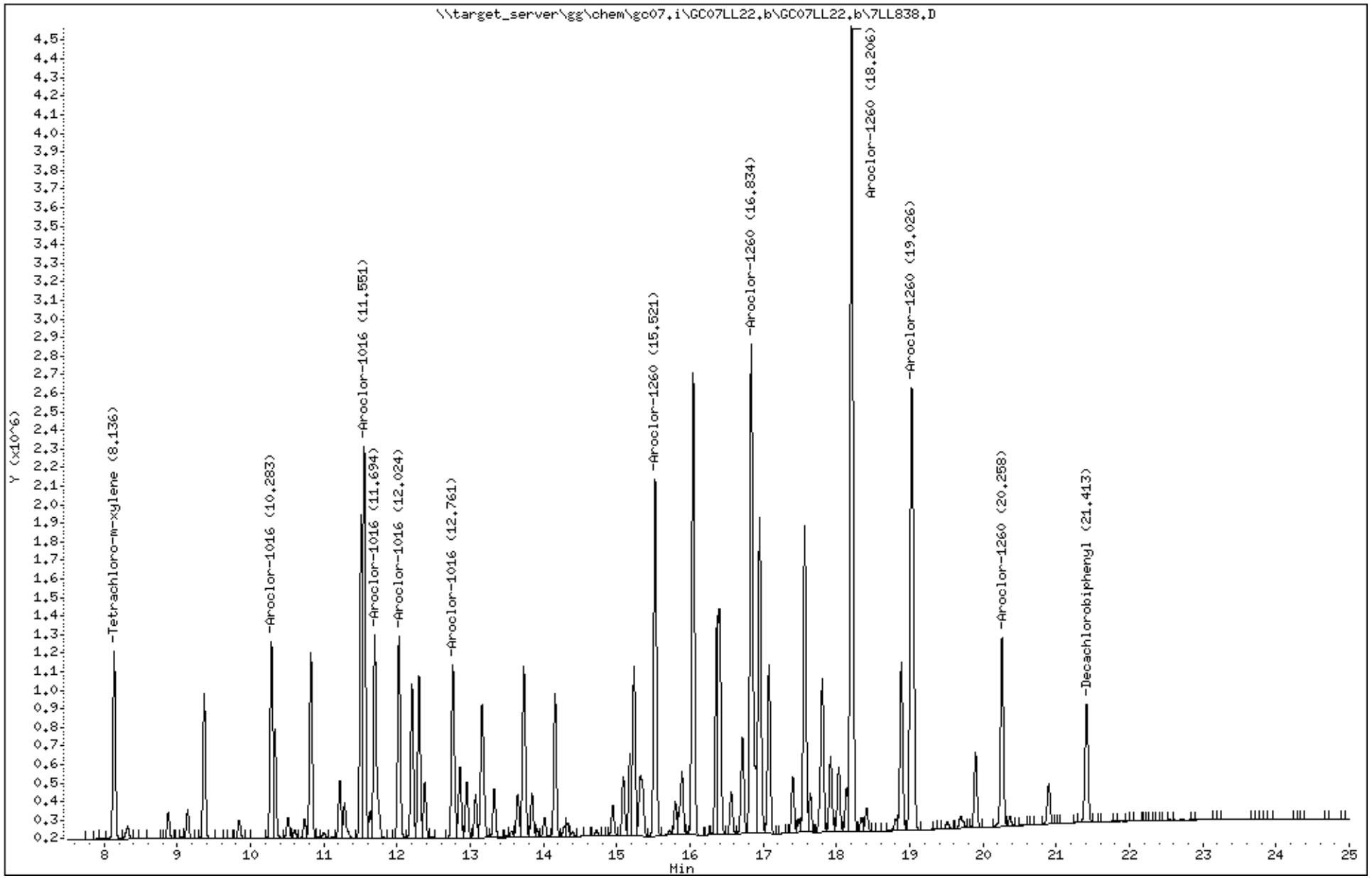
Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\GC07LL22.b\7LL838.D
Date : 22-DEC-2018 16:40
Client ID:
Sample Info: WG243328-1

Instrument: gc07.i

Operator: BF

Column phase: ZB-MultiResidue-2

Column diameter: 0.53



Katahdin Analytical Services 2000070

REISSUE2

Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL839.D
Report Date: 26-Dec-2018 13:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL839.D
Lab Smp Id: WG243328-2
Inj Date : 22-DEC-2018 17:07
Operator : BF Inst ID: gc07.i
Smp Info : WG243328-2
Misc Info :
Comment :
Method : \\target_server\gg\chem\gc07.i\GC07LL22.b\PCB133.m
Meth Date : 24-Dec-2018 15:51 gc07.i Quant Type: ESTD
Cal Date : 23-DEC-2018 00:05 Cal File: 7LL854.D
Als bottle: 64 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1660.sub
Target Version: 4.12 Sample Matrix: SOIL
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * 1000*Vt*(100/(100-M))/Ws * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
M	0.00000	% Moisture
Ws	0.03000	Weight of Sample (Kg)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
$ 3 Tetrachloro-m-xylene					CAS #: 877-09-8			
8.244	8.232	0.012	148432	0.00100	0.000974		(M)	M4
6 Aroclor-1016					CAS #: 12674-11-2			
10.259	10.242	0.017	190673	0.05000	0.0583	80.00- 120.00	100.00	
10.734	10.717	0.017	140795	0.05000	0.0566	158.77- 238.15	73.84	
11.514	11.493	0.021	376653	0.05000	0.0579	296.98- 445.46	197.54	
11.903	11.882	0.021	161166	0.05000	0.0552	114.78- 172.16	84.52	
12.679	12.660	0.019	158160	0.05000	0.0549	112.32- 168.48	82.95	
		Average of Peak Amounts =			0.05658			
9 Aroclor-1260					CAS #: 11096-82-5			
15.491	15.468	0.023	336762	0.05000	0.0546	80.00- 120.00	100.00(M)	M5
16.794	16.770	0.024	460168	0.05000	0.0529	94.69- 142.03	136.64	M5
18.286	18.260	0.026	617647	0.05000	0.0518	89.28- 133.92	183.41	M5
18.924	18.897	0.027	377248	0.05000	0.0525	72.48- 108.72	112.02	M5
20.309	20.283	0.026	159315	0.05000	0.0537	0.00- 0.00	48.01	M5
		Average of Peak Amounts =			0.05310			
$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
21.399	21.372	0.027	113355	0.00100	0.00114			

BF
1:20 pm, Dec 26, 2018

Data File: \\target_server\gc\chem\gc07.i\GC07LL22.b\7LL839.D
Date : 22-DEC-2018 17:07
Client ID:
Sample Info: MC243328-2

Instrument: gc07.i
Operator: BF
Column diameter: 0.53

Column phase: ZB-Multi Residue-1

\\target_server\gc\chem\gc07.i\GC07LL22.b\7LL839.D

Y (x10^6)

Min

-Tetrachloro-m-xylene (8.245)
-Aroclor-1016 (10.735)
-Aroclor-1016 (10.260)
-Aroclor-1016 (11.903)
-Aroclor-1016 (12.680)
-Aroclor-1260 (15.492)
-Aroclor-1016 (11.515)
-Aroclor-1260 (16.795)
Aroclor-1260 (18.287)
-Aroclor-1260 (18.925)
-Aroclor-1260 (20.310)
-Decachlorobiphenyl (21.400)

Data File: 7LL839.D
Report Date: 26-Dec-2018 13:05

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07LL22.b\GC07LL22.b\7LL839.D
Lab Smp Id: WG243328-2
Inj Date : 22-DEC-2018 17:07
Operator : BF Inst ID: gc07.i
Smp Info : WG243328-2
Misc Info :
Comment :
Method : \\target_server\gg\chem\gc07.i\GC07LL22.b\PCB133.m\PCB133.m
Meth Date : 24-Dec-2018 15:51 gc07.i Quant Type: ESTD
Cal Date : 22-DEC-2018 17:07 Cal File: 7LL839.D
Als bottle: 64 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1660.sub
Target Version: 4.12 Sample Matrix: SOIL
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * 1000*Vt*(100/(100-M))/Ws * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
M	0.00000	% Moisture
Ws	0.03000	Weight of Sample (Kg)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
$ 2 Tetrachloro-m-xylene					CAS #: 877-09-8			
8.158	8.145	0.013	46442	0.00100	0.000967			
5 Aroclor-1016					CAS #: 12674-11-2			
10.301	10.288	0.013	60557	0.05000	0.0574	80.00- 120.00	100.00	
11.569	11.550	0.019	110576	0.05000	0.0608	158.77- 238.15	182.60	
11.713	11.695	0.018	60184	0.05000	0.0558	296.98- 445.46	99.38	
12.043	12.026	0.017	57386	0.05000	0.0542	114.78- 172.17	94.76	
12.776	12.758	0.018	52739	0.05000	0.0554	112.32- 168.48	87.09	
Average of Peak Amounts =					0.05672			
9 Aroclor-1260					CAS #: 11096-82-5			
15.536	15.515	0.021	107345	0.05000	0.0547	80.00- 120.00	100.00(M)	M5
16.848	16.826	0.022	131621	0.05000	0.0521	94.69- 142.03	122.61	M5
18.216	18.193	0.023	201303	0.05000	0.0500	89.28- 133.92	187.53	M5
19.038	19.015	0.023	118960	0.05000	0.0516	72.48- 108.72	110.82	M5
20.269	20.245	0.024	50490	0.05000	0.0506	0.00- 0.00	47.04	M5
Average of Peak Amounts =					0.05180			
$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
21.424	21.396	0.028	33510	0.00100	0.00107			

BF

1:20 pm, Dec 26, 2018

Data File: \\target_server\gg\chem\goo7.i\GC07LL22.b\GC07LL22.b\7LL839.D
Date : 22-DEC-2018 17:07
Client ID:
Sample Info: MC243328-2

Column phase: ZB-MultiResidue-2

Instrument: goo7.i
Operator: BF
Column diameter: 0.53

Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL840.D
Report Date: 26-Dec-2018 13:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL840.D
Lab Smp Id: WG243328-3
Inj Date : 22-DEC-2018 17:35
Operator : BF Inst ID: gc07.i
Smp Info : WG243328-3
Misc Info :
Comment :
Method : \\target_server\gg\chem\gc07.i\GC07LL22.b\PCB133.m
Meth Date : 24-Dec-2018 15:51 gc07.i Quant Type: ESTD
Cal Date : 23-DEC-2018 00:32 Cal File: 7LL855.D
Als bottle: 65 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1660.sub
Target Version: 4.12 Sample Matrix: SOIL
Processing Host: INSPIRON1

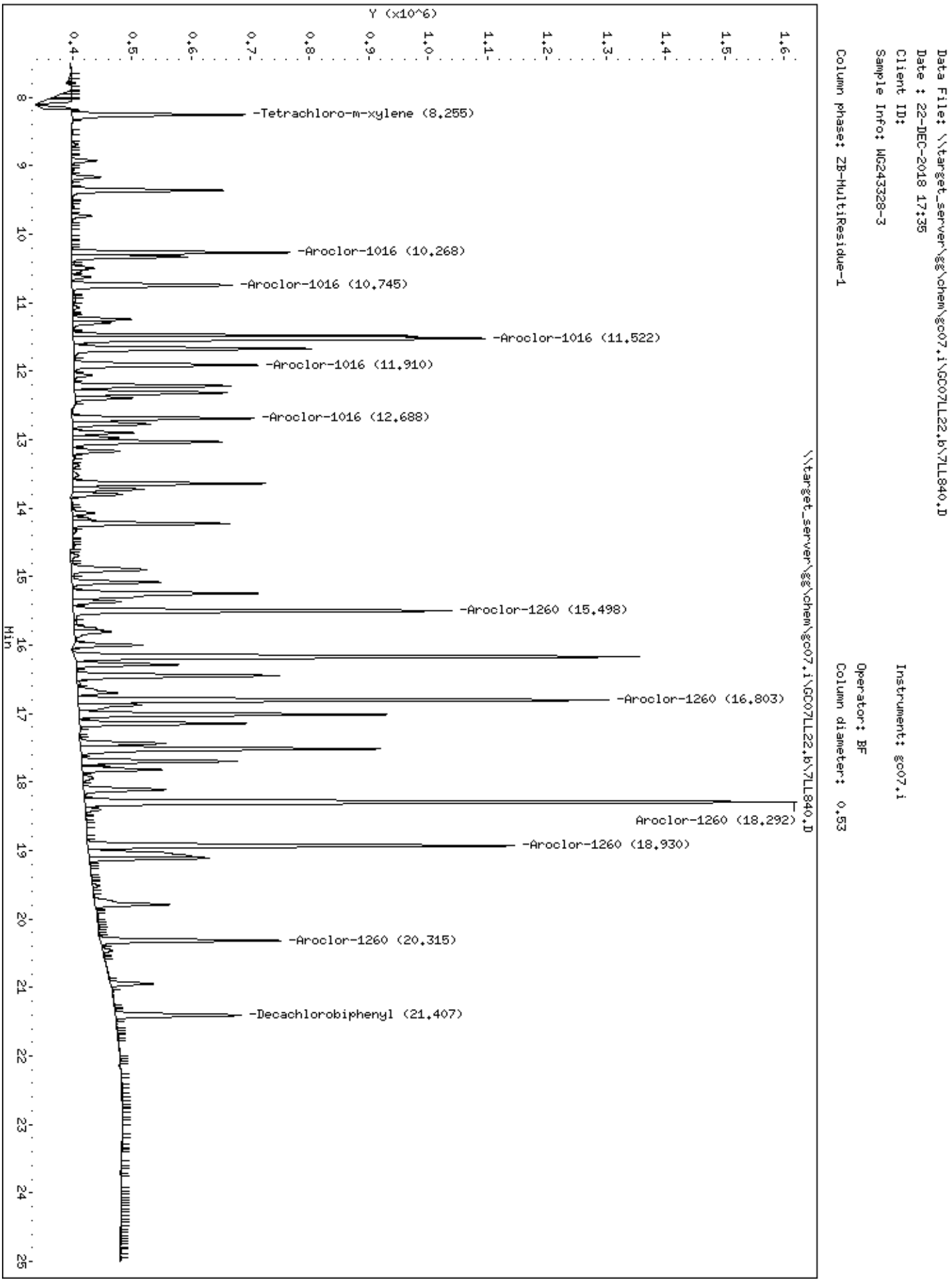
Concentration Formula: Amt * DF * 1000*Vt*(100/(100-M))/Ws * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
M	0.00000	% Moisture
Ws	0.03000	Weight of Sample (Kg)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
$ 3 Tetrachloro-m-xylene					CAS #: 877-09-8			
8.254	8.232	0.022	291040	0.00200	0.00194		(M)	M4
6 Aroclor-1016					CAS #: 12674-11-2			
10.268	10.242	0.026	367768	0.10000	0.112	80.00- 120.00	100.00	
10.744	10.717	0.027	271146	0.10000	0.109	158.77- 238.15	73.73	
11.521	11.493	0.028	695062	0.10000	0.107	296.98- 445.46	188.99	
11.909	11.882	0.027	309723	0.10000	0.106	114.78- 172.16	84.22	
12.688	12.660	0.028	306802	0.10000	0.106	112.32- 168.48	83.42	
		Average of Peak Amounts =			0.10800			
9 Aroclor-1260					CAS #: 11096-82-5			
15.498	15.468	0.030	637906	0.10000	0.103	80.00- 120.00	100.00	
16.803	16.770	0.033	895202	0.10000	0.103	94.69- 142.03	140.33	
18.291	18.260	0.031	1200893	0.10000	0.101	89.28- 133.92	188.26	
18.929	18.897	0.032	720738	0.10000	0.100	72.48- 108.72	112.98	
20.314	20.283	0.031	304166	0.10000	0.102	0.00- 0.00	47.68	
		Average of Peak Amounts =			0.10180			
$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
21.406	21.372	0.034	213023	0.00200	0.00213			

BF

1:20 pm, Dec 26, 2018


Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL840.D
Date : 22-DEC-2018 17:35
Client ID:
Sample Info: WG243328-3
Column phase: ZB-MultiResidue-1
Instrument: gc07.i
Operator: BF
Column diameter: 0.53
Y (x10^6)
0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.1
1.2
1.3
1.4
1.5
1.6
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
Min
-Tetrachloro-m-xylene (8.255)
-Aroclor-1016 (10.268)
-Aroclor-1016 (10.745)
-Aroclor-1016 (11.522)
-Aroclor-1016 (11.910)
-Aroclor-1016 (12.688)
-Aroclor-1260 (15.498)
-Aroclor-1260 (16.803)
Aroclor-1260 (18.292)
-Aroclor-1260 (18.930)
-Aroclor-1260 (20.315)
-Decachlorobiphenyl (21.407)
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Data File: 7LL840.D
Report Date: 26-Dec-2018 13:05

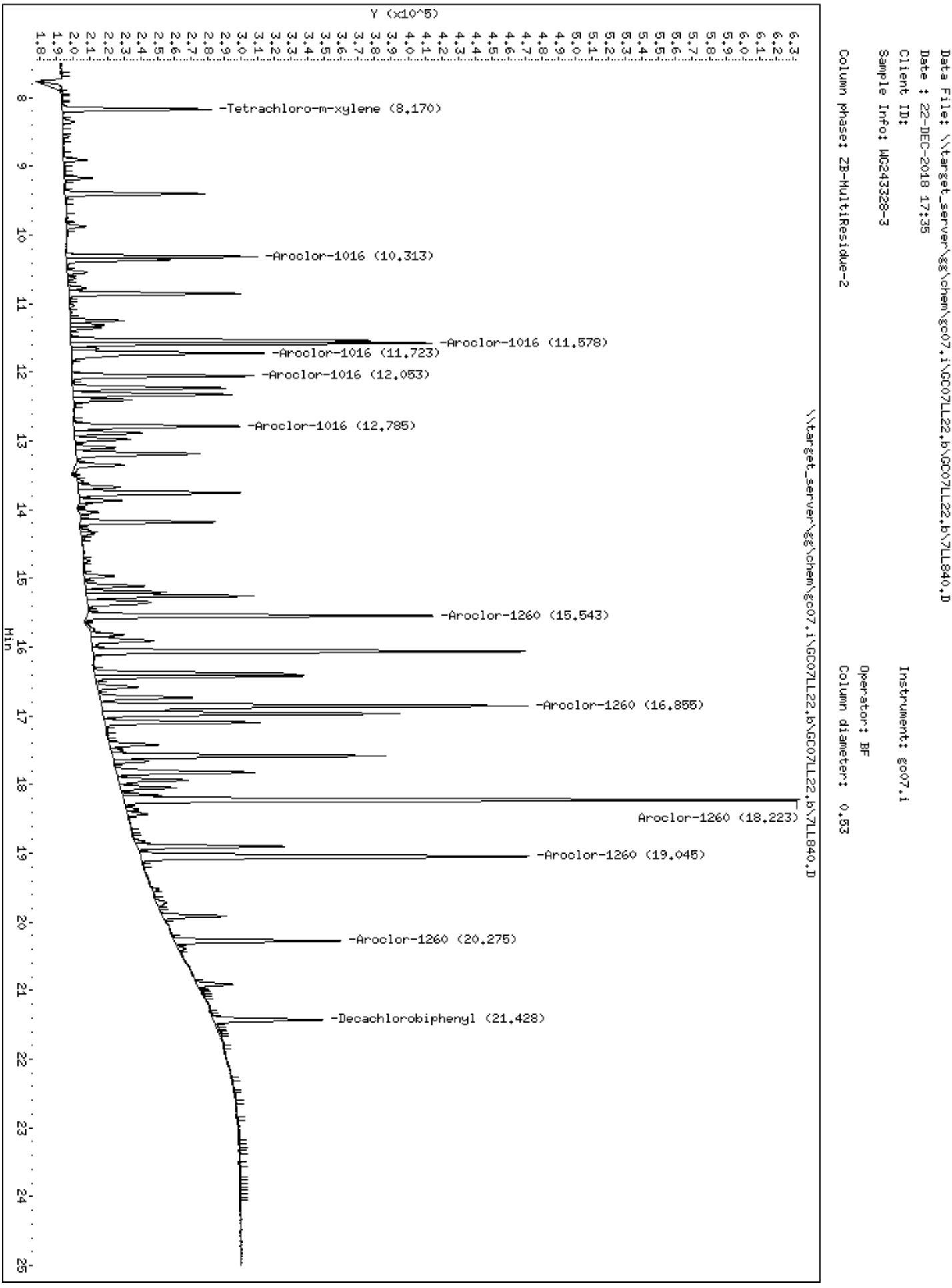
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07LL22.b\GC07LL22.b\7LL840.D
Lab Smp Id: WG243328-3
Inj Date : 22-DEC-2018 17:35
Operator : BF   Inst ID: gc07.i
Smp Info : WG243328-3
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07LL22.b\PCB133.m\PCB133.m
Meth Date : 24-Dec-2018 15:51 gc07.i   Quant Type: ESTD
Cal Date : 23-DEC-2018 16:43   Cal File: 7LL890.D
Als bottle: 65   Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: AR1660.sub
Target Version: 4.12   Sample Matrix: SOIL
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * 1000*Vt*(100/(100-M))/Ws * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
M	0.00000	% Moisture
Ws	0.03000	Weight of Sample (Kg)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
$ 2 Tetrachloro-m-xylene					CAS #: 877-09-8			
8.169	8.145	0.024	89598	0.00200	0.00186			
5 Aroclor-1016					CAS #: 12674-11-2			
10.313	10.288	0.025	114315	0.10000	0.108	80.00- 120.00	100.00	
11.578	11.550	0.028	215468	0.10000	0.115	158.77- 238.15	188.49	
11.723	11.695	0.028	114921	0.10000	0.106	296.98- 445.46	100.53	
12.053	12.026	0.027	108695	0.10000	0.103	114.78- 172.17	95.08	
12.784	12.758	0.026	98779	0.10000	0.104	112.32- 168.48	86.41	
Average of Peak Amounts =					0.10720			
9 Aroclor-1260					CAS #: 11096-82-5			
15.543	15.515	0.028	207169	0.10000	0.106	80.00- 120.00	100.00	
16.854	16.826	0.028	254724	0.10000	0.101	94.69- 142.03	122.95	
18.223	18.193	0.030	404045	0.10000	0.100	89.28- 133.92	195.03	
19.044	19.015	0.029	232040	0.10000	0.101	72.48- 108.72	112.01	
20.274	20.245	0.029	99110	0.10000	0.0992	0.00- 0.00	47.84	
Average of Peak Amounts =					0.10144			
$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
21.428	21.396	0.032	65152	0.00200	0.00208			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Date : 22-DEC-2018 17:35
Client ID:
Sample Info: WG243328-3
Column phase: ZB-MultiResidue-2
Instrument: gc07.i
Operator: BF
Column diameter: 0.53
Y (x10^5)
Min
-Tetrachloro-m-xylene (8.170)
-Aroclor-1016 (10.313)
-Aroclor-1016 (11.578)
-Aroclor-1016 (11.723)
-Aroclor-1016 (12.053)
-Aroclor-1016 (12.785)
-Aroclor-1260 (15.543)
-Aroclor-1260 (16.855)
Aroclor-1260 (18.223)
-Aroclor-1260 (19.045)
-Aroclor-1260 (20.275)
-Decachlorobiphenyl (21.428)
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Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL841.D
Report Date: 26-Dec-2018 13:04

Katahdin Analytical Services

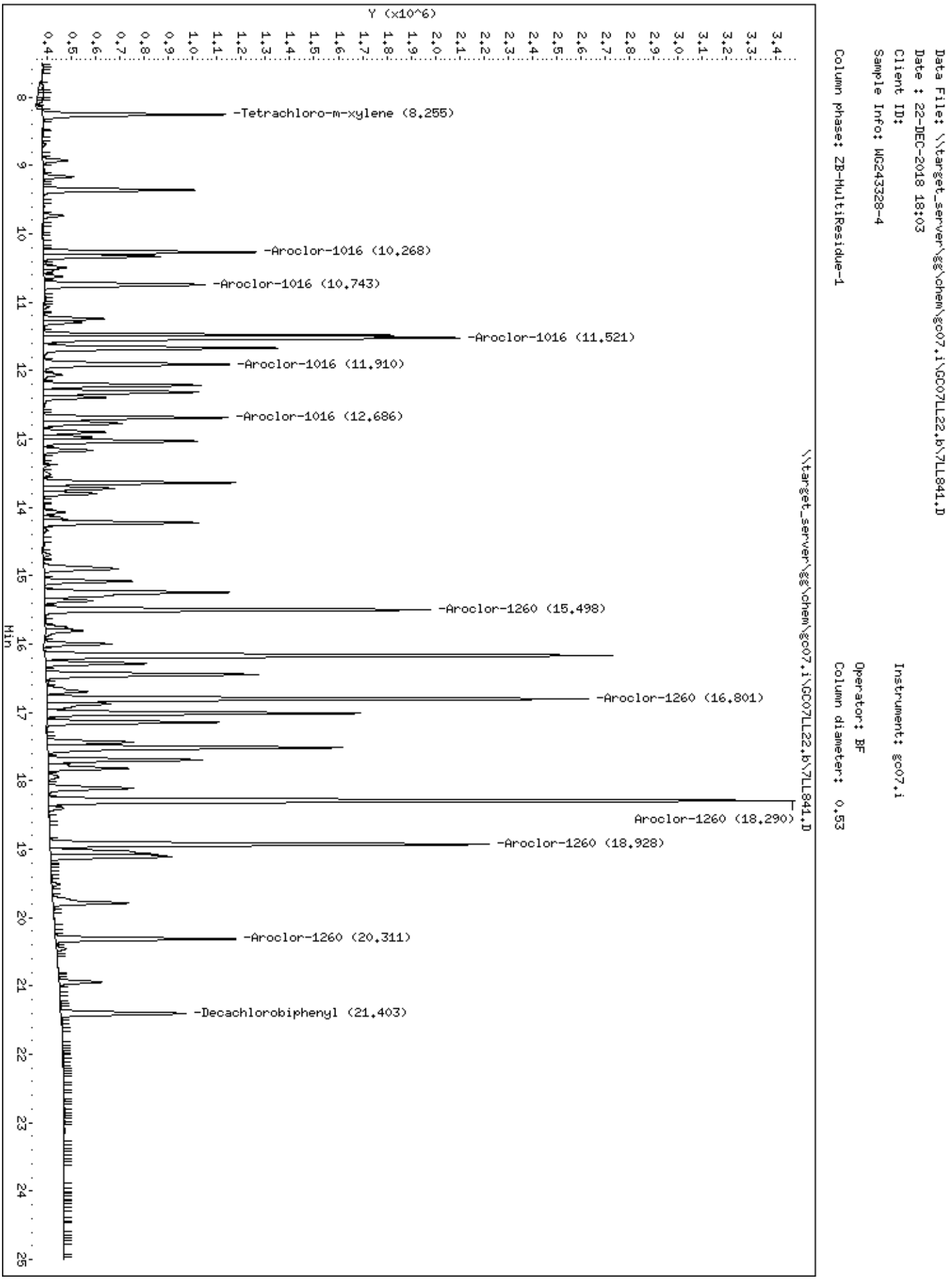
Data file : \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL841.D
Lab Smp Id: WG243328-4
Inj Date : 22-DEC-2018 18:03
Operator : BF Inst ID: gc07.i
Smp Info : WG243328-4
Misc Info :
Comment :
Method : \\target_server\gg\chem\gc07.i\GC07LL22.b\PCB133.m
Meth Date : 24-Dec-2018 15:51 gc07.i Quant Type: ESTD
Cal Date : 23-DEC-2018 01:00 Cal File: 7LL856.D
Als bottle: 66 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1660.sub
Target Version: 4.12 Sample Matrix: SOIL
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * 1000*Vt*(100/(100-M))/Ws * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
M	0.00000	% Moisture
Ws	0.03000	Weight of Sample (Kg)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
$ 3 Tetrachloro-m-xylene					CAS #: 877-09-8			
8.254	8.232	0.022	752293	0.00500	0.00502		(M)	M4
6 Aroclor-1016					CAS #: 12674-11-2			
10.268	10.242	0.026	877011	0.25000	0.268	80.00- 120.00	100.00	
10.743	10.717	0.026	661849	0.25000	0.266	158.77- 238.15	75.47	
11.521	11.493	0.028	1715960	0.25000	0.264	296.98- 445.46	195.66	
11.909	11.882	0.027	765641	0.25000	0.262	114.78- 172.16	87.30	
12.686	12.660	0.026	762115	0.25000	0.264	112.32- 168.48	86.90	
		Average of Peak Amounts =			0.26480			
9 Aroclor-1260					CAS #: 11096-82-5			
15.498	15.468	0.030	1587161	0.25000	0.257	80.00- 120.00	100.00	
16.801	16.770	0.031	2231040	0.25000	0.257	94.69- 142.03	140.57	
18.289	18.260	0.029	3073271	0.25000	0.258	89.28- 133.92	193.63	
18.928	18.897	0.031	1808541	0.25000	0.252	72.48- 108.72	113.95	
20.311	20.283	0.028	739080	0.25000	0.249	0.00- 0.00	46.57	
		Average of Peak Amounts =			0.25460			
$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
21.403	21.372	0.031	513154	0.00500	0.00514			

BF
1:20 pm, Dec 26, 2018


Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL841.D
Date : 22-DEC-2018 18:03
Client ID:
Sample Info: WG243328-4
Column phase: ZB-MultiResidue-1
Instrument: gc07.i
Operator: BF
Column diameter: 0.53
Y (x10^6)
Min
-Tetrachloro-m-xylene (8.255)
-Aroclor-1016 (10.268)
-Aroclor-1016 (10.743)
-Aroclor-1016 (11.521)
-Aroclor-1016 (11.910)
-Aroclor-1016 (12.686)
-Aroclor-1260 (15.498)
-Aroclor-1260 (16.801)
\\target_server\gg\chem\gc07.i\GC07LL22.b\7LL841.D
Aroclor-1260 (18.290)
-Aroclor-1260 (18.928)
-Aroclor-1260 (20.311)
-Decachlorobiphenyl (21.403)

Data File: 7LL841.D
Report Date: 26-Dec-2018 13:05

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07LL22.b\GC07LL22.b\7LL841.D
Lab Smp Id: WG243328-4
Inj Date : 22-DEC-2018 18:03
Operator : BF   Inst ID: gc07.i
Smp Info : WG243328-4
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07LL22.b\PCB133.m\PCB133.m
Meth Date : 24-Dec-2018 15:51 gc07.i   Quant Type: ESTD
Cal Date : 23-DEC-2018 17:10   Cal File: 7LL891.D
Als bottle: 66   Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: AR1660.sub
Target Version: 4.12   Sample Matrix: SOIL
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * 1000*Vt*(100/(100-M))/Ws * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
M	0.00000	% Moisture
Ws	0.03000	Weight of Sample (Kg)
Cpnd Variable		Local Compound Variable

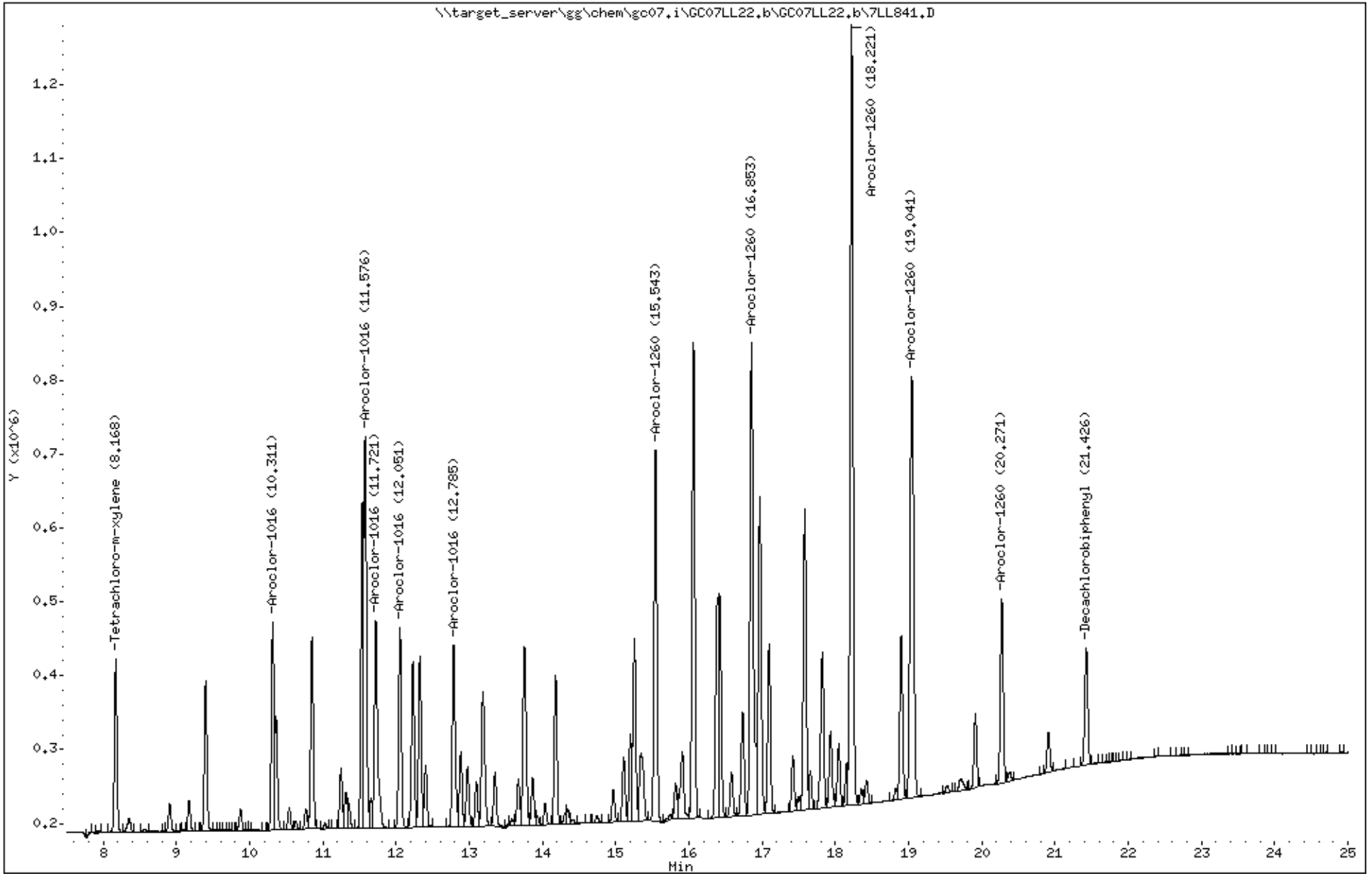
				AMOUNTS					
				CAL-AMT	ON-COL				
RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	TARGET RANGE		RATIO	REVIEW CODE
$ 2 Tetrachloro-m-xylene						CAS #: 877-09-8			
8.167	8.145	0.022	233792	0.00500	0.00487				
5 Aroclor-1016						CAS #: 12674-11-2			
10.311	10.288	0.023	281249	0.25000	0.267	80.00-	120.00	100.00	
11.576	11.550	0.026	530865	0.25000	0.274	158.77-	238.15	188.75	
11.721	11.695	0.026	281003	0.25000	0.260	296.98-	445.46	99.91	
12.051	12.026	0.025	270835	0.25000	0.256	114.78-	172.17	96.30	
12.784	12.758	0.026	246180	0.25000	0.259	112.32-	168.48	87.53	
		Average of Peak Amounts =			0.26320				
9 Aroclor-1260						CAS #: 11096-82-5			
15.542	15.515	0.027	503410	0.25000	0.257	80.00-	120.00	100.00	
16.852	16.826	0.026	639750	0.25000	0.253	94.69-	142.03	127.08	
18.221	18.193	0.028	1056406	0.25000	0.263	89.28-	133.92	209.85	
19.041	19.015	0.026	571130	0.25000	0.248	72.48-	108.72	113.45	
20.271	20.245	0.026	248033	0.25000	0.248	0.00-	0.00	49.27	
		Average of Peak Amounts =			0.25380				
$ 12 Decachlorobiphenyl						CAS #: 2051-24-3			
21.426	21.396	0.030	158086	0.00500	0.00504				

Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\GC07LL22.b\7LL841.D
Date : 22-DEC-2018 18:03
Client ID:
Sample Info: WG243328-4

Instrument: gc07.i

Operator: BF

Column phase: ZB-MultiResidue-2
Column diameter: 0.53



Katahdin Analytical Services 2000082

REISSUE2

Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL842.D
Report Date: 26-Dec-2018 13:04

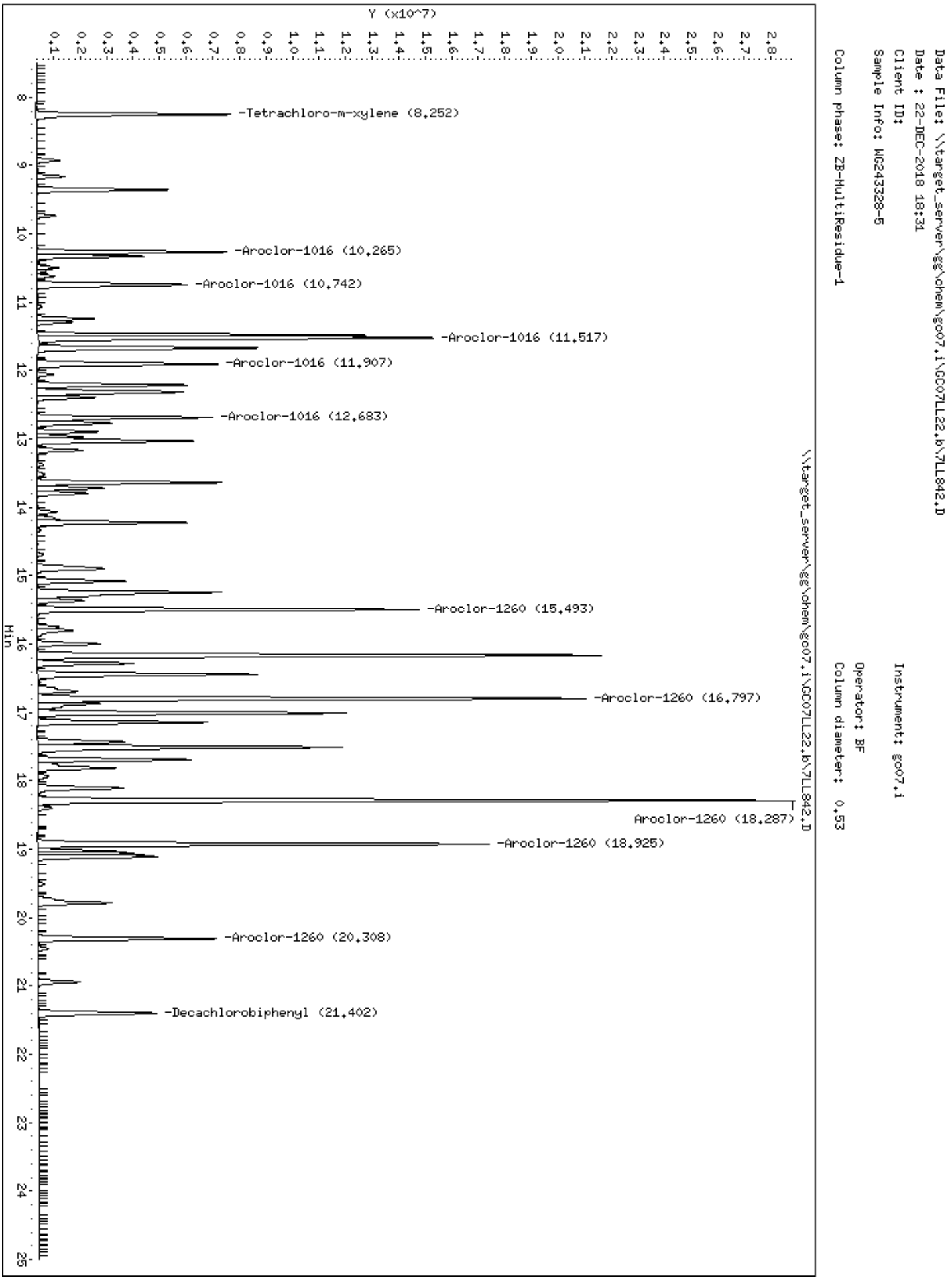
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL842.D
Lab Smp Id: WG243328-5
Inj Date : 22-DEC-2018 18:31
Operator : BF   Inst ID: gc07.i
Smp Info : WG243328-5
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07LL22.b\PCB133.m
Meth Date : 24-Dec-2018 15:51 gc07.i   Quant Type: ESTD
Cal Date : 23-DEC-2018 01:28   Cal File: 7LL857.D
Als bottle: 67   Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: AR1660.sub
Target Version: 4.12   Sample Matrix: SOIL
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * 1000*Vt*(100/(100-M))/Ws * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
M	0.00000	% Moisture
Ws	0.03000	Weight of Sample (Kg)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
$ 3 Tetrachloro-m-xylene						CAS #: 877-09-8		
8.251	8.232	0.019	7328535	0.05000	0.0474			
6 Aroclor-1016						CAS #: 12674-11-2		
10.265	10.242	0.023	7149429	2.50000	2.19	80.00- 120.00	100.00	
10.741	10.717	0.024	5662920	2.50000	2.28	158.77- 238.15	79.21	
11.516	11.493	0.023	14870154	2.50000	2.28	296.98- 445.46	207.99	
11.906	11.882	0.024	6814646	2.50000	2.33	114.78- 172.16	95.32	
12.683	12.660	0.023	6597657	2.50000	2.29	112.32- 168.48	92.28	
		Average of Peak Amounts =			2.27400			
9 Aroclor-1260						CAS #: 11096-82-5		
15.493	15.468	0.025	14397445	2.50000	2.34	80.00- 120.00	100.00	
16.796	16.770	0.026	20637107	2.50000	2.36	94.69- 142.03	143.34	
18.286	18.260	0.026	28501464	2.50000	2.39	89.28- 133.92	197.96	
18.925	18.897	0.028	17017050	2.50000	2.37	72.48- 108.72	118.19	
20.308	20.283	0.025	6739437	2.50000	2.27	0.00- 0.00	46.81	
		Average of Peak Amounts =			2.34600			
$ 12 Decachlorobiphenyl						CAS #: 2051-24-3		
21.401	21.372	0.029	4432422	0.05000	0.0444			


Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL842.D
Date : 22-DEC-2018 18:31
Client ID:
Sample Info: WG243328-5
Column phase: ZB-MultiResidue-1
Instrument: gc07.i
Operator: BF
Column diameter: 0.53
Y (x10^7)
Min
-Tetrachloro-m-xylene (8.252)
-Aroclor-1016 (10.265)
-Aroclor-1016 (10.742)
-Aroclor-1016 (11.517)
-Aroclor-1016 (11.907)
-Aroclor-1016 (12.683)
-Aroclor-1260 (15.493)
-Aroclor-1260 (16.797)
\\target_server\gg\chem\gc07.i\GC07LL22.b\7LL842.D
Aroclor-1260 (18.287)
-Aroclor-1260 (18.925)
-Aroclor-1260 (20.308)
-Decachlorobiphenyl (21.402)

Data File: 7LL842.D
Report Date: 26-Dec-2018 13:05

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07LL22.b\GC07LL22.b\7LL842.D
Lab Smp Id: WG243328-5
Inj Date : 22-DEC-2018 18:31
Operator : BF   Inst ID: gc07.i
Smp Info : WG243328-5
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07LL22.b\PCB133.m\PCB133.m
Meth Date : 24-Dec-2018 15:51 gc07.i   Quant Type: ESTD
Cal Date : 23-DEC-2018 17:38   Cal File: 7LL892.D
Als bottle: 67   Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: AR1660.sub
Target Version: 4.12   Sample Matrix: SOIL
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * 1000*Vt*(100/(100-M))/Ws * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
M	0.00000	% Moisture
Ws	0.03000	Weight of Sample (Kg)
Cpnd Variable		Local Compound Variable

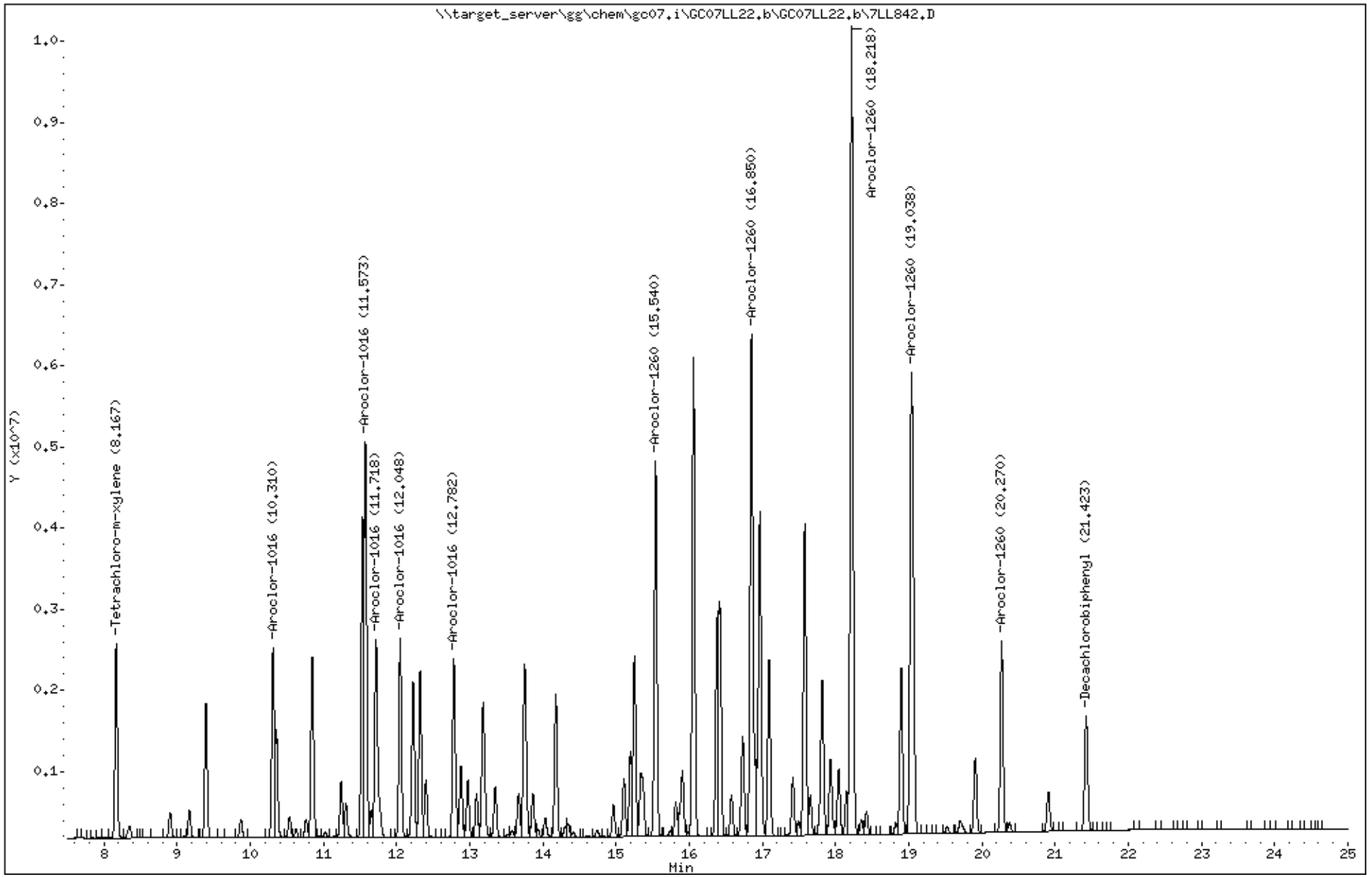
RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
$ 2 Tetrachloro-m-xylene						CAS #: 877-09-8		
8.166	8.145	0.021	2392639	0.05000	0.0498			
5 Aroclor-1016						CAS #: 12674-11-2		
10.309	10.288	0.021	2336816	2.50000	2.22	80.00- 120.00	100.00	
11.573	11.550	0.023	4872277	2.50000	2.44	158.77- 238.15	208.50	
11.718	11.695	0.023	2441454	2.50000	2.26	296.98- 445.46	104.48	
12.048	12.026	0.022	2451825	2.50000	2.32	114.78- 172.17	104.92	
12.781	12.758	0.023	2204902	2.50000	2.32	112.32- 168.48	94.35	
Average of Peak Amounts =					2.31200			
9 Aroclor-1260						CAS #: 11096-82-5		
15.539	15.515	0.024	4626383	2.50000	2.36	80.00- 120.00	100.00	
16.849	16.826	0.023	6174468	2.50000	2.44	94.69- 142.03	133.46	
18.218	18.193	0.025	9962308	2.50000	2.48	89.28- 133.92	215.34	
19.038	19.015	0.023	5681140	2.50000	2.46	72.48- 108.72	122.80	
20.269	20.245	0.024	2356948	2.50000	2.36	0.00- 0.00	50.95	
Average of Peak Amounts =					2.42000			
$ 12 Decachlorobiphenyl						CAS #: 2051-24-3		
21.423	21.396	0.027	1417713	0.05000	0.0452			

Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\GC07LL22.b\7LL842.D
Date : 22-DEC-2018 18:31
Client ID:
Sample Info: WG243328-5

Instrument: gc07.i

Operator: BF

Column phase: ZB-MultiResidue-2
Column diameter: 0.53



Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL843.D
Report Date: 26-Dec-2018 13:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL843.D
Lab Smp Id: WG243328-6
Inj Date : 22-DEC-2018 18:59
Operator : BF   Inst ID: gc07.i
Smp Info : WG243328-6
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07LL22.b\PCB133.m
Meth Date : 24-Dec-2018 15:51 gc07.i   Quant Type: ESTD
Cal Date : 23-DEC-2018 01:56   Cal File: 7LL858.D
Als bottle: 68   Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: AR1660.sub
Target Version: 4.12   Sample Matrix: SOIL
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * 1000*Vt*(100/(100-M))/Ws * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
M	0.00000	% Moisture
Ws	0.03000	Weight of Sample (Kg)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
$ 3 Tetrachloro-m-xylene					CAS #: 877-09-8			
8.249	8.232	0.017	29958390	0.20000	0.194			
6 Aroclor-1016					CAS #: 12674-11-2			
10.262	10.242	0.020	24905109	10.0000	7.62	80.00- 120.00	100.00	
10.739	10.717	0.022	19999490	10.0000	8.04	158.77- 238.15	80.30	
11.516	11.493	0.023	53001755	10.0000	8.14	296.98- 445.46	212.81	
11.904	11.882	0.022	26021438	10.0000	8.91	114.78- 172.16	104.48	
12.684	12.660	0.024	25620229	10.0000	8.89	112.32- 168.48	102.87	
		Average of Peak Amounts =			8.32000			
9 Aroclor-1260					CAS #: 11096-82-5			
15.492	15.468	0.024	53626774	10.0000	8.70	80.00- 120.00	100.00	
16.796	16.770	0.026	76769345	10.0000	8.79	94.69- 142.03	143.15	
18.287	18.260	0.027	105722713	10.0000	8.87	89.28- 133.92	197.15	
18.926	18.897	0.029	68169344	10.0000	9.48	72.48- 108.72	127.12	
20.311	20.283	0.028	29154807	10.0000	9.80	0.00- 0.00	54.37	
		Average of Peak Amounts =			9.12800			
$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
21.402	21.372	0.030	17975868	0.20000	0.180			

Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL843.D
Date : 22-DEC-2018 18:59
Client ID:
Sample Info: WG243328-6
Column phase: ZB-MultiResidue-1
Instrument: gc07.i
Operator: BF
Column diameter: 0.53
Y (x10^8)
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Min
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
-Tetrachloro-m-xylene (8.250)
-Aroclor-1016 (10.263)
-Aroclor-1016 (10.740)
-Aroclor-1016 (11.516)
-Aroclor-1016 (11.905)
-Aroclor-1016 (12.685)
-Aroclor-1260 (15.493)
-Aroclor-1260 (16.796)
\\target_server\gg\chem\gc07.i\GC07LL22.b\7LL843.D
Aroclor-1260 (18.288)
-Aroclor-1260 (18.926)
-Aroclor-1260 (20.311)
-Decachlorobiphenyl (21.403)

Data File: 7LL843.D
Report Date: 26-Dec-2018 13:05

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07LL22.b\GC07LL22.b\7LL843.D
Lab Smp Id: WG243328-6
Inj Date : 22-DEC-2018 18:59
Operator : BF   Inst ID: gc07.i
Smp Info : WG243328-6
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07LL22.b\PCB133.m\PCB133.m
Meth Date : 24-Dec-2018 15:51 gc07.i   Quant Type: ESTD
Cal Date : 23-DEC-2018 17:38   Cal File: 7LL892.D
Als bottle: 68   Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: AR1660.sub
Target Version: 4.12   Sample Matrix: SOIL
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * 1000*Vt*(100/(100-M))/Ws * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
M	0.00000	% Moisture
Ws	0.03000	Weight of Sample (Kg)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
$ 2 Tetrachloro-m-xylene					CAS #: 877-09-8			
8.164	8.145	0.019	10324078	0.20000	0.215			
5 Aroclor-1016					CAS #: 12674-11-2			
10.309	10.288	0.021	8554323	10.0000	8.11	80.00- 120.00	100.00	
11.574	11.550	0.024	17605288	10.0000	8.58	158.77- 238.15	205.81	
11.717	11.695	0.022	9312350	10.0000	8.63	296.98- 445.46	108.86	
12.047	12.026	0.021	9701079	10.0000	9.16	114.78- 172.17	113.41	
12.781	12.758	0.023	8658912	10.0000	9.10	112.32- 168.48	101.22	
		Average of Peak Amounts =			8.71600			
9 Aroclor-1260					CAS #: 11096-82-5			
15.539	15.515	0.024	17576272	10.0000	8.96	80.00- 120.00	100.00	
16.851	16.826	0.025	23134889	10.0000	9.16	94.69- 142.03	131.63	
18.219	18.193	0.026	35214810	10.0000	8.76	89.28- 133.92	200.35	
19.041	19.015	0.026	21968715	10.0000	9.53	72.48- 108.72	124.99	
20.272	20.245	0.027	10386724	10.0000	10.4	0.00- 0.00	59.10	
		Average of Peak Amounts =			9.36200			
$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
21.426	21.396	0.030	6140456	0.20000	0.196			

Data File: \\target_server\gg\chem\goo7.i\GC07LL22.b\GC07LL22.b\7LL843.D
Date : 22-DEC-2018 18:59
Client ID:
Sample Info: MC243328-6

Column phase: ZB-Multi Residue-2

Instrument: goo7.i
Operator: BF
Column diameter: 0.53

Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL844.D
Report Date: 26-Dec-2018 12:53

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL844.D
Lab Smp Id: WG243328-7
Inj Date : 22-DEC-2018 19:26
Operator : BF   Inst ID: gc07.i
Smp Info : WG243328-7,TL2688
Misc Info : WG243328,WG243328,WG243328-1,TL2688-1
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07LL22.b\PCB133.m
Meth Date : 24-Dec-2018 15:51 gc07.i   Quant Type: ESTD
Cal Date : 23-DEC-2018 04:43   Cal File: 7LL864.D
Als bottle: 69   QC Sample: INSTSPIKE
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: AR1016.sub
Target Version: 4.12   Sample Matrix: SOIL
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * 1000*Vt*(100/(100-M))/Ws * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
M	0.00000	% Moisture
Ws	0.03000	Weight of Sample (Kg)
Cpnd Variable		Local Compound Variable

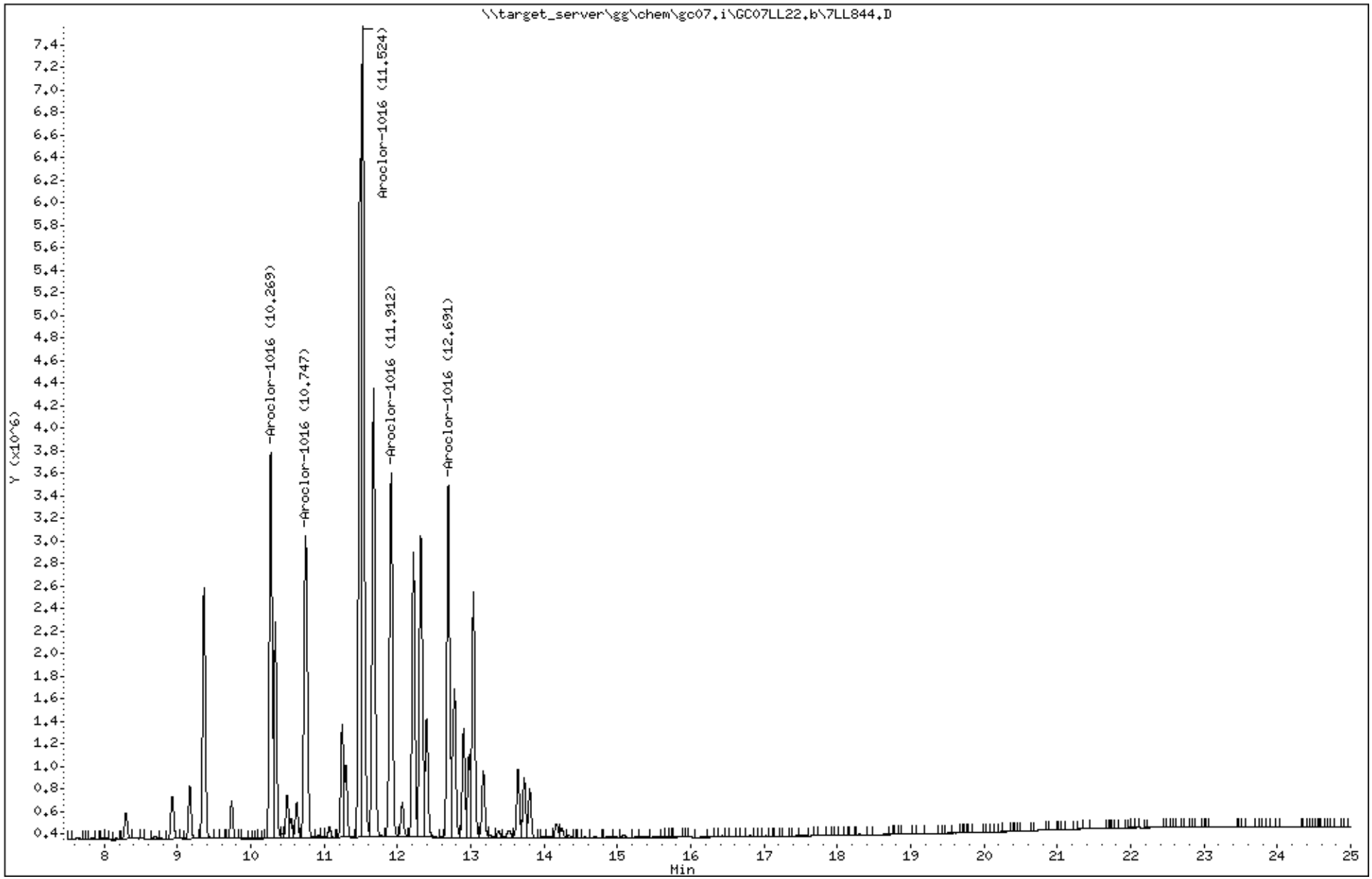
RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/mL)	CONCENTRATIONS FINAL (ug/Kg)	TARGET RANGE	RATIO	REVIEW CODE
6 Aroclor-1016					CAS #: 12674-11-2			
10.268	10.242	0.026	3418032	1.04592	34.9	80.00- 120.00	100.00	
10.747	10.717	0.030	2676371	1.07558	35.8	158.77- 238.15	78.30	
11.523	11.493	0.030	7190600	1.10490	36.8	296.98- 445.46	210.37	
11.912	11.882	0.030	3225459	1.10423	36.8	114.78- 172.16	94.37	
12.690	12.660	0.030	3125956	1.08466	36.2	112.32- 168.48	91.45	
			Average of Peak Concentrations =		36.1			

Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL844.D
Date : 22-DEC-2018 19:26
Client ID:
Sample Info: WG243328-7,TL2688

Instrument: gc07.i

Operator: BF
Column diameter: 0.53

Column phase: ZB-MultiResidue-1



Data File: 7LL844.D
Report Date: 26-Dec-2018 12:53

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07LL22.b\GC07LL22.b\7LL844.D
Lab Smp Id: WG243328-7
Inj Date : 22-DEC-2018 19:26
Operator : BF   Inst ID: gc07.i
Smp Info : WG243328-7,TL2688
Misc Info : WG243328,WG243328,WG243328-1,TL2688-1
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07LL22.b\PCB133.m\PCB133.m
Meth Date : 24-Dec-2018 15:51 gc07.i   Quant Type: ESTD
Cal Date : 23-DEC-2018 17:10   Cal File: 7LL891.D
Als bottle: 69   QC Sample: INSTSPIKE
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: AR1016.sub
Target Version: 4.12   Sample Matrix: SOIL

Concentration Formula: Amt * DF * 1000*Vt*(100/(100-M))/Ws * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
M	0.00000	% Moisture
Ws	0.03000	Weight of Sample (Kg)
Cpnd Variable		Local Compound Variable

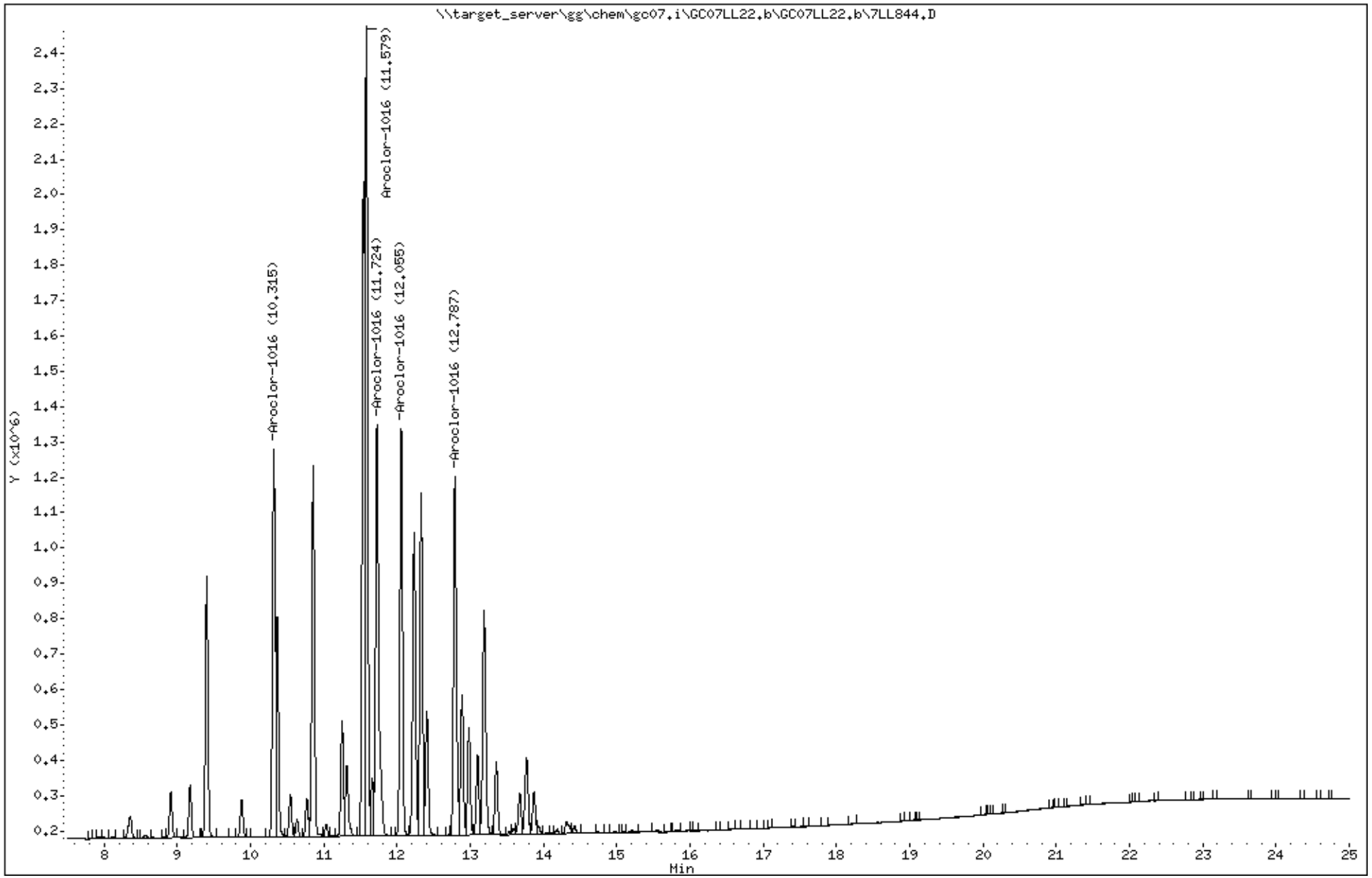
RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/mL)	CONCENTRATIONS FINAL (ug/Kg)	TARGET RANGE	RATIO	REVIEW CODE
5 Aroclor-1016					CAS #: 12674-11-2			
10.315	10.288	0.027	1096337	1.03982	34.7	80.00- 120.00	100.00	
11.578	11.550	0.028	2290457	1.11698	37.2	158.77- 238.15	208.92	
11.723	11.695	0.028	1161653	1.07641	35.9	296.98- 445.46	105.96	
12.055	12.026	0.029	1151100	1.08734	36.2	114.78- 172.17	105.00	
12.787	12.758	0.029	1014959	1.06683	35.6	112.32- 168.48	92.58	
		Average of Peak Concentrations =			35.9			

Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\GC07LL22.b\7LL844.D
Date : 22-DEC-2018 19:26
Client ID:
Sample Info: WG243328-7,TL2688

Instrument: gc07.i

Operator: BF
Column diameter: 0.53

Column phase: ZB-MultiResidue-2



Katahdin Analytical Services 2000094

REISSUE2

Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL845.D
Report Date: 26-Dec-2018 12:53

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL845.D
Lab Smp Id: WG243328-8
Inj Date : 22-DEC-2018 19:54
Operator : BF   Inst ID: gc07.i
Smp Info : WG243328-8,TL2688
Misc Info : WG243328,WG243328,WG243328-1,TL2688-1
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07LL22.b\PCB133.m
Meth Date : 24-Dec-2018 15:51 gc07.i   Quant Type: ESTD
Cal Date : 23-DEC-2018 04:43   Cal File: 7LL864.D
Als bottle: 70   QC Sample: INSTSPIKE
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: AR1260.sub
Target Version: 4.12   Sample Matrix: SOIL
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * 1000*Vt*(100/(100-M))/Ws * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
M	0.00000	% Moisture
Ws	0.03000	Weight of Sample (Kg)
Cpnd Variable		Local Compound Variable

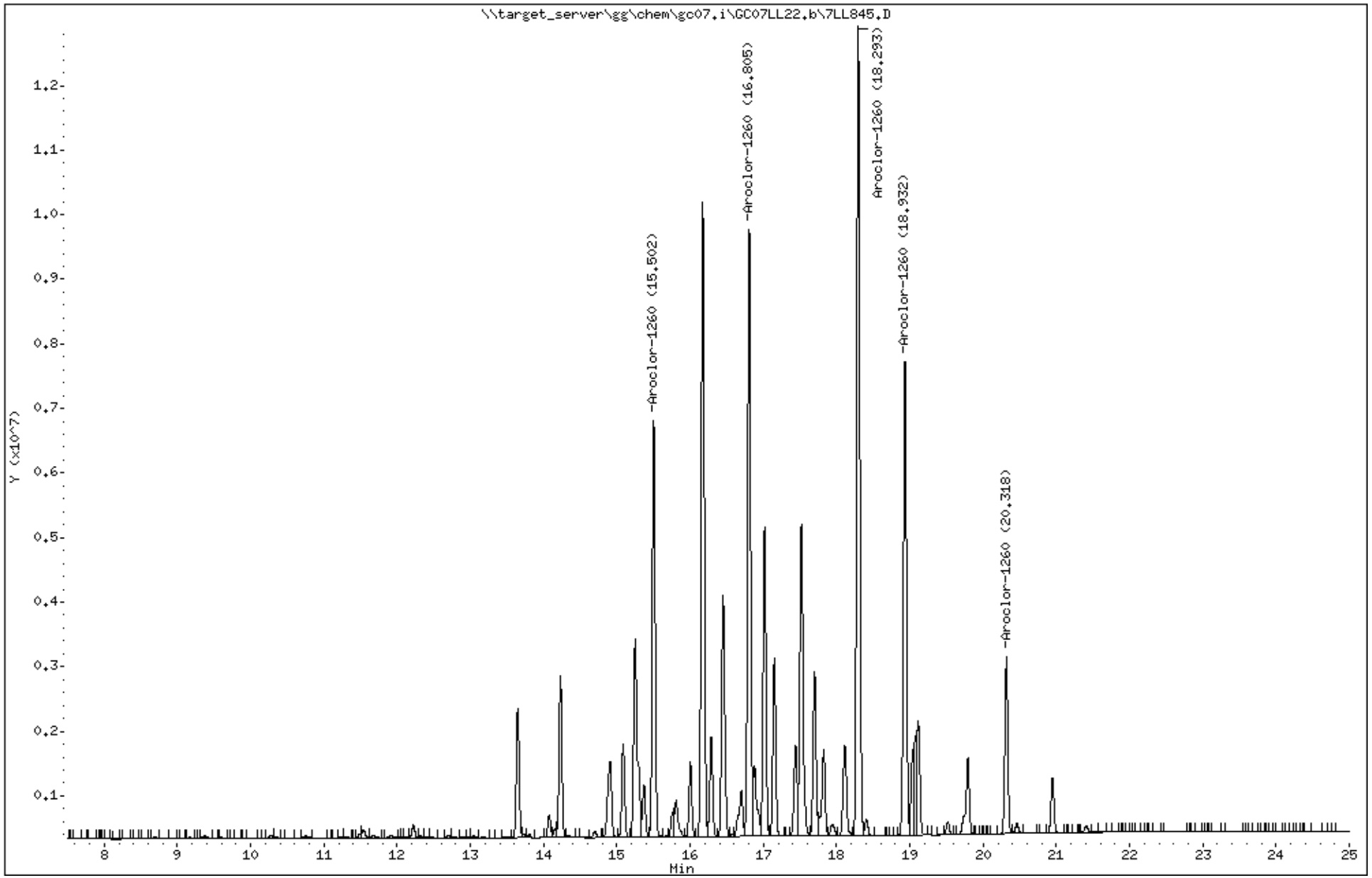
RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/mL)	CONCENTRATIONS FINAL (ug/Kg)	TARGET RANGE	RATIO	REVIEW CODE
9 Aroclor-1260					CAS #: 11096-82-5			
15.501	15.468	0.033	6440139	1.04470	34.8	80.00- 120.00	100.00	
16.805	16.770	0.035	9404176	1.08202	36.1	94.69- 142.03	146.02	
18.293	18.260	0.033	12533532	1.05188	35.1	89.28- 133.92	194.62	
18.931	18.897	0.034	7337020	1.02031	34.0	72.48- 108.72	113.93	
20.318	20.283	0.035	2738278	0.92321	30.8	0.00- 0.00	42.52	
			Average of Peak Concentrations =		34.1			

Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL845.D
Date : 22-DEC-2018 19:54
Client ID:
Sample Info: WG243328-8,TL2688

Instrument: gc07.i

Operator: BF
Column diameter: 0.53

Column phase: ZB-MultiResidue-1



Katahdin Analytical Services 2000096

REISSUE2

Data File: 7LL845.D
Report Date: 26-Dec-2018 12:53

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07LL22.b\GC07LL22.b\7LL845.D
Lab Smp Id: WG243328-8
Inj Date : 22-DEC-2018 19:54
Operator : BF Inst ID: gc07.i
Smp Info : WG243328-8,TL2688
Misc Info : WG243328,WG243328,WG243328-1,TL2688-1
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07LL22.b\PCB133.m\PCB133.m
Meth Date : 24-Dec-2018 15:51 gc07.i Quant Type: ESTD
Cal Date : 23-DEC-2018 17:10 Cal File: 7LL891.D
Als bottle: 70 QC Sample: INSTSPIKE
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1260.sub
Target Version: 4.12 Sample Matrix: SOIL

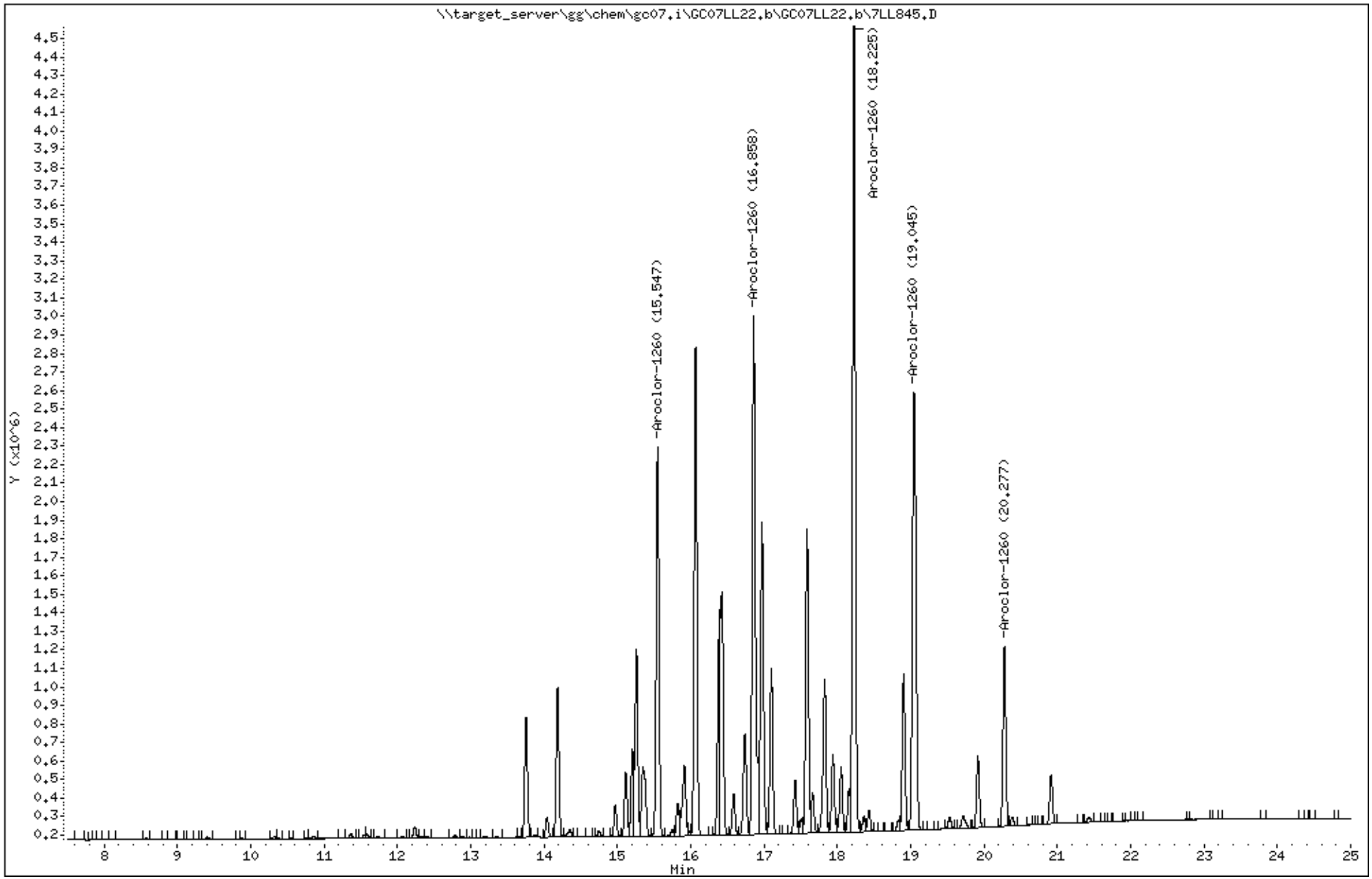
Concentration Formula: Amt * DF * 1000*Vt*(100/(100-M))/Ws * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
M	0.00000	% Moisture
Ws	0.03000	Weight of Sample (Kg)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/mL)	CONCENTRATIONS FINAL (ug/Kg)	TARGET RANGE	RATIO	REVIEW CODE
9 Aroclor-1260					CAS #: 11096-82-5			
15.546	15.515	0.031	2103728	1.07296	35.8	80.00- 120.00	100.00	
16.858	16.826	0.032	2798049	1.10801	36.9	94.69- 142.03	133.00	
18.224	18.193	0.031	4348845	1.08121	36.0	89.28- 133.92	206.72	
19.044	19.015	0.029	2359447	1.02346	34.1	72.48- 108.72	112.16	
20.276	20.245	0.031	967773	0.96910	32.3	0.00- 0.00	46.00	
			Average of Peak Concentrations =		35.0			

Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\GC07LL22.b\7LL845.D
Date : 22-DEC-2018 19:54
Client ID:
Sample Info: WG243328-8,TL2688
Column phase: ZB-MultiResidue-2

Instrument: gc07.i
Operator: BF
Column diameter: 0.53



Katahdin Analytical Services 2000098

REISSUE2

Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL846.D
Report Date: 26-Dec-2018 13:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL846.D
Lab Smp Id: WG243328-9
Inj Date : 22-DEC-2018 20:22
Operator : BF   Inst ID: gc07.i
Smp Info : WG243328-9
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07LL22.b\PCB133.m
Meth Date : 24-Dec-2018 15:51 gc07.i   Quant Type: ESTD
Cal Date : 22-DEC-2018 23:37   Cal File: 7LL853.D
Als bottle: 71   Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: AR1254.sub
Target Version: 4.12   Sample Matrix: SOIL

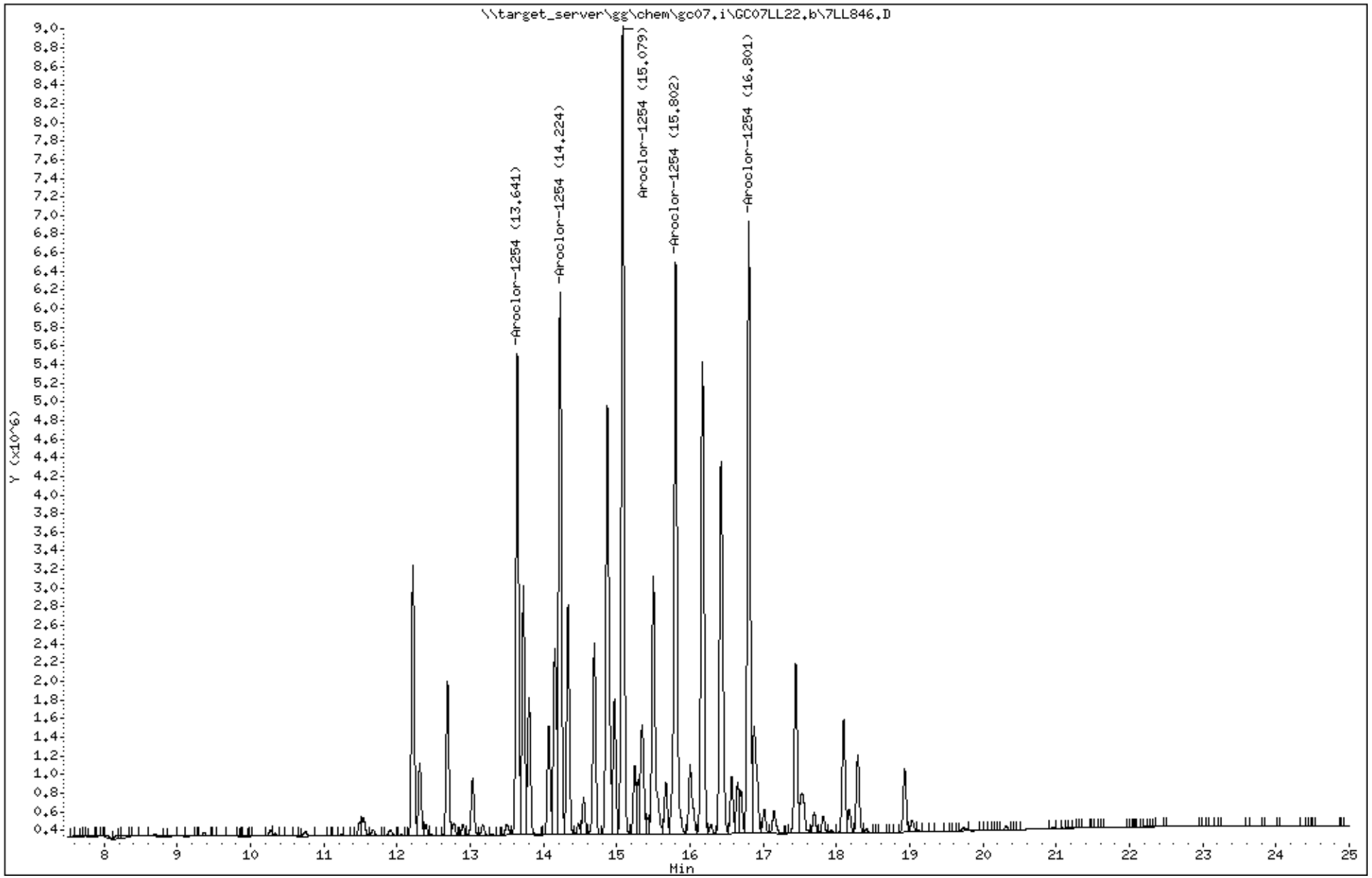
Concentration Formula: Amt * DF * 1000*Vt*(100/(100-M))/Ws * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
M	0.00000	% Moisture
Ws	0.03000	Weight of Sample (Kg)
Cpnd Variable		Local Compound Variable

			AMOUNTS					
				CAL-AMT	ON-COL			
RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
8 Aroclor-1254						CAS #: 11097-69-1		
13.640	13.638	0.002	5163652	1.00000	0.988	80.00- 120.00	100.00	
14.223	14.223	0.000	5828684	1.00000	0.998	80.00- 120.00	112.88	
15.078	15.078	0.000	8675109	1.00000	1.04	80.00- 120.00	168.00	
15.802	15.803	-0.001	6136787	1.00000	1.01	80.00- 120.00	118.85	
16.800	16.799	0.001	6575175	1.00000	1.01	0.00- 0.00	127.34	
Average of Peak Amounts =					1.00920			

Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL846.D
Date : 22-DEC-2018 20:22
Client ID:
Sample Info: WG243328-9

Instrument: gc07.i
Operator: BF
Column phase: ZB-MultiResidue-1
Column diameter: 0.53



Data File: 7LL846.D
Report Date: 26-Dec-2018 13:06

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07LL22.b\GC07LL22.b\7LL846.D
Lab Smp Id: WG243328-9
Inj Date : 22-DEC-2018 20:22
Operator : BF   Inst ID: gc07.i
Smp Info : WG243328-9
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07LL22.b\PCB133.m\PCB133.m
Meth Date : 24-Dec-2018 15:51 gc07.i   Quant Type: ESTD
Cal Date : 22-DEC-2018 20:22   Cal File: 7LL846.D
Als bottle: 71   Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: AR1254.sub
Target Version: 4.12   Sample Matrix: SOIL

Concentration Formula: Amt * DF * 1000*Vt*(100/(100-M))/Ws * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
M	0.00000	% Moisture
Ws	0.03000	Weight of Sample (Kg)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
8 Aroclor-1254					CAS #: 11097-69-1			
13.753	13.751	0.002	1908439	1.00000	1.00	80.00- 120.00	100.00(M)	M9
14.178	14.176	0.002	1924756	1.00000	1.00	80.00- 120.00	100.85	M9
15.197	15.196	0.001	2735061	1.00000	1.00	80.00- 120.00	143.31	M9
15.815	15.814	0.001	2040579	1.00000	1.00	80.00- 120.00	106.92	M9
16.853	16.853	0.000	2070595	1.00000	1.00	80.00- 120.00	108.50	M9
Average of Peak Amounts =					1.00000			

BF
1:20 pm, Dec 26, 2018

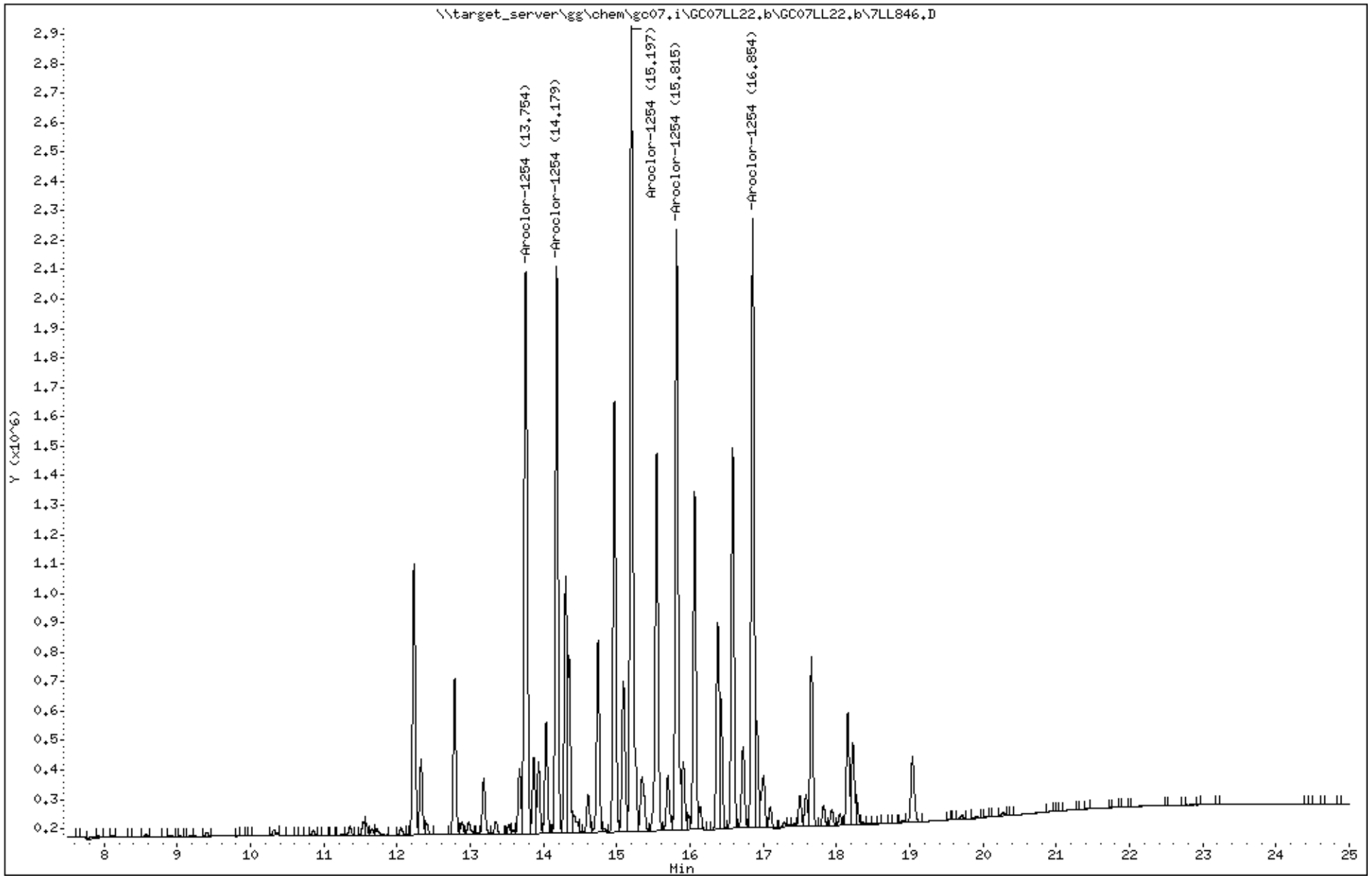
QC Flag Legend

M - Compound response manually integrated.

Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\GC07LL22.b\7LL846.D
Date : 22-DEC-2018 20:22
Client ID:
Sample Info: WG243328-9

Instrument: gc07.i

Operator: BF
Column phase: ZB-MultiResidue-2
Column diameter: 0.53



Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL853.D
Report Date: 26-Dec-2018 13:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL853.D
Lab Smp Id: WG243328-16
Inj Date : 22-DEC-2018 23:37
Operator : BF   Inst ID: gc07.i
Smp Info : WG243328-16
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07LL22.b\PCB133.m
Meth Date : 24-Dec-2018 15:51 gc07.i   Quant Type: ESTD
Cal Date : 22-DEC-2018 23:37   Cal File: 7LL853.D
Als bottle: 78   Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: AR1242.sub
Target Version: 4.12   Sample Matrix: SOIL

Concentration Formula: Amt * DF * 1000*Vt*(100/(100-M))/Ws * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
M	0.00000	% Moisture
Ws	0.03000	Weight of Sample (Kg)
Cpnd Variable		Local Compound Variable

			AMOUNTS					
				CAL-AMT	ON-COL			
RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
5 Aroclor-1242					CAS #: 53469-21-9			
10.269	10.272	-0.003	2990440	1.00000	0.987	0.00- 0.00	100.00	
10.745	10.748	-0.003	2292248	1.00000	0.987	0.00- 0.00	76.65	
11.524	11.530	-0.006	6015305	1.00000	0.986	0.00- 0.00	201.15	
12.690	12.693	-0.003	2665302	1.00000	0.971	0.00- 0.00	89.13	
13.802	13.803	-0.001	3100656	1.00000	0.989	0.00- 0.00	103.69	
Average of Peak Amounts =					0.98400			

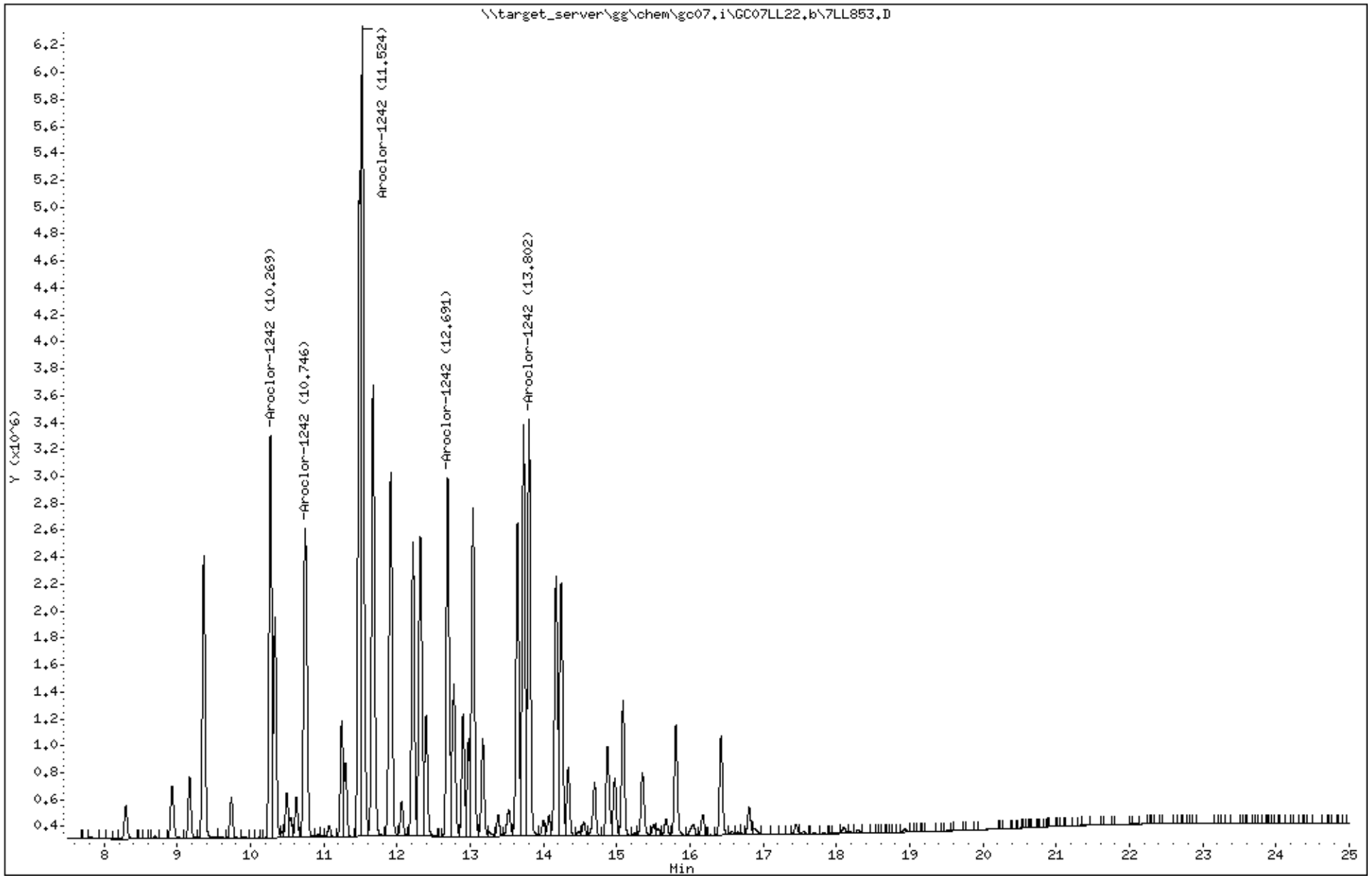
Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL853.D
Date : 22-DEC-2018 23:37
Client ID:
Sample Info: WG243328-16

Instrument: gc07.i

Operator: BF

Column phase: ZB-MultiResidue-1

Column diameter: 0.53



Data File: 7LL853.D
Report Date: 26-Dec-2018 13:06

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07LL22.b\GC07LL22.b\7LL853.D
Lab Smp Id: WG243328-16
Inj Date : 22-DEC-2018 23:37
Operator : BF   Inst ID: gc07.i
Smp Info : WG243328-16
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07LL22.b\PCB133.m\PCB133.m
Meth Date : 24-Dec-2018 15:51 gc07.i   Quant Type: ESTD
Cal Date : 22-DEC-2018 23:37   Cal File: 7LL853.D
Als bottle: 78   Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: AR1242.sub
Target Version: 4.12   Sample Matrix: SOIL

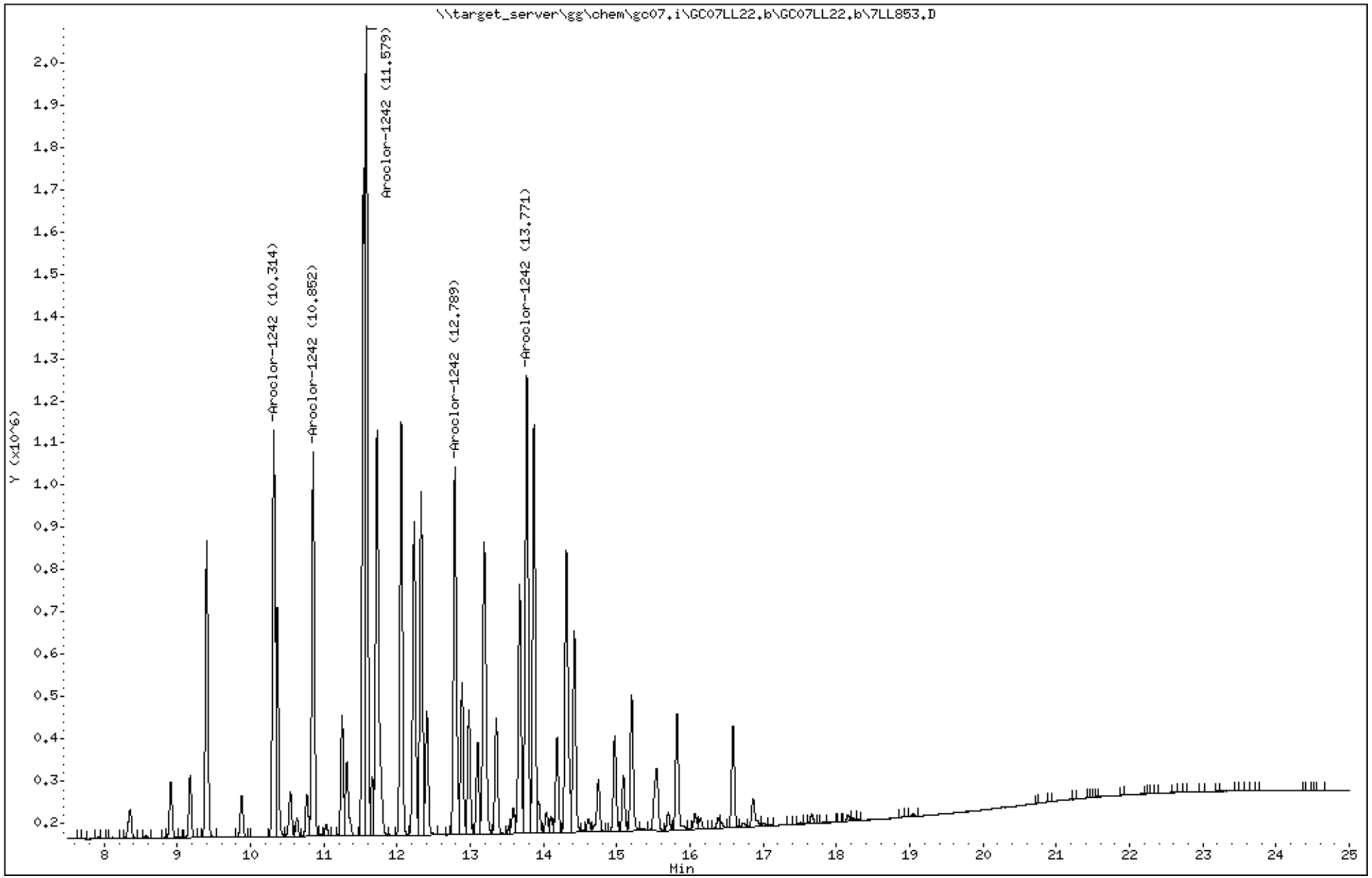
Concentration Formula: Amt * DF * 1000*Vt*(100/(100-M))/Ws * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
M	0.00000	% Moisture
Ws	0.03000	Weight of Sample (Kg)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
6 Aroclor-1242					CAS #: 53469-21-9			
10.313	10.318	-0.005	962480	1.00000	1.00	0.00- 0.00	100.00	
10.852	10.855	-0.003	909194	1.00000	1.00	0.00- 0.00	94.46	
11.578	11.583	-0.005	1913530	1.00000	1.00	0.00- 0.00	198.81	
12.788	12.790	-0.002	868314	1.00000	1.00	0.00- 0.00	90.22	
13.770	13.773	-0.003	1081938	1.00000	1.00	0.00- 0.00	112.41	
		Average of Peak Amounts =			1.00000			

Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\GC07LL22.b\7LL853.D
Date : 22-DEC-2018 23:37
Client ID:
Sample Info: WG243328-16

Instrument: gc07.i
Operator: BF
Column phase: ZB-MultiResidue-2
Column diameter: 0.53



Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL860.D
Report Date: 26-Dec-2018 13:05

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL860.D
Lab Smp Id: WG243328-23
Inj Date : 23-DEC-2018 02:52
Operator : BF   Inst ID: gc07.i
Smp Info : WG243328-23
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07LL22.b\PCB133.m
Meth Date : 24-Dec-2018 15:51 gc07.i   Quant Type: ESTD
Cal Date : 23-DEC-2018 04:43   Cal File: 7LL864.D
Als bottle: 85   Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: AR1221.sub
Target Version: 4.12   Sample Matrix: SOIL

Concentration Formula: Amt * DF * 1000*Vt*(100/(100-M))/Ws * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
M	0.00000	% Moisture
Ws	0.03000	Weight of Sample (Kg)
Cpnd Variable		Local Compound Variable

				AMOUNTS				
				CAL-AMT	ON-COL			
RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
2 Aroclor-1221						CAS #: 11104-28-2		
8.926	8.899	0.027	1478719	1.00000	1.00	0.00- 0.00	100.00	
9.354	9.327	0.027	3461667	1.00000	1.00	0.00- 0.00	234.10	
		Average of Peak Amounts =			1.00000			

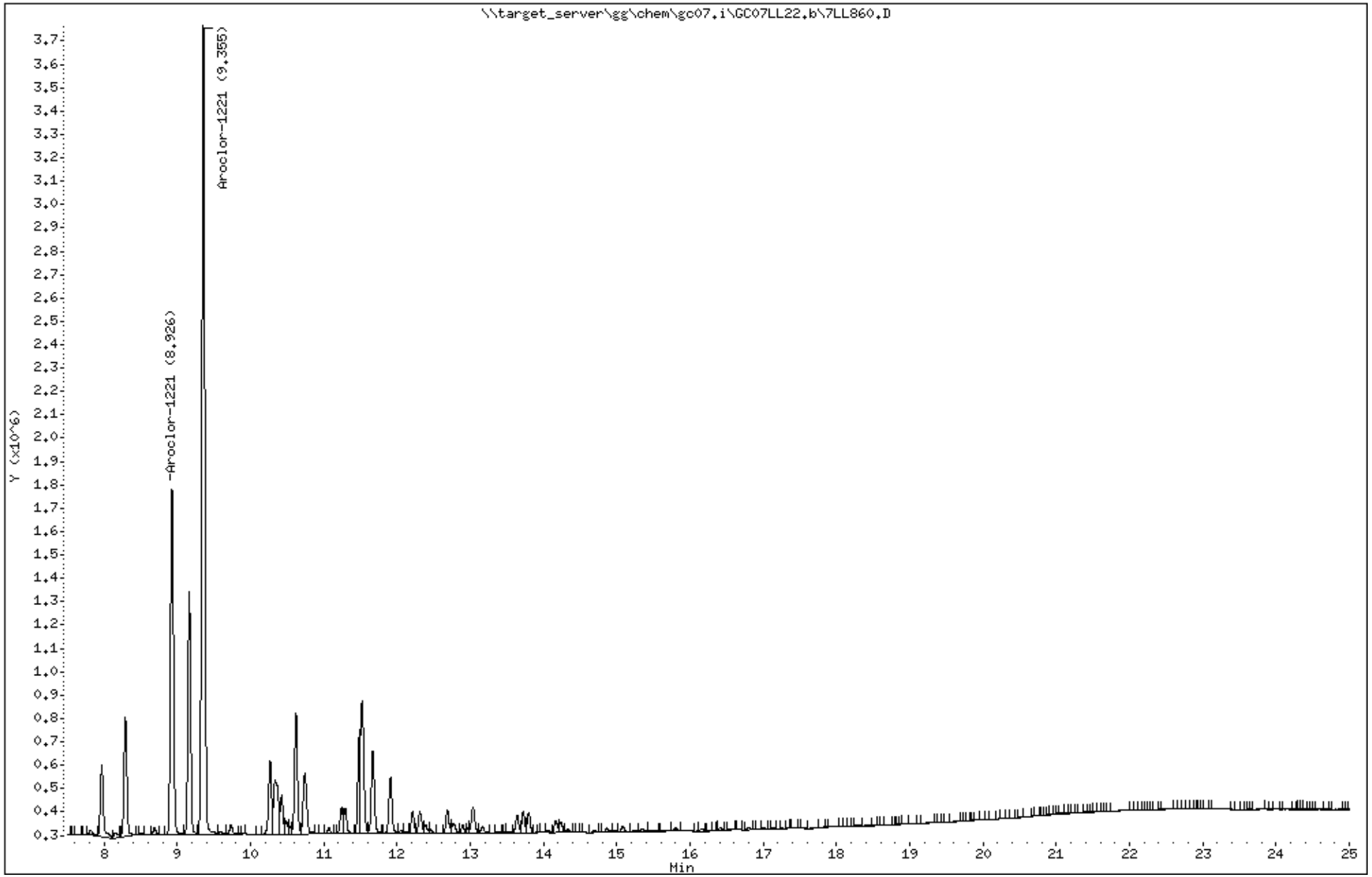
Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL860.D
Date : 23-DEC-2018 02:52
Client ID:
Sample Info: WG243328-23

Instrument: gc07.i

Operator: BF

Column phase: ZB-MultiResidue-1

Column diameter: 0.53



Data File: 7LL860.D
Report Date: 26-Dec-2018 13:06

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07LL22.b\GC07LL22.b\7LL860.D
Lab Smp Id: WG243328-23
Inj Date : 23-DEC-2018 02:52
Operator : BF   Inst ID: gc07.i
Smp Info : WG243328-23
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07LL22.b\PCB133.m\PCB133.m
Meth Date : 24-Dec-2018 15:51 gc07.i   Quant Type: ESTD
Cal Date : 23-DEC-2018 04:43   Cal File: 7LL864.D
Als bottle: 85   Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: AR1221.sub
Target Version: 4.12   Sample Matrix: SOIL

Concentration Formula: Amt * DF * 1000*Vt*(100/(100-M))/Ws * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
M	0.00000	% Moisture
Ws	0.03000	Weight of Sample (Kg)
Cpnd Variable		Local Compound Variable

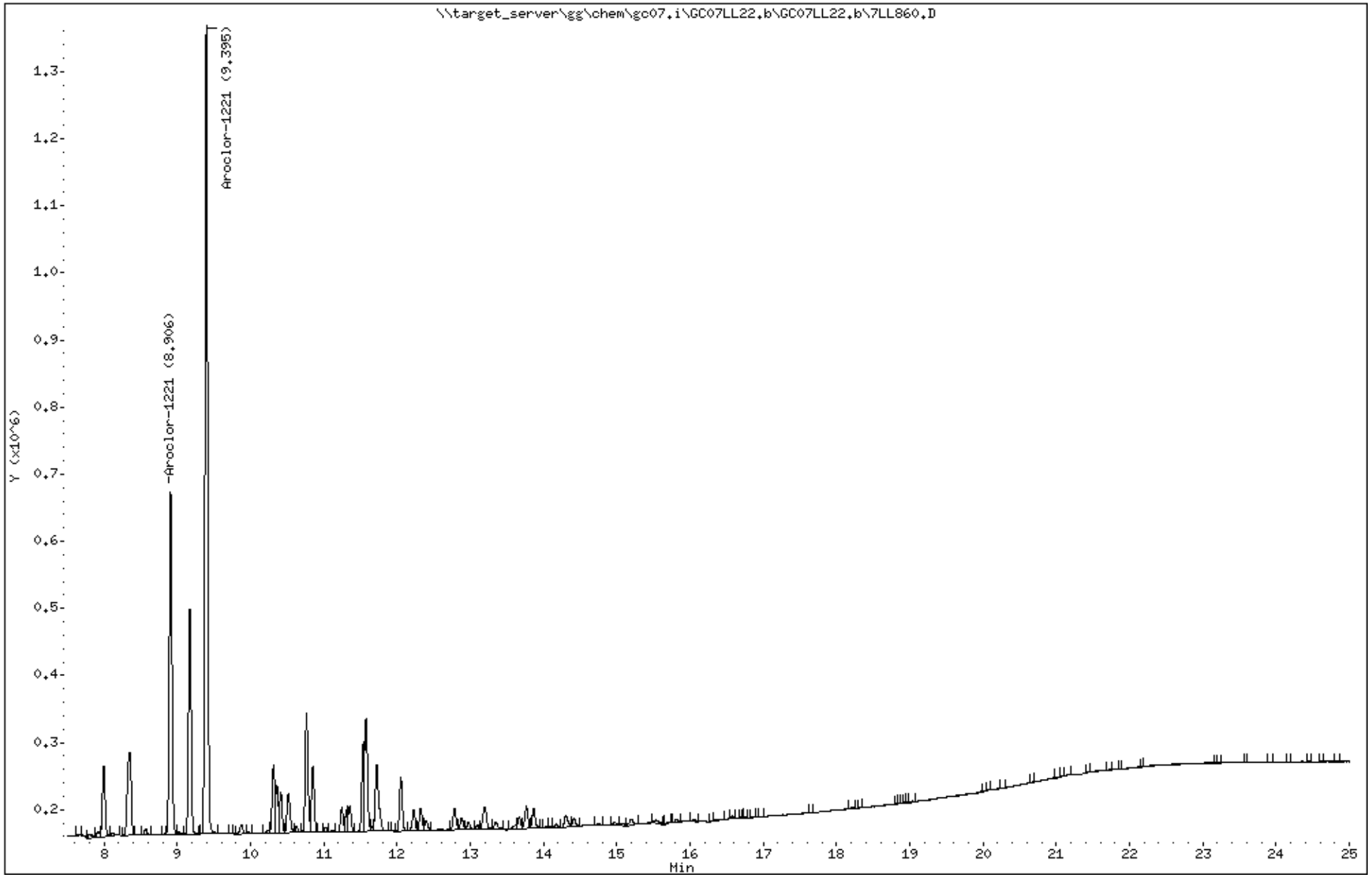
				AMOUNTS				
				CAL-AMT	ON-COL			
RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
3 Aroclor-1221						CAS #: 11104-28-2		
8.906	8.879	0.027	510326	1.00000	1.00	0.00- 0.00	100.00	
9.394	9.367	0.027	1204458	1.00000	1.00	0.00- 0.00	236.02	
		Average of Peak Amounts =			1.00000			

Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\GC07LL22.b\7LL860.D
Date : 23-DEC-2018 02:52
Client ID:
Sample Info: WG243328-23

Instrument: gc07.i

Operator: BF

Column phase: ZB-MultiResidue-2
Column diameter: 0.53



Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL861.D
Report Date: 26-Dec-2018 13:05

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL861.D
Lab Smp Id: WG243328-24
Inj Date : 23-DEC-2018 03:19
Operator : BF Inst ID: gc07.i
Smp Info : WG243328-24
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07LL22.b\PCB133.m
Meth Date : 24-Dec-2018 15:51 gc07.i Quant Type: ESTD
Cal Date : 23-DEC-2018 04:43 Cal File: 7LL864.D
Als bottle: 86 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1232.sub
Target Version: 4.12 Sample Matrix: SOIL

Concentration Formula: Amt * DF * 1000*Vt*(100/(100-M))/Ws * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
M	0.00000	% Moisture
Ws	0.03000	Weight of Sample (Kg)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
4 Aroclor-1232					CAS #: 11141-16-5			
9.353	9.329	0.024	2890037	1.00000	1.00	0.00- 0.00	100.00	
10.264	10.239	0.025	1609192	1.00000	1.00	0.00- 0.00	55.68	
11.518	11.499	0.019	3206136	1.00000	1.00	0.00- 0.00	110.94	
12.683	12.657	0.026	1270203	1.00000	1.00	0.00- 0.00	43.95	
13.793	13.769	0.024	1492406	1.00000	1.00	0.00- 0.00	51.64	
Average of Peak Amounts =				1.00000				

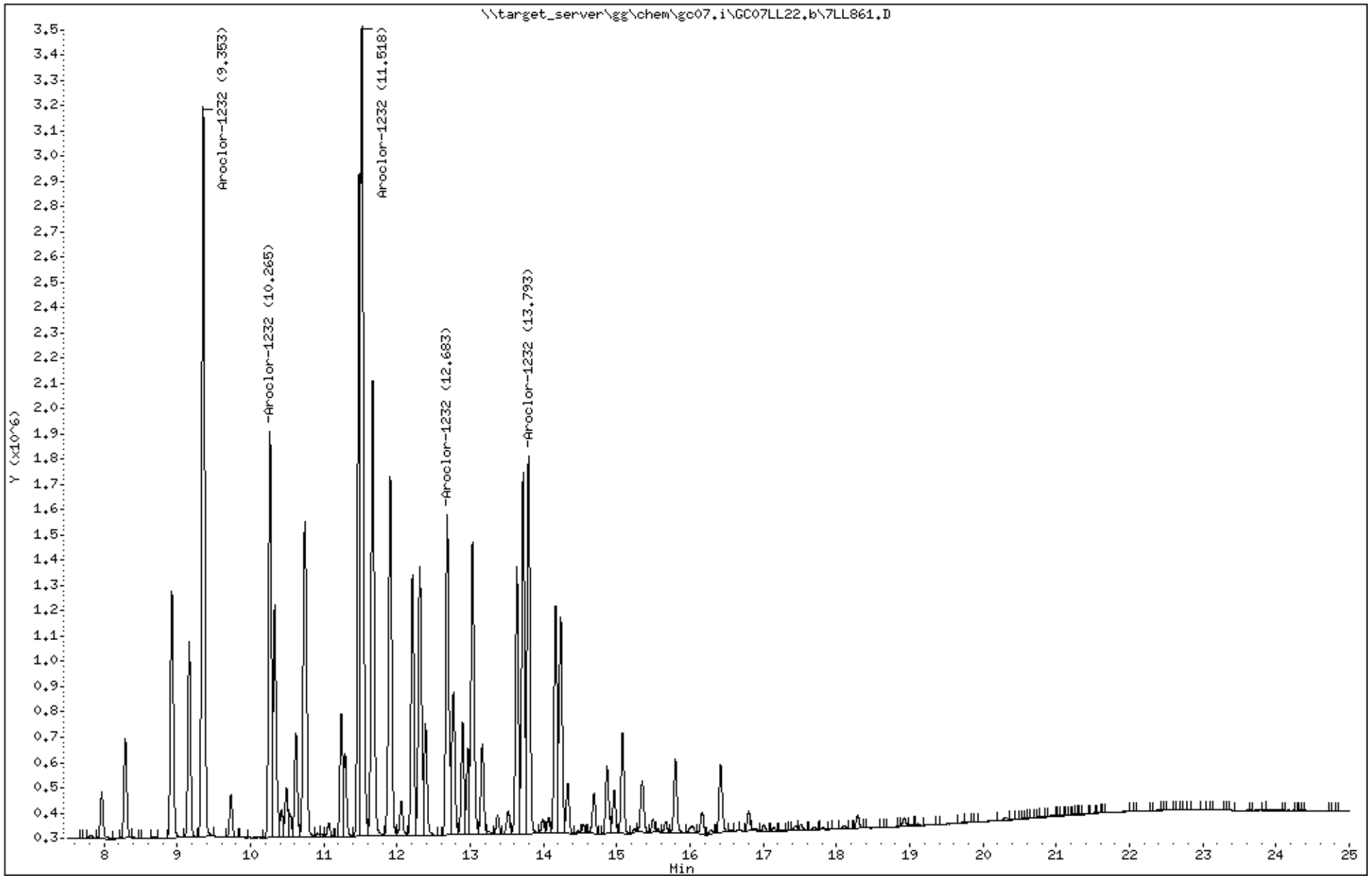
Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL861.D
Date : 23-DEC-2018 03:19
Client ID:
Sample Info: WG243328-24

Instrument: gc07.i

Operator: BF

Column phase: ZB-MultiResidue-1

Column diameter: 0.53



Katahdin Analytical Services 2000112

REISSUE2

Data File: 7LL861.D
Report Date: 26-Dec-2018 13:06

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07LL22.b\GC07LL22.b\7LL861.D
Lab Smp Id: WG243328-24
Inj Date : 23-DEC-2018 03:19
Operator : BF   Inst ID: gc07.i
Smp Info : WG243328-24
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07LL22.b\PCB133.m\PCB133.m
Meth Date : 24-Dec-2018 15:51 gc07.i   Quant Type: ESTD
Cal Date : 23-DEC-2018 03:19   Cal File: 7LL861.D
Als bottle: 86   Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: AR1232.sub
Target Version: 4.12   Sample Matrix: SOIL

Concentration Formula: Amt * DF * 1000*Vt*(100/(100-M))/Ws * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
M	0.00000	% Moisture
Ws	0.03000	Weight of Sample (Kg)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
4 Aroclor-1232					CAS #: 11141-16-5			
9.394	9.367	0.027	995157	1.00000	1.00	0.00- 0.00	100.00(M)	M9
10.311	10.282	0.029	522759	1.00000	1.00	0.00- 0.00	52.53	M9
11.574	11.548	0.026	1024620	1.00000	1.00	0.00- 0.00	102.96	M9
12.049	12.022	0.027	502220	1.00000	1.00	0.00- 0.00	50.47	M9
13.764	13.737	0.027	507774	1.00000	1.00	0.00- 0.00	51.02	M9
Average of Peak Amounts =					1.00000			

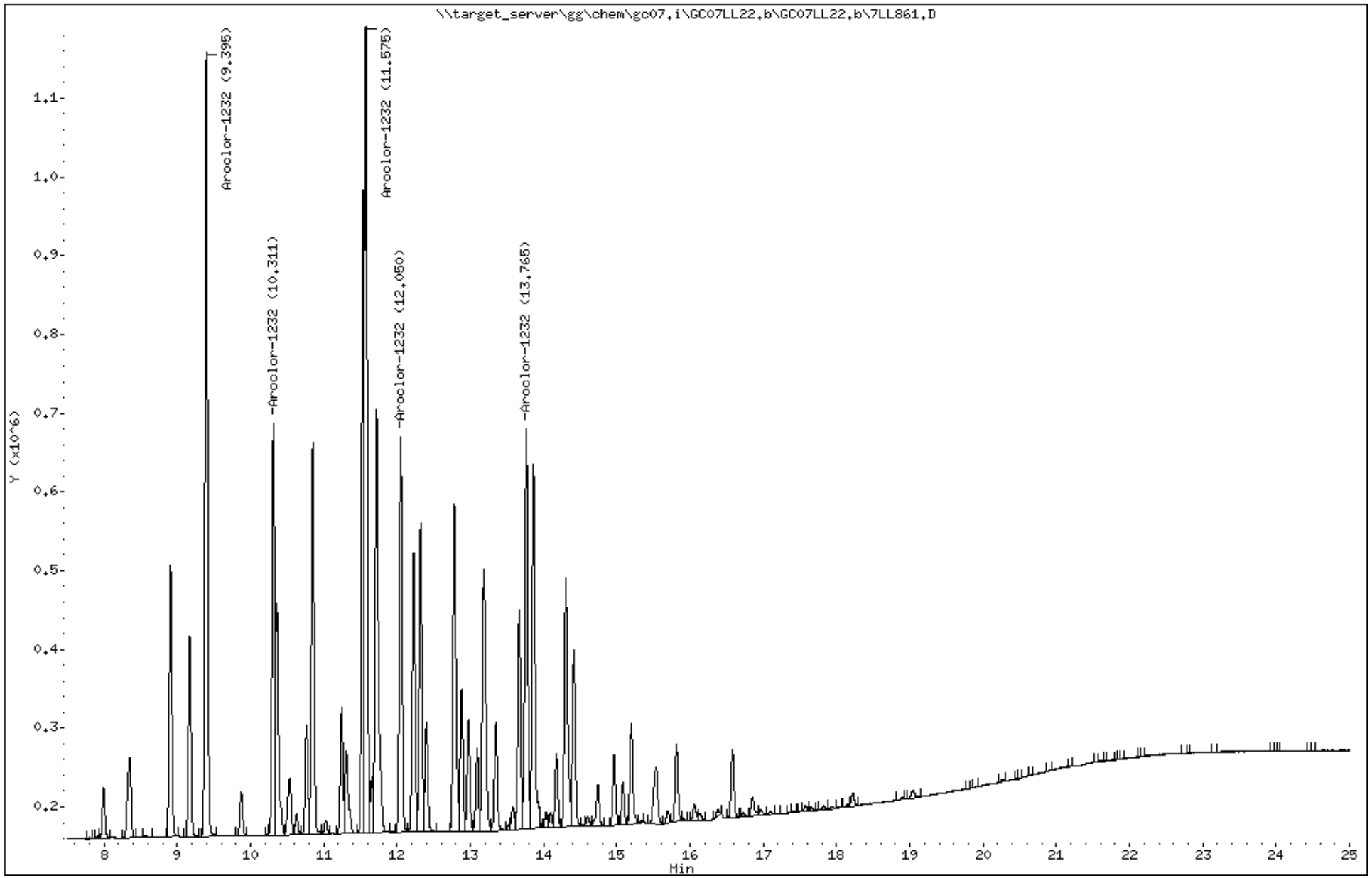
BF
1:21 pm, Dec 26, 2018

QC Flag Legend

M - Compound response manually integrated.

Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\GC07LL22.b\7LL861.D
Date : 23-DEC-2018 03:19
Client ID:
Sample Info: WG243328-24

Instrument: gc07.i
Operator: BF
Column phase: ZB-MultiResidue-2
Column diameter: 0.53



Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL862.D
Report Date: 26-Dec-2018 13:05

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL862.D
Lab Smp Id: WG243328-25
Inj Date : 23-DEC-2018 03:47
Operator : BF Inst ID: gc07.i
Smp Info : WG243328-25
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07LL22.b\PCB133.m
Meth Date : 24-Dec-2018 15:51 gc07.i Quant Type: ESTD
Cal Date : 23-DEC-2018 04:43 Cal File: 7LL864.D
Als bottle: 87 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1248.sub
Target Version: 4.12 Sample Matrix: SOIL

Concentration Formula: Amt * DF * 1000*Vt*(100/(100-M))/Ws * CpndVariable

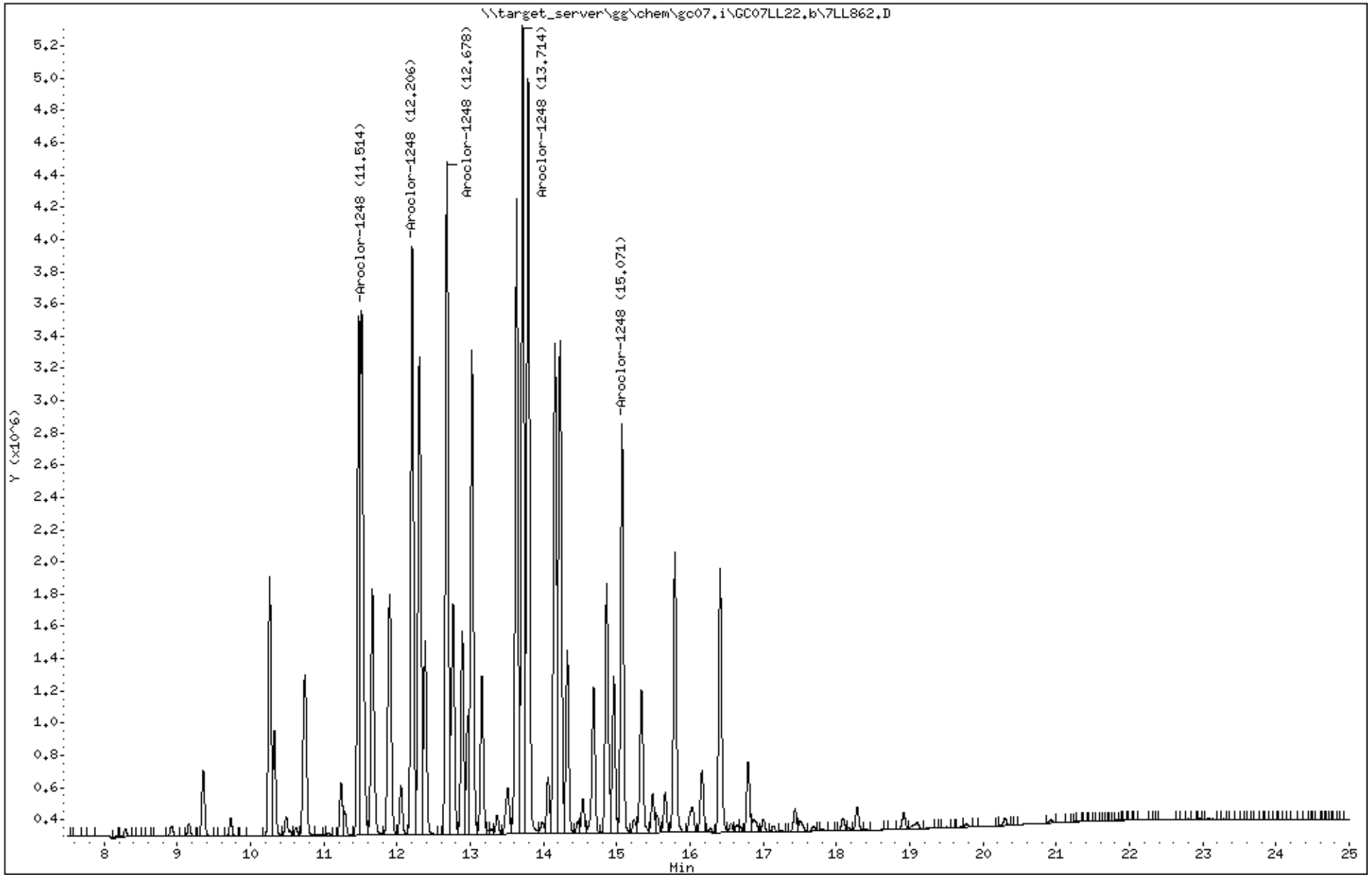
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
M	0.00000	% Moisture
Ws	0.03000	Weight of Sample (Kg)
Cpnd Variable		Local Compound Variable

			AMOUNTS					
				CAL-AMT	ON-COL			
RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
7 Aroclor-1248					CAS #: 12672-29-6			
11.514	11.487	0.027	3258273	1.00000	1.00	0.00- 0.00	100.00	
12.205	12.172	0.033	3646730	1.00000	1.00	0.00- 0.00	111.92	
12.677	12.645	0.032	4172761	1.00000	1.00	0.00- 0.00	128.07	
13.714	13.682	0.032	5015178	1.00000	1.00	0.00- 0.00	153.92	
15.070	15.038	0.032	2540985	1.00000	1.00	0.00- 0.00	77.99	
Average of Peak Amounts =					1.00000			

Data File: \\target_server\gg\chem\gc07.i\GC07LL22.b\7LL862.D
Date : 23-DEC-2018 03:47
Client ID:
Sample Info: WG243328-25

Instrument: gc07.i

Operator: BF
Column phase: ZB-MultiResidue-1
Column diameter: 0.53



Katahdin Analytical Services 2000116

REISSUE2

Data File: 7LL862.D
Report Date: 26-Dec-2018 13:06

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07LL22.b\GC07LL22.b\7LL862.D
Lab Smp Id: WG243328-25
Inj Date : 23-DEC-2018 03:47
Operator : BF   Inst ID: gc07.i
Smp Info : WG243328-25
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07LL22.b\PCB133.m\PCB133.m
Meth Date : 24-Dec-2018 15:51 gc07.i   Quant Type: ESTD
Cal Date : 23-DEC-2018 04:43   Cal File: 7LL864.D
Als bottle: 87   Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: AR1248.sub
Target Version: 4.12   Sample Matrix: SOIL

Concentration Formula: Amt * DF * 1000*Vt*(100/(100-M))/Ws * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
M	0.00000	% Moisture
Ws	0.03000	Weight of Sample (Kg)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
7 Aroclor-1248					CAS #: 12672-29-6			
11.529	11.497	0.032	1037457	1.00000	1.00	0.00- 0.00	100.00(M)	M9
12.220	12.187	0.033	1223154	1.00000	1.00	0.00- 0.00	117.90	M9
12.775	12.743	0.032	1366690	1.00000	1.00	0.00- 0.00	131.73	M9
13.755	13.723	0.032	1854631	1.00000	1.00	0.00- 0.00	178.77	M9
14.295	14.263	0.032	1088242	1.00000	1.00	0.00- 0.00	104.90	M9
Average of Peak Amounts =					1.00000			

BF
1:21 pm, Dec 26, 2018

QC Flag Legend

M - Compound response manually integrated.

Data File: \\target_server\gc\chem\gc07.i\GC07LL22.b\GC07LL22.b\7LL862.D
Date : 23-DEC-2018 03:47
Client ID:
Sample Info: MG243328-25

Instrument: gc07.i
Operator: BF
Column diameter: 0.53

Column phase: ZB-Multi Residue-2

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : New Bedford Harbor
Lab ID : WG245120-1
Lab File ID : 7MA488.D
Initial Calibration Date(s): 12/22/18 16:40 12/23/18 18:06

SDG: SL9735
Analytical Date: 01/23/19 14:01
Instrument ID: GC07
Column ID: A

	Compound	RRF/Amount	RF1	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type	
20	Aroclor-1016(2)	2488298	2793021	0.001	12.24623	20.00000	Averaged	
20	Aroclor-1016(5)	2881960	3312546	0.001	14.94072	20.00000	Averaged	
20	Aroclor-1016(4)	2921010	3404051	0.001	16.53677	20.00000	Averaged	
20	Aroclor-1016(1)	3267956	3787063	0.001	15.88478	20.00000	Averaged	
20	Aroclor-1016(3)	6507947	7644582	0.001	17.46533	20.00000	Averaged	
370	Aroclor-1260(3)	11915389	13415213	0.001	12.58729	20.00000	Averaged	
370	Aroclor-1260(5)	2966027	3007077	0.001	1.38400	20.00000	Averaged	
370	Aroclor-1260(1)	6164557	6475966	0.001	5.05161	20.00000	Averaged	
370	Aroclor-1260(4)	7190993	7654625	0.001	6.44740	20.00000	Averaged	
370	Aroclor-1260(2)	8691284	9111325	0.001	4.83290	20.00000	Averaged	
3	Tetrachloro-m-xylene	149760133	185097800	0.001	23.59618	20.00000	Averaged	<-
12	Decachlorobiphenyl	99863463	98352700	0.001	-1.51283	20.00000	Averaged	

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Data File: \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA488.D
Report Date: 24-Jan-2019 14:17

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA488.D
Lab Smp Id: WG245120-1
Inj Date : 23-JAN-2019 14:01
Operator : BF   Inst ID: gc07.i
Smp Info : WG245120-1,SL9735
Misc Info : WG245120,WG245120,WG243328,SL9735-1
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07MA23.b\PCB133.m
Meth Date : 24-Jan-2019 12:00 bflanders Quant Type: ESTD
Cal Date : 23-DEC-2018 04:43   Cal File: 7LL864.D
Als bottle: 66   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: AR1660.sub
Target Version: 4.12   Sample Matrix: WATER
Processing Host: INSPIRON1

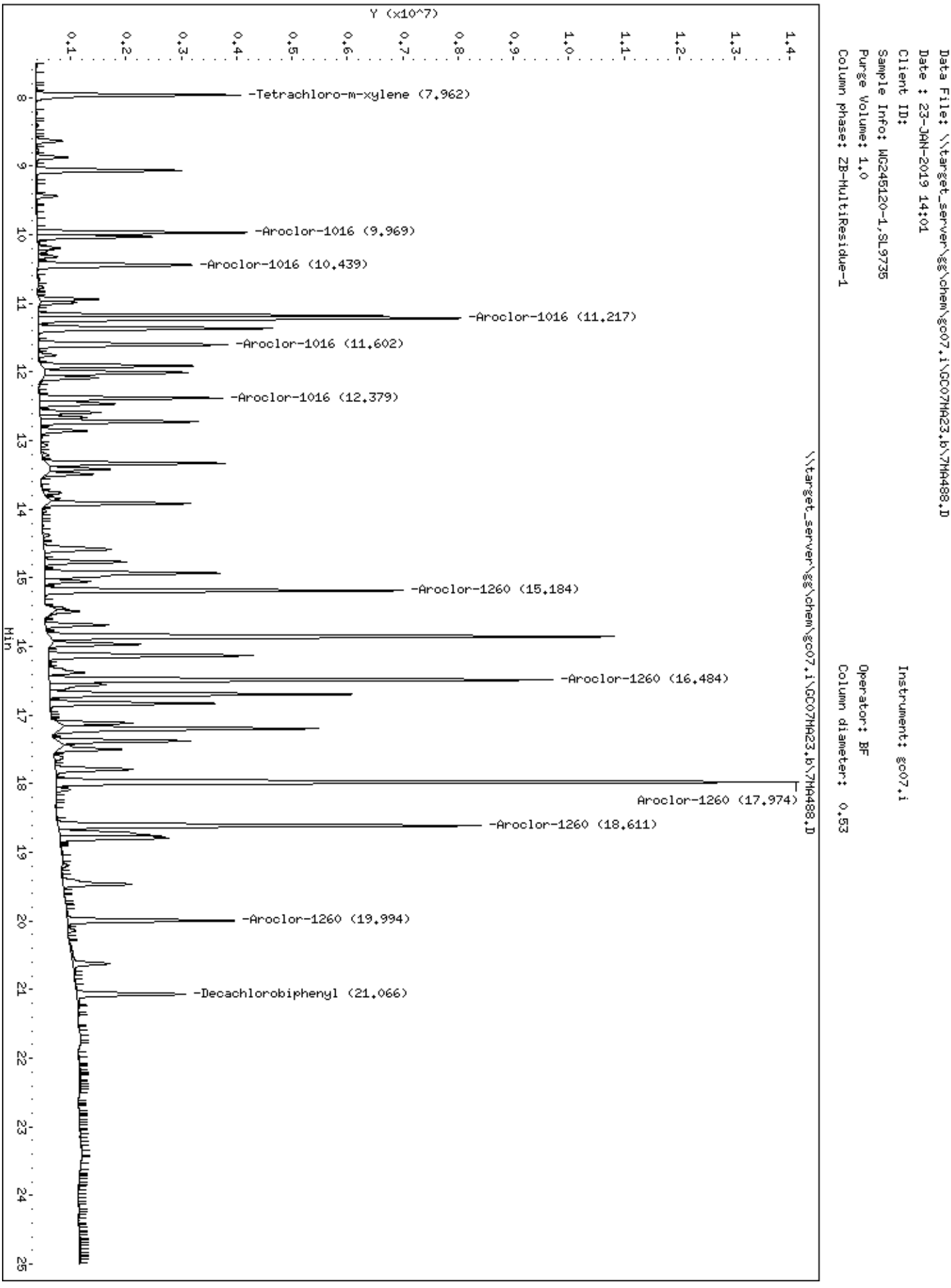
Concentration Formula: Amt * DF * Vt*(1/Vo)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
$ 3 Tetrachloro-m-xylene					CAS #: 877-09-8			
7.962	7.971	-0.009	3701956	0.02000	0.0247			
6 Aroclor-1016					CAS #: 12674-11-2			
9.968	9.976	-0.008	3787063	1.00000	1.16	80.00- 120.00	100.00(M)	M9
10.438	10.448	-0.010	2793021	1.00000	1.12	158.77- 238.15	73.75	M9
11.217	11.224	-0.007	7644582	1.00000	1.17	296.98- 445.46	201.86	M9
11.602	11.609	-0.007	3404051	1.00000	1.16	114.78- 172.16	89.89	M9
12.378	12.388	-0.010	3312546	1.00000	1.15	112.32- 168.48	87.47	M9
Average of Peak Amounts =					1.15200			
9 Aroclor-1260					CAS #: 11096-82-5			
15.183	15.193	-0.010	6475966	1.00000	1.05	80.00- 120.00	100.00(M)	M5
16.483	16.491	-0.008	9111325	1.00000	1.05	94.69- 142.03	140.69	M5
17.973	17.979	-0.006	13415213	1.00000	1.12	89.28- 133.92	207.15	M5
18.610	18.616	-0.006	7654625	1.00000	1.06	72.48- 108.72	118.20	M5
19.993	20.001	-0.008	3007077	1.00000	1.01	0.00- 0.00	46.43	M5
Average of Peak Amounts =					1.05800			
$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
21.065	21.071	-0.006	1967054	0.02000	0.0197			

BF

2:52 pm, Jan 24, 2019


Data File: \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA488.D
Date : 23-JAN-2019 14:01
Client ID:
Sample Info: WG245120-1,SL9735
Purge Volume: 1.0
Column phase: ZB-MultiResidue-1
Instrument: gc07.i
Operator: BF
Column diameter: 0.53
Y (x10^7)
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.1
1.2
1.3
1.4
Min
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
-Tetrachloro-m-xylene (7.962)
-Aroclor-1016 (9.969)
-Aroclor-1016 (10.439)
-Aroclor-1016 (11.217)
-Aroclor-1016 (11.602)
-Aroclor-1016 (12.379)
-Aroclor-1260 (15.184)
-Aroclor-1260 (16.484)
Aroclor-1260 (17.974)
-Aroclor-1260 (18.611)
-Aroclor-1260 (19.994)
-Decachlorobiphenyl (21.066)
\\target_server\gg\chem\gc07.i\GC07MA23.b\7MA488.D

Katahdin
ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : New Bedford Harbor
SDG: SL9735
Lab ID : WG245120-1
Analytical Date: 01/23/19 14:01
Lab File ID : 7MA488.D
Instrument ID: GC07
Initial Calibration Date(s): 12/22/18 16:40 12/23/18 18:06
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF1	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type	
20	Aroclor-1016(1)	1054353	1206971	0.001	14.47499	20.00000	Averaged	
20	Aroclor-1016(4)	1058638	1162787	0.001	9.83797	20.00000	Averaged	
20	Aroclor-1016(3)	1079194	1199281	0.001	11.12751	20.00000	Averaged	
20	Aroclor-1016(2)	2050576	2340262	0.001	14.12706	20.00000	Averaged	
20	Aroclor-1016(5)	951380	1032160	0.001	8.49084	20.00000	Averaged	
370	Aroclor-1260(1)	1960683	1995038	0.001	1.75219	20.00000	Averaged	
370	Aroclor-1260(4)	2305366	2140753	0.001	-7.14043	20.00000	Averaged	
370	Aroclor-1260(2)	2525287	2556231	0.001	1.22536	20.00000	Averaged	
370	Aroclor-1260(3)	4022219	4129066	0.001	2.65643	20.00000	Averaged	
370	Aroclor-1260(5)	998633	922555	0.001	-7.61819	20.00000	Averaged	
2	Tetrachloro-m-xylene	48039995	59357850	0.001	23.55923	20.00000	Averaged	<-
12	Decachlorobiphenyl	31391415	30986750	0.001	-1.28909	20.00000	Averaged	

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
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Data File: 7MA488.D
Report Date: 24-Jan-2019 14:17

Katahdin Analytical Services

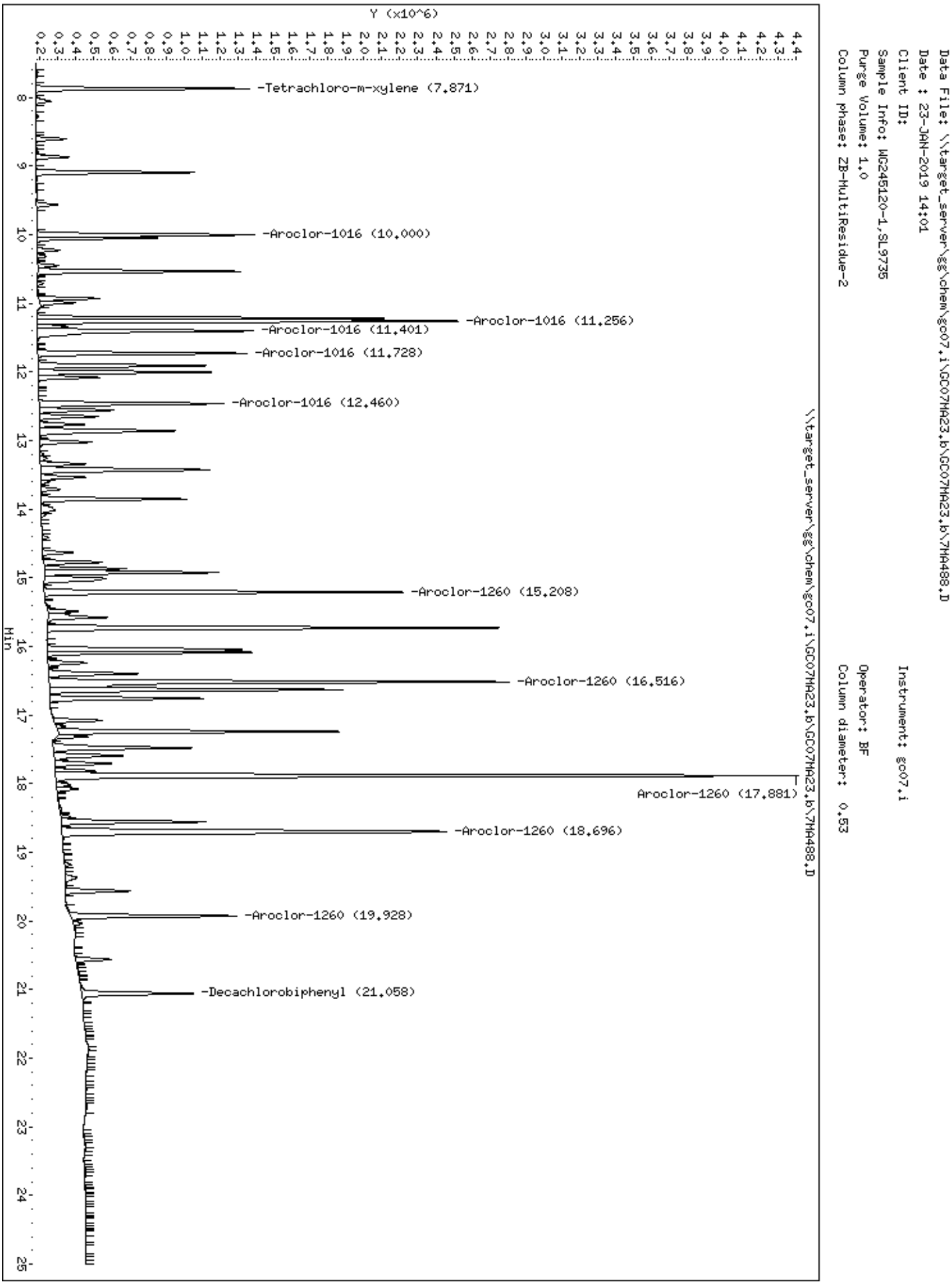
Data file : \\target_server\gg\chem\gc07.i\GC07MA23.b\GC07MA23.b\7MA488.D
Lab Smp Id: WG245120-1
Inj Date : 23-JAN-2019 14:01
Operator : BF   Inst ID: gc07.i
Smp Info : WG245120-1,SL9735
Misc Info : WG245120,WG245120,WG243328,SL9735-1
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07MA23.b\PCB133.m\PCB133.m
Meth Date : 24-Jan-2019 12:02 bflanders Quant Type: ESTD
Cal Date : 23-DEC-2018 17:10   Cal File: 7LL891.D
Als bottle: 66   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: AR1660.sub
Target Version: 4.12   Sample Matrix: WATER
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * Vt*(1/Vo)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
$ 2 Tetrachloro-m-xylene					CAS #: 877-09-8			
7.871	7.880	-0.009	1187157	0.02000	0.0247			
5 Aroclor-1016					CAS #: 12674-11-2			
9.999	10.008	-0.009	1206971	1.00000	1.14	80.00- 120.00	100.00	
11.256	11.267	-0.011	2340262	1.00000	1.14	158.77- 238.15	193.90	
11.401	11.408	-0.007	1199281	1.00000	1.11	296.98- 445.46	99.36	
11.727	11.737	-0.010	1162787	1.00000	1.10	114.78- 172.17	96.34	
12.459	12.467	-0.008	1032160	1.00000	1.08	112.32- 168.48	85.52	
Average of Peak Amounts =					1.11400			
9 Aroclor-1260					CAS #: 11096-82-5			
15.207	15.215	-0.008	1995038	1.00000	1.02	80.00- 120.00	100.00(M)	M5
16.516	16.523	-0.007	2556231	1.00000	1.01	94.69- 142.03	128.13	M5
17.881	17.888	-0.007	4129066	1.00000	1.03	89.28- 133.92	206.97	M5
18.696	18.702	-0.006	2140753	1.00000	0.928	72.48- 108.72	107.30	M5
19.927	19.935	-0.008	922555	1.00000	0.924	0.00- 0.00	46.24	M5
Average of Peak Amounts =					0.98240			
$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
21.057	21.065	-0.008	619735	0.02000	0.0197			

BF
2:52 pm, Jan 24, 2019


Data File: \\target_server\gg\chem\gc07.i\GC07MA23.b\GC07MA23.b\7MA488.D
Date : 23-JAN-2019 14:01
Client ID:
Sample Info: WG245120-1,SL9735
Purge Volume: 1.0
Column phase: ZB-MultiResidue-2
Instrument: gc07.i
Operator: BF
Column diameter: 0.53
Y (x10^6)
Min
-Tetrachloro-m-xylene (7.871)
-Aroclor-1016 (10.000)
-Aroclor-1016 (11.256)
-Aroclor-1016 (11.401)
-Aroclor-1016 (11.728)
-Aroclor-1016 (12.460)
-Aroclor-1260 (15.208)
-Aroclor-1260 (16.516)
Aroclor-1260 (17.881)
-Aroclor-1260 (18.696)
-Aroclor-1260 (19.928)
-Decachlorobiphenyl (21.058)
\\target_server\gg\chem\gc07.i\GC07MA23.b\GC07MA23.b\7MA488.D

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ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : New Bedford Harbor
Lab ID : WG245120-2
Lab File ID : 7MA504.D
Initial Calibration Date(s): 12/22/18 16:40 12/23/18 18:06

SDG: SL9735
Analytical Date: 01/23/19 22:54
Instrument ID: GC07
Column ID: A

	Compound	RRF/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type	
20	Aroclor-1016(2)	2488298	2983980	0.001	19.92051	20.00000	Averaged	
20	Aroclor-1016(5)	2881960	3531732	0.001	22.54617	20.00000	Averaged	<-
20	Aroclor-1016(4)	2921010	3453452	0.001	18.22800	20.00000	Averaged	
20	Aroclor-1016(1)	3267956	4105500	0.001	25.62900	20.00000	Averaged	<-
20	Aroclor-1016(3)	6507947	8023312	0.001	23.28483	20.00000	Averaged	<-
370	Aroclor-1260(3)	11915389	14565420	0.001	22.24041	20.00000	Averaged	<-
370	Aroclor-1260(5)	2966027	2627756	0.001	-11.40486	20.00000	Averaged	
370	Aroclor-1260(1)	6164557	6959020	0.001	12.88759	20.00000	Averaged	
370	Aroclor-1260(4)	7190993	7723280	0.001	7.40214	20.00000	Averaged	
370	Aroclor-1260(2)	8691284	10225820	0.001	17.65603	20.00000	Averaged	
3	Tetrachloro-m-xylene	149760133	180417400	0.001	20.47091	20.00000	Averaged	<-
12	Decachlorobiphenyl	99863463	107573200	0.001	7.72028	20.00000	Averaged	

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Data File: \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA504.D
Report Date: 24-Jan-2019 14:17

Katahdin Analytical Services

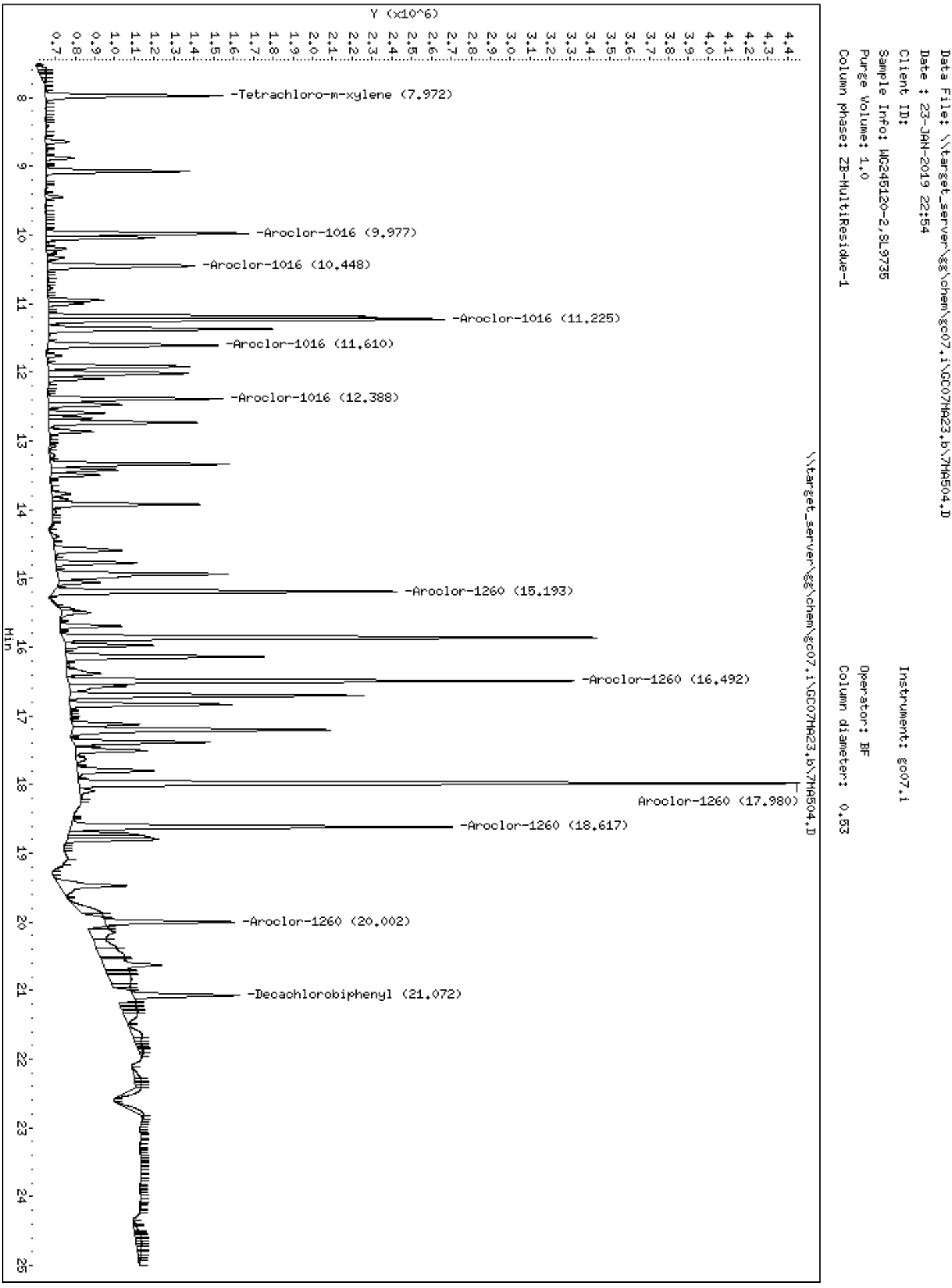
Data file : \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA504.D
Lab Smp Id: WG245120-2
Inj Date : 23-JAN-2019 22:54
Operator : BF Inst ID: gc07.i
Smp Info : WG245120-2,SL9735
Misc Info : WG245120,WG245120,WG243328,SL9735-1
Comment :
Method : \\target_server\gg\chem\gc07.i\GC07MA23.b\PCB133.m
Meth Date : 24-Jan-2019 12:00 bflanders Quant Type: ESTD
Cal Date : 23-DEC-2018 04:43 Cal File: 7LL864.D
Als bottle: 82 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1660.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * Vt*(1/Vo)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
$ 3 Tetrachloro-m-xylene					CAS #: 877-09-8			
7.971	7.971	0.000	902087	0.02000	0.00602			
6 Aroclor-1016					CAS #: 12674-11-2			
9.976	9.976	0.000	1026375	1.00000	0.314	80.00- 120.00	100.00	
10.448	10.448	0.000	745995	1.00000	0.300	158.77- 238.15	72.68	
11.224	11.224	0.000	2005828	1.00000	0.308	296.98- 445.46	195.43	
11.609	11.609	0.000	863363	1.00000	0.296	114.78- 172.16	84.12	
12.388	12.388	0.000	882933	1.00000	0.306	112.32- 168.48	86.02	
Average of Peak Amounts =					0.30480			
9 Aroclor-1260					CAS #: 11096-82-5			
15.193	15.193	0.000	1739755	1.00000	0.282	80.00- 120.00	100.00(M)	M5
16.491	16.491	0.000	2556455	1.00000	0.294	94.69- 142.03	146.94	M5
17.979	17.979	0.000	3641355	1.00000	0.306	89.28- 133.92	209.30	M5
18.616	18.616	0.000	1930820	1.00000	0.268	72.48- 108.72	110.98	M5
20.001	20.001	0.000	656939	1.00000	0.221	0.00- 0.00	37.76	M5
Average of Peak Amounts =					0.27420			
$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
21.071	21.071	0.000	537866	0.02000	0.00539		(M)	M5

BF
2:52 pm, Jan 24, 2019


Data File: \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA504.D
Date : 23-JAN-2019 22:54
Client ID:
Sample Info: WG245120-2,SL9735
Purge Volume: 1.0
Column phase: ZB-MultiResidue-1
Instrument: gc07.i
Operator: BF
Column diameter: 0.53
Y (x10^6)
Min
-Tetrachloro-m-xylene (7.972)
-Aroclor-1016 (9.977)
-Aroclor-1016 (10.448)
-Aroclor-1016 (11.225)
-Aroclor-1016 (11.610)
-Aroclor-1016 (12.388)
-Aroclor-1260 (15.193)
-Aroclor-1260 (16.492)
Aroclor-1260 (17.980)
-Aroclor-1260 (18.617)
-Aroclor-1260 (20.002)
-Decachlorobiphenyl (21.072)
\\target_server\gg\chem\gc07.i\GC07MA23.b\7MA504.D

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : New Bedford Harbor
Lab ID : WG245120-2
Lab File ID : 7MA504.D
Initial Calibration Date(s): 12/22/18 16:40 12/23/18 18:06

SDG: SL9735
Analytical Date: 01/23/19 22:54
Instrument ID: GC07
Column ID: B

	Compound	RRF/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type	
20	Aroclor-1016(1)	1054353	1273020	0.001	20.73940	20.00000	Averaged	<-
20	Aroclor-1016(4)	1058638	1219552	0.001	15.20004	20.00000	Averaged	
20	Aroclor-1016(3)	1079194	1268876	0.001	17.57631	20.00000	Averaged	
20	Aroclor-1016(2)	2050576	2416892	0.001	17.86406	20.00000	Averaged	
20	Aroclor-1016(5)	951380	1077284	0.001	13.23385	20.00000	Averaged	
370	Aroclor-1260(1)	1960683	2109472	0.001	7.58863	20.00000	Averaged	
370	Aroclor-1260(4)	2305366	2332420	0.001	1.17352	20.00000	Averaged	
370	Aroclor-1260(2)	2525287	2708008	0.001	7.23565	20.00000	Averaged	
370	Aroclor-1260(3)	4022219	4239588	0.001	5.40422	20.00000	Averaged	
370	Aroclor-1260(5)	998633	1057072	0.001	5.85192	20.00000	Averaged	
2	Tetrachloro-m-xylene	48039995	55415600	0.001	15.35305	20.00000	Averaged	
12	Decachlorobiphenyl	31391415	33305000	0.001	6.09589	20.00000	Averaged	

*** = Compound out of QC criteria**

Data File: 7MA504.D
Report Date: 24-Jan-2019 14:17

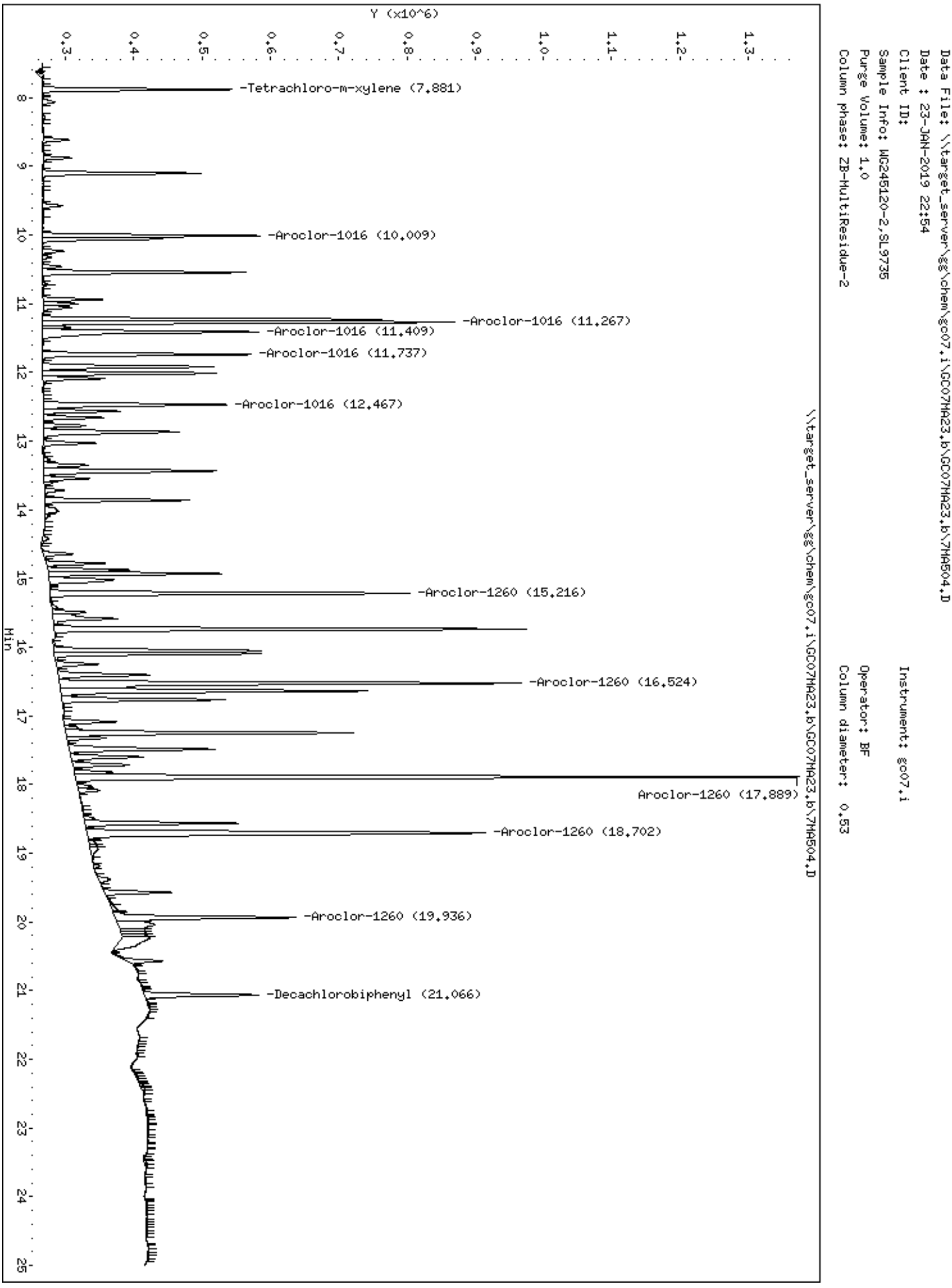
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07MA23.b\GC07MA23.b\7MA504.D
Lab Smp Id: WG245120-2
Inj Date : 23-JAN-2019 22:54
Operator : BF   Inst ID: gc07.i
Smp Info : WG245120-2,SL9735
Misc Info : WG245120,WG245120,WG243328,SL9735-1
Comment   :
Method   : \\target_server\gg\chem\gc07.i\GC07MA23.b\PCB133.m\PCB133.m
Meth Date : 24-Jan-2019 12:02 bflanders Quant Type: ESTD
Cal Date : 23-DEC-2018 17:10   Cal File: 7LL891.D
Als bottle: 82   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: AR1660.sub
Target Version: 4.12   Sample Matrix: WATER
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * Vt*(1/Vo)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
$ 2 Tetrachloro-m-xylene					CAS #: 877-09-8			
7.880	7.880	0.000	277078	0.02000	0.00577			
5 Aroclor-1016					CAS #: 12674-11-2			
10.008	10.008	0.000	318255	1.00000	0.302	80.00- 120.00	100.00	
11.267	11.267	0.000	604223	1.00000	0.295	158.77- 238.15	189.85	
11.408	11.408	0.000	317219	1.00000	0.294	296.98- 445.46	99.67	
11.737	11.737	0.000	304888	1.00000	0.288	114.78- 172.17	95.80	
12.467	12.467	0.000	269321	1.00000	0.283	112.32- 168.48	84.62	
Average of Peak Amounts =					0.29240			
9 Aroclor-1260					CAS #: 11096-82-5			
15.215	15.215	0.000	527368	1.00000	0.269	80.00- 120.00	100.00	
16.523	16.523	0.000	677002	1.00000	0.268	94.69- 142.03	128.37	
17.888	17.888	0.000	1059897	1.00000	0.264	89.28- 133.92	200.98	
18.702	18.702	0.000	583105	1.00000	0.253	72.48- 108.72	110.57	
19.935	19.935	0.000	264268	1.00000	0.265	0.00- 0.00	50.11	
Average of Peak Amounts =					0.26380			
$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
21.065	21.065	0.000	166525	0.02000	0.00530			


Data File: \\target_server\gg\chem\gc07.i\GC07MA23.b\GC07MA23.b\7MA504.D
Date : 23-JAN-2019 22:54
Client ID:
Sample Info: WG245120-2,SL9735
Purge Volume: 1.0
Column phase: ZB-MultiResidue-2
Instrument: gc07.i
Operator: BF
Column diameter: 0.53
\\target_server\gg\chem\gc07.i\GC07MA23.b\GC07MA23.b\7MA504.D
Y (x10^6)
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.1
1.2
1.3
Min
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
-Tetrachloro-m-xylene (7.881)
-Aroclor-1016 (10.009)
-Aroclor-1016 (11.267)
-Aroclor-1016 (11.409)
-Aroclor-1016 (11.737)
-Aroclor-1016 (12.467)
-Aroclor-1260 (15.216)
-Aroclor-1260 (16.524)
Aroclor-1260 (17.889)
-Aroclor-1260 (18.702)
-Aroclor-1260 (19.936)
-Decachlorobiphenyl (21.066)

Raw QC Data Section

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG245126-1
Client ID: Method Blank Sample
Project:
SDG: SL9735
Lab File ID: 7MA491.D

Sample Date:
Received Date:
Extract Date: 23-JAN-19
Extracted By: BP/JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG245126

Analysis Date: 23-JAN-19
Analyst: BF
Analysis Method: SW846 8082A
Matrix: AQ
% Solids: NA
Report Date: 24-JAN-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Aroclor-1016	U	0.050	ug/L	1	.5	0.050	0.015
Aroclor-1221	U	0.050	ug/L	1	.5	0.050	0.020
Aroclor-1232	U	0.050	ug/L	1	.5	0.050	0.0089
Aroclor-1242	U	0.050	ug/L	1	.5	0.050	0.018
Aroclor-1248	U	0.050	ug/L	1	.5	0.050	0.020
Aroclor-1254	U	0.050	ug/L	1	.5	0.050	0.0082
Aroclor-1260	U	0.050	ug/L	1	.5	0.050	0.017
Total PCBs	U	0.35	ug/L	1	3.5	0.35	0.0082
Tetrachloro-M-Xylene	*	121.	%				
Decachlorobiphenyl		84.4	%				

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://www.katahdinlab.com

Data File: \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA491.D
Report Date: 24-Jan-2019 14:17

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA491.D
Lab Smp Id: WG245126-1 Client Smp ID: WG245126-Blank
Inj Date : 23-JAN-2019 16:52
Operator : BF Inst ID: gc07.i
Smp Info : WG245126-1,SL9735
Misc Info : WG245120,WG245126,WG243328-1,SL9735-1
Comment :
Method : \\target_server\gg\chem\gc07.i\GC07MA23.b\PCB133.m
Meth Date : 24-Jan-2019 12:00 bflanders Quant Type: ESTD
Cal Date : 23-DEC-2018 04:43 Cal File: 7LL864.D
Als bottle: 69 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: TSW8082.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * Vt*(1/Vo)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

				CONCENTRATIONS ON-COL (ug/mL)	FINAL (ug/L)	TARGET RANGE	RATIO	REVIEW CODE
RT	EXP RT	DLT RT	RESPONSE					
$ 3 Tetrachloro-m-xylene					CAS #: 877-09-8			
7.966	7.971	-0.005	17071013	0.11399	0.114		(R)	
$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
21.063	21.071	-0.008	8425177	0.08437	0.0844			

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: \\target_server\gc\chem\gc07.i\GC07MA23.b\7MA491.D
Date : 23-JAN-2019 16:52
Client ID: MC245126-Blank
Sample Info: MC245126-1,SL9735
Purge Volume: 1.0
Column phase: ZB-MultiResidue-1
Instrument: gc07.i
Operator: BF
Column diameter: 0.53
\\target_server\gc\chem\gc07.i\GC07MA23.b\7MA491.D
Y (x10^7)
Min
Tetrachloro-m-xylene (7.967)
Aroclor-1248 (11.593)
Aroclor-1248 (12.158)
Aroclor-1248 (12.663)
Aroclor-1254 (13.335)
Aroclor-1248 (13.675)
Aroclor-1254 (13.982)
Aroclor-1254 (14.753)
Aroclor-1260 (15.185)
Aroclor-1254 (15.480)
Aroclor-1254 (16.483)+
Aroclor-1260 (17.972)
Aroclor-1260 (18.607)
Aroclor-1260 (19.985)
Decachlorobiphenyl (21.063)

Data File: 7MA491.D
Report Date: 24-Jan-2019 14:17

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07MA23.b\GC07MA23.b\7MA491.D
Lab Smp Id: WG245126-1 Client Smp ID: WG245126-Blank
Inj Date : 23-JAN-2019 16:52
Operator : BF Inst ID: gc07.i
Smp Info : WG245126-1,SL9735
Misc Info : WG245120,WG245126,WG243328-1,SL9735-1
Comment :
Method : \\target_server\gg\chem\gc07.i\GC07MA23.b\PCB133.m\PCB133.m
Meth Date : 24-Jan-2019 12:02 bflanders Quant Type: ESTD
Cal Date : 23-DEC-2018 17:10 Cal File: 7LL891.D
Als bottle: 69 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: TSW8082.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: INSPIRON1

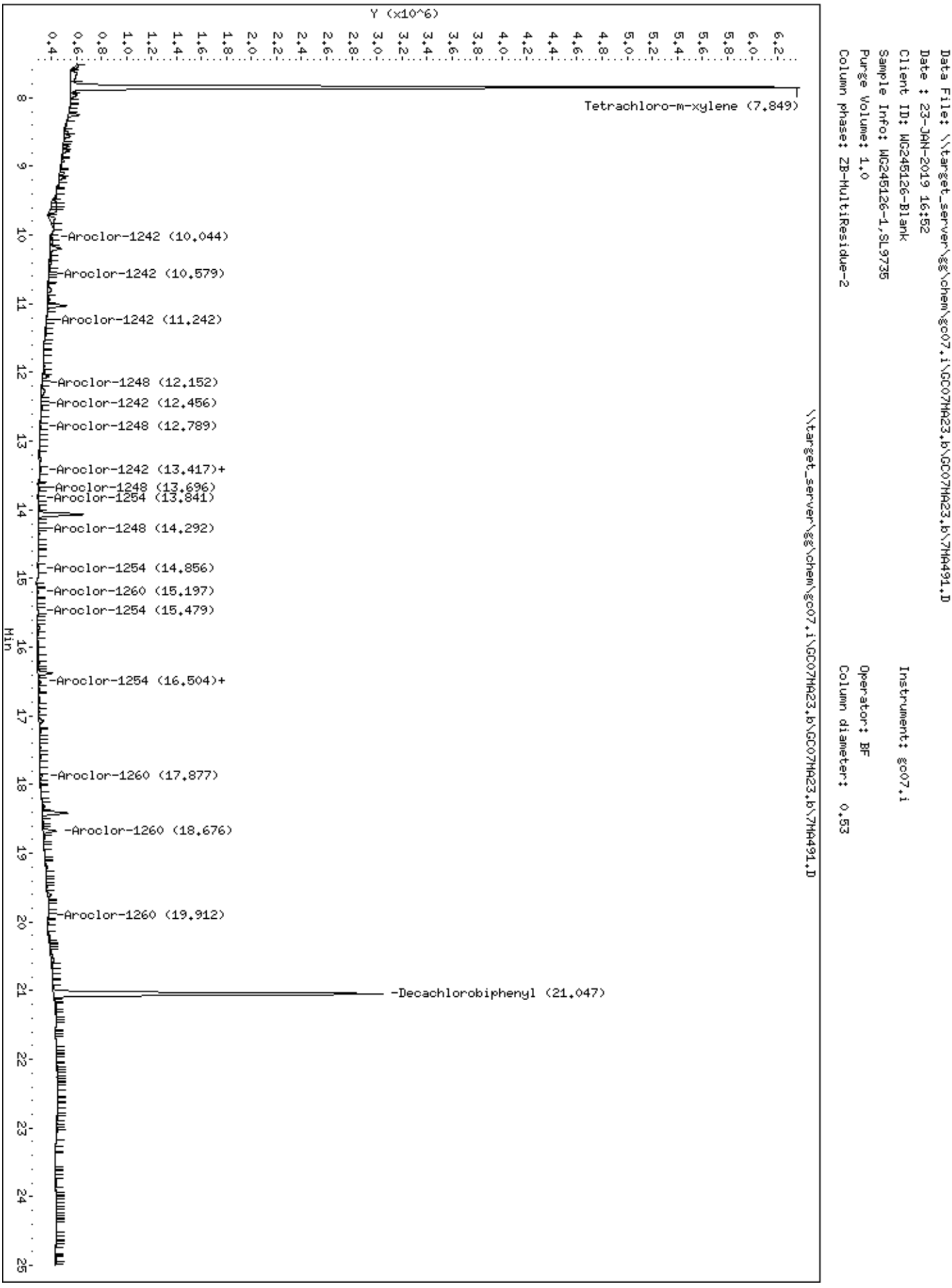
Concentration Formula: Amt * DF * Vt*(1/Vo)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

				CONCENTRATIONS ON-COL	FINAL			
RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/L)	TARGET RANGE	RATIO	REVIEW CODE
$ 2 Tetrachloro-m-xylene					CAS #: 877-09-8			
7.848	7.880	-0.032	5821875	0.12119	0.121			(R)
$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
21.047	21.065	-0.018	2630696	0.08380	0.0838			

QC Flag Legend

R - Spike/Surrogate failed recovery limits.


Data File: \\target_server\gg\chem\gc07.i\GC07MA23.b\GC07MA23.b\7MA491.D
Date : 23-JAN-2019 16:52
Client ID: WG245126-Blank
Sample Info: WG245126-1,SL9735
Purge Volume: 1.0
Column phase: ZB-MultiResidue-2
Instrument: gc07.i
Operator: BF
Column diameter: 0.53
\\target_server\gg\chem\gc07.i\GC07MA23.b\GC07MA23.b\7MA491.D
Y (x10^6)
Min
Tetrachloro-m-xylene (7.849)
Aroclor-1242 (10.044)
Aroclor-1242 (10.579)
Aroclor-1242 (11.242)
Aroclor-1248 (12.152)
Aroclor-1242 (12.456)
Aroclor-1248 (12.789)
Aroclor-1242 (13.417)+
Aroclor-1248 (13.696)
Aroclor-1254 (13.841)
Aroclor-1248 (14.292)
Aroclor-1254 (14.856)
Aroclor-1260 (15.197)
Aroclor-1254 (15.479)
Aroclor-1254 (16.504)+
Aroclor-1260 (17.877)
Aroclor-1260 (18.676)
Aroclor-1260 (19.912)
Decachlorobiphenyl (21.047)

Katahdin
ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG245126-3
Client ID: LCS
Project:
SDG: SL9735
LCS File ID: 7MA492.D

Sample Date:
Received Date:
Extract Date: 23-JAN-19
Extracted By: BP/JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG245126

Analysis Date: 23-JAN-19
Analyst: BF
Analysis Method: SW846 8082A
Matrix: AQ
% Solids: NA
Report Date: 24-JAN-19

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Aroclor-1016	117.	0.500	0.583	ug/L	60-122
Aroclor-1260	* 195.	0.500	0.975	ug/L	53-122
Tetrachloro-M-Xylene	110.				62-111
Decachlorobiphenyl	63.5				44-135

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Data File: \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA492.D
Report Date: 24-Jan-2019 14:17

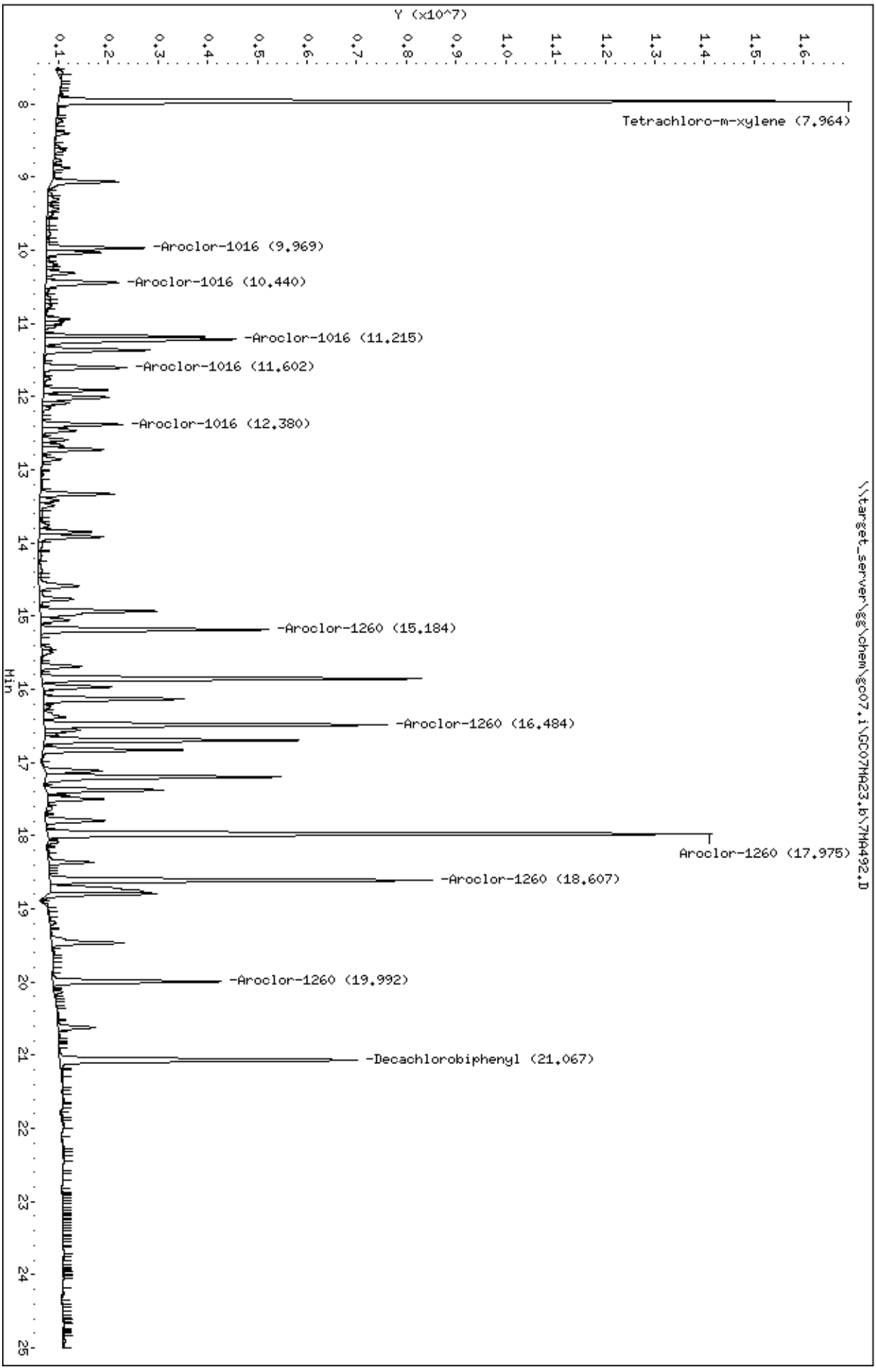
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA492.D
Lab Smp Id: WG245126-3 Client Smp ID: WG245126-LCS
Inj Date : 23-JAN-2019 17:20
Operator : BF Inst ID: gc07.i
Smp Info : WG245126-3,SL9735
Misc Info : WG245120,WG245126,WG243328-1,SL9735-1
Comment :
Method : \\target_server\gg\chem\gc07.i\GC07MA23.b\PCB133.m
Meth Date : 24-Jan-2019 12:00 bflanders Quant Type: ESTD
Cal Date : 23-DEC-2018 04:43 Cal File: 7LL864.D
Als bottle: 70 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: LCS.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * Vt*(1/Vo)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

				CONCENTRATIONS ON-COL	FINAL			
RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/L)	TARGET RANGE	RATIO	REVIEW CODE
$ 3 Tetrachloro-m-xylene					CAS #: 877-09-8			
7.963	7.971	-0.008	15959128	0.10656	0.106			
6 Aroclor-1016					CAS #: 12674-11-2			
9.968	9.976	-0.008	1975328	0.60445	0.604	80.00- 120.00	100.00	
10.440	10.448	-0.008	1471485	0.59136	0.591	158.77- 238.15	74.49	
11.215	11.224	-0.009	3849231	0.59147	0.591	296.98- 445.46	194.87	
11.601	11.609	-0.008	1663109	0.56936	0.569	114.78- 172.16	84.19	
12.380	12.388	-0.008	1606134	0.55731	0.557	112.32- 168.48	81.31	
Average of Peak Concentrations =					0.583			
9 Aroclor-1260					CAS #: 11096-82-5			
15.183	15.193	-0.010	4575880	0.74229	0.742	80.00- 120.00	100.00(R)	
16.483	16.491	-0.008	6921488	0.79637	0.796	94.69- 142.03	151.26	
17.975	17.979	-0.004	13386797	1.12349	1.12	89.28- 133.92	292.55	
18.606	18.616	-0.010	7703974	1.07134	1.07	72.48- 108.72	168.36	
19.991	20.001	-0.010	3381871	1.14020	1.14	0.00- 0.00	73.91	
Average of Peak Concentrations =					0.975			
$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
21.066	21.071	-0.005	5980953	0.05989	0.0599			


Data File: \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA492.D
Date : 23-JAN-2019 17:20
Client ID: WG245126-LCS
Sample Info: WG245126-3,SL9735
Purge Volume: 1.0
Column phase: ZB-MultiResidue-1
Instrument: gc07.i
Operator: BF
Column diameter: 0.53
\\target_server\gg\chem\gc07.i\GC07MA23.b\7MA492.D
Y (x10^7)
Min
Tetrachloro-m-xylene (7.964)
-Aroclor-1016 (9.969)
-Aroclor-1016 (10.440)
-Aroclor-1016 (11.215)
-Aroclor-1016 (11.602)
-Aroclor-1016 (12.380)
-Aroclor-1260 (15.184)
-Aroclor-1260 (16.484)
Aroclor-1260 (17.975)
-Aroclor-1260 (18.607)
-Aroclor-1260 (19.992)
-Decachlorobiphenyl (21.067)

Data File: 7MA492.D
Report Date: 24-Jan-2019 14:17

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07MA23.b\GC07MA23.b\7MA492.D
Lab Smp Id: WG245126-3 Client Smp ID: WG245126-LCS
Inj Date : 23-JAN-2019 17:20
Operator : BF Inst ID: gc07.i
Smp Info : WG245126-3,SL9735
Misc Info : WG245120,WG245126,WG243328-1,SL9735-1
Comment :
Method : \\target_server\gg\chem\gc07.i\GC07MA23.b\PCB133.m\PCB133.m
Meth Date : 24-Jan-2019 12:02 bflanders Quant Type: ESTD
Cal Date : 23-DEC-2018 17:10 Cal File: 7LL891.D
Als bottle: 70 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: LCS.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * Vt*(1/Vo)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/mL)	CONCENTRATIONS FINAL (ug/L)	TARGET RANGE	RATIO	REVIEW CODE
$ 2 Tetrachloro-m-xylene					CAS #: 877-09-8			
7.870	7.880	-0.010	5301888	0.11036	0.110			
5 Aroclor-1016					CAS #: 12674-11-2			
9.999	10.008	-0.009	601316	0.57032	0.570	80.00- 120.00	100.00	
11.257	11.267	-0.010	1142059	0.55695	0.557	158.77- 238.15	189.93	
11.399	11.408	-0.009	600773	0.55669	0.557	296.98- 445.46	99.91	
11.727	11.737	-0.010	566120	0.53476	0.535	114.78- 172.17	94.15	
12.459	12.467	-0.008	499078	0.52458	0.524	112.32- 168.48	83.00	
Average of Peak Concentrations =					0.549			
9 Aroclor-1260					CAS #: 11096-82-5			
15.207	15.215	-0.008	1381422	0.70456	0.704	80.00- 120.00	100.00(R)	
16.515	16.523	-0.008	1844132	0.73027	0.730	94.69- 142.03	133.50	
17.884	17.888	-0.004	3417950	0.84977	0.850	89.28- 133.92	247.42	
18.697	18.702	-0.005	2248592	0.97537	0.975	72.48- 108.72	162.77	
19.927	19.935	-0.008	1005736	1.00711	1.01	0.00- 0.00	72.80	
Average of Peak Concentrations =					0.853			
$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
21.057	21.065	-0.008	1994564	0.06354	0.0635			

Data File: \\target_server\gc\chem\goo7.i\GC07MA23.b\GC07MA23.b\7MA492.D
Date : 23-JAN-2019 17:20
Client ID: MC245126-LCS
Sample Info: MC245126-3,SL9735
Purge Volume: 1.0
Column phase: ZB-MultiResidue-2
Instrument: goo7.i
Operator: BF
Column diameter: 0.53
\\target_server\gc\chem\goo7.i\GC07MA23.b\GC07MA23.b\7MA492.D
Y (x10^6)
Min
Tetrachloro-m-xylene (7.871)
-Aroclor-1016 (9.999)
-Aroclor-1016 (11.258)
-Aroclor-1016 (11.399)
-Aroclor-1016 (11.728)
-Aroclor-1016 (12.459)
-Aroclor-1260 (15.208)
-Aroclor-1260 (16.516)
-Aroclor-1260 (17.884)
-Aroclor-1260 (18.698)
-Aroclor-1260 (19.928)
-Decachlorobiphenyl (21.058)

Katahdin
ANALYTICAL SERVICES

MS/MSD Recovery Report

MS ID: WG245126-4
MSD ID: WG245126-5
Sample ID: SL9735-7
Client ID: MW07A-100318
Project:
SDG: SL9735
MS File ID: 7MA494.D

Received Date:
Extract Date: 23-JAN-19
Extracted By: BP/JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG245126
Report Date: 24-JAN-19
MSD File ID: 7MA495.D

Analysis Date: 23-JAN-19
Analyst: BF
Analysis Method: SW846 8082A
Matrix: AQ
% Solids: NA

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Aroclor-1016	0.476	0.476	ug/L	U0.048	0.60	0.58	126.*	122.*	4	30	60-122
Aroclor-1260	0.476	0.476	ug/L	J0.032	0.54	0.55	106.	109.	3	30	53-122
Tetrachloro-M-Xylene							113.*	107.			62-111
Decachlorobiphenyl							88.0	87.6			44-135

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://www.katahdinlab.com

Data File: \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA494.D
Report Date: 24-Jan-2019 14:50

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA494.D
Lab Smp Id: WG245126-4 Client Smp ID: MW07A-100318MS
Inj Date : 23-JAN-2019 18:16
Operator : BF Inst ID: gc07.i
Smp Info : WG245126-4,SL9735
Misc Info : WG245120,WG245126,WG243328-1,SL9735-7
Comment :
Method : \\target_server\gg\chem\gc07.i\GC07MA23.b\PCB133.m
Meth Date : 24-Jan-2019 12:00 bflanders Quant Type: ESTD
Cal Date : 23-DEC-2018 04:43 Cal File: 7LL864.D
Als bottle: 72 QC Sample: MS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: LCS.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * Vt*(1/Vo)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.050	Sample Volume (L)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/mL)	CONCENTRATIONS FINAL (ug/L)	TARGET RANGE	RATIO	REVIEW CODE
$ 3 Tetrachloro-m-xylene					CAS #: 877-09-8			
7.972	7.971	0.001	16358267	0.10923	0.104			
6 Aroclor-1016					CAS #: 12674-11-2			
9.976	9.976	0.000	2350632	0.71930	0.685	80.00- 120.00	100.00(R)	
10.449	10.448	0.001	1718466	0.69062	0.658	158.77- 238.15	73.11	
11.239	11.224	0.015	4857810	0.74644	0.711	296.98- 445.46	206.66	
11.612	11.609	0.003	1006198	0.34447	0.328	114.78- 172.16	42.81	
12.386	12.388	-0.002	1872964	0.64989	0.619	112.32- 168.48	79.68	
		Average of Peak Concentrations =			0.600			
9 Aroclor-1260					CAS #: 11096-82-5			
15.189	15.193	-0.004	3322171	0.53891	0.513	80.00- 120.00	100.00	
16.489	16.491	-0.002	4406026	0.50695	0.483	94.69- 142.03	132.62	
17.977	17.979	-0.002	7356541	0.61740	0.588	89.28- 133.92	221.44	
18.612	18.616	-0.004	4095243	0.56950	0.542	72.48- 108.72	123.27	
19.994	20.001	-0.007	1703176	0.57423	0.547	0.00- 0.00	51.27	
		Average of Peak Concentrations =			0.535			
$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
21.067	21.071	-0.004	8164945	0.08176	0.0779			

Data File: \\target_server\gc\chem\goo7.i\GC07MA23.b\7MA494.D
Date : 23-JAN-2019 18:16
Client ID: MW07A-100318MS
Sample Info: WC24512G-4,SL9735
Purge Volume: 1.1
Column phase: ZB-MultiResidue-1
Instrument: goo7.i
Operator: BF
Column diameter: 0.53
\\target_server\gc\chem\goo7.i\GC07MA23.b\7MA494.D
Min
Y (x10^7)
Tetrachloro-m-xylene (7.973)
-Aroclor-1016 (9.976)
-Aroclor-1016 (10.450)
-Aroclor-1016 (11.240)
-Aroclor-1016 (11.613)
-Aroclor-1016 (12.386)
-Aroclor-1260 (15.190)
-Aroclor-1260 (16.490)
-Aroclor-1260 (17.978)
-Aroclor-1260 (18.643)
-Aroclor-1260 (19.995)
-Decachlorobiphenyl (21.068)

Data File: 7MA494.D
Report Date: 24-Jan-2019 14:50

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07MA23.b\GC07MA23.b\7MA494.D
Lab Smp Id: WG245126-4 Client Smp ID: MW07A-100318MS
Inj Date : 23-JAN-2019 18:16
Operator : BF Inst ID: gc07.i
Smp Info : WG245126-4,SL9735
Misc Info : WG245120,WG245126,WG243328-1,SL9735-7
Comment :
Method : \\target_server\gg\chem\gc07.i\GC07MA23.b\PCB133.m\PCB133.m
Meth Date : 24-Jan-2019 12:02 bflanders Quant Type: ESTD
Cal Date : 23-DEC-2018 17:10 Cal File: 7LL891.D
Als bottle: 72 QC Sample: MS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: LCS.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * Vt*(1/Vo)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.050	Sample Volume (L)
Cpnd Variable		Local Compound Variable

				CONCENTRATIONS ON-COL	FINAL			
RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/L)	TARGET RANGE	RATIO	REVIEW CODE
$ 2 Tetrachloro-m-xylene					CAS #: 877-09-8			
7.881	7.880	0.001	5454633	0.11354	0.108		(R)	
5 Aroclor-1016					CAS #: 12674-11-2			
10.008	10.008	0.000	651690	0.61809	0.589	80.00- 120.00	100.00	
11.265	11.267	-0.002	1284531	0.62642	0.596	158.77- 238.15	197.11	
11.410	11.408	0.002	401317	0.37187	0.354	296.98- 445.46	61.58	
11.735	11.737	-0.002	626152	0.59147	0.563	114.78- 172.17	96.08	
12.466	12.467	-0.001	353915	0.37200	0.354	112.32- 168.48	54.31	
Average of Peak Concentrations =					0.491			
9 Aroclor-1260					CAS #: 11096-82-5			
15.215	15.215	0.000	1018888	0.51966	0.495	80.00- 120.00	100.00	
16.521	16.523	-0.002	1178457	0.46666	0.444	94.69- 142.03	115.66	
17.890	17.888	0.002	2019724	0.50214	0.478	89.28- 133.92	198.23	
18.701	18.702	-0.001	1270239	0.55099	0.525	72.48- 108.72	124.67	
19.930	19.935	-0.005	521912	0.52263	0.498	0.00- 0.00	51.22	
Average of Peak Concentrations =					0.488			
$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
21.061	21.065	-0.004	2761592	0.08797	0.0838			

Data File: \\target_server\gc\chem\gc07.i\GC07MA23.b\GC07MA23.b\7MA494.D
Date : 23-JAN-2019 18:16
Client ID: MW07A-100318MS
Sample Info: WG245126-4,SL9735
Purge Volume: 1.1
Column phase: ZB-MultiResidue-2

Instrument: gc07.i
Operator: BF
Column diameter: 0.53

Data File: \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA495.D
Report Date: 24-Jan-2019 14:50

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07MA23.b\7MA495.D
Lab Smp Id: WG245126-5 Client Smp ID: MW07A-100318MSD
Inj Date : 23-JAN-2019 18:44
Operator : BF Inst ID: gc07.i
Smp Info : WG245126-5,SL9735
Misc Info : WG245120,WG245126,WG243328-1,SL9735-7
Comment :
Method : \\target_server\gg\chem\gc07.i\GC07MA23.b\PCB133.m
Meth Date : 24-Jan-2019 12:00 bflanders Quant Type: ESTD
Cal Date : 23-DEC-2018 04:43 Cal File: 7LL864.D
Als bottle: 73 QC Sample: MSD
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: LCS.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * Vt*(1/Vo)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.050	Sample Volume (L)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/mL)	FINAL (ug/L)	TARGET RANGE	RATIO	REVIEW CODE
$ 3 Tetrachloro-m-xylene					CAS #: 877-09-8			
7.973	7.971	0.002	15542366	0.10378	0.0988			
6 Aroclor-1016					CAS #: 12674-11-2			
9.975	9.976	-0.001	2374303	0.72654	0.692	80.00- 120.00	100.00	
10.446	10.448	-0.002	1602073	0.64384	0.613	158.77- 238.15	67.48	
11.238	11.224	0.014	4942339	0.75943	0.723	296.98- 445.46	208.16	
11.611	11.609	0.002	843928	0.28892	0.275	114.78- 172.16	35.54	
12.381	12.388	-0.007	1792985	0.62214	0.592	112.32- 168.48	75.52	
Average of Peak Concentrations =					0.579			
9 Aroclor-1260					CAS #: 11096-82-5			
15.186	15.193	-0.007	3409352	0.55306	0.527	80.00- 120.00	100.00	
16.486	16.491	-0.005	4429112	0.50960	0.485	94.69- 142.03	129.91	
17.975	17.979	-0.004	7569760	0.63529	0.605	89.28- 133.92	222.03	
18.611	18.616	-0.005	4121708	0.57318	0.546	72.48- 108.72	120.89	
19.993	20.001	-0.008	1837538	0.61953	0.590	0.00- 0.00	53.90	
Average of Peak Concentrations =					0.551			
$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
21.066	21.071	-0.005	8294853	0.08306	0.0791			

Data File: \\target_server\gc\chem\goo7.i\GC07MA23.b\7MA495.D
Date : 23-JAN-2019 18:44
Client ID: MW07A-100318MSD
Sample Info: WC245126-5,SL9735
Purge Volume: 1.1
Column phase: ZB-MultiResidue-1

Instrument: goo7.i
Operator: BF
Column diameter: 0.53

\\target_server\gc\chem\goo7.i\GC07MA23.b\7MA495.D

Y (x10^7)

Min

Tetrachloro-m-xylene (7.973)
-Aroclor-1016 (9.975)
-Aroclor-1016 (10.447)
-Aroclor-1016 (11.238)
-Aroclor-1016 (11.612)
-Aroclor-1016 (12.382)
-Aroclor-1260 (15.187)
-Aroclor-1260 (16.487)
-Aroclor-1260 (17.975)
-Aroclor-1260 (18.642)
-Aroclor-1260 (19.993)
-Decachlorobiphenyl (21.067)

Data File: 7MA495.D
Report Date: 24-Jan-2019 14:50

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07MA23.b\GC07MA23.b\7MA495.D
Lab Smp Id: WG245126-5 Client Smp ID: MW07A-100318MSD
Inj Date : 23-JAN-2019 18:44
Operator : BF Inst ID: gc07.i
Smp Info : WG245126-5,SL9735
Misc Info : WG245120,WG245126,WG243328-1,SL9735-7
Comment :
Method : \\target_server\gg\chem\gc07.i\GC07MA23.b\PCB133.m\PCB133.m
Meth Date : 24-Jan-2019 12:02 bflanders Quant Type: ESTD
Cal Date : 23-DEC-2018 17:10 Cal File: 7LL891.D
Als bottle: 73 QC Sample: MSD
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: LCS.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: INSPIRON1

Concentration Formula: Amt * DF * Vt*(1/Vo)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.050	Sample Volume (L)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/mL)	CONCENTRATIONS FINAL (ug/L)	TARGET RANGE	RATIO	REVIEW CODE
$ 2 Tetrachloro-m-xylene					CAS #: 877-09-8			
7.882	7.880	0.002	5151736	0.10724	0.102			
5 Aroclor-1016					CAS #: 12674-11-2			
10.005	10.008	-0.003	610007	0.57856	0.551	80.00- 120.00	100.00	
11.262	11.267	-0.005	1197771	0.58411	0.556	158.77- 238.15	196.35	
11.407	11.408	-0.001	347633	0.32212	0.307	296.98- 445.46	56.99	
11.734	11.737	-0.003	592924	0.56008	0.533	114.78- 172.17	97.20	
12.464	12.467	-0.003	306357	0.32201	0.307	112.32- 168.48	50.22	
Average of Peak Concentrations =					0.451			
9 Aroclor-1260					CAS #: 11096-82-5			
15.210	15.215	-0.005	985438	0.50260	0.479	80.00- 120.00	100.00(M)	M5
16.519	16.523	-0.004	1161818	0.46007	0.438	94.69- 142.03	117.90	M5
17.885	17.888	-0.003	2032996	0.50544	0.481	89.28- 133.92	206.30	M5
18.699	18.702	-0.003	1254471	0.54415	0.518	72.48- 108.72	127.30	M5
19.927	19.935	-0.008	553714	0.55447	0.528	0.00- 0.00	56.19	M5
Average of Peak Concentrations =					0.489			
$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
21.059	21.065	-0.006	2749401	0.08758	0.0834			

BF
3:07 pm, Jan 24, 2019

Data File: \\target_server\gc\chem\goo7.i\GC07MA23.b\GC07MA23.b\7MA495.D
Date : 23-JAN-2019 18:44
Client ID: MW07A-100318MSD
Sample Info: WC245126-5,SL9735
Purge Volume: 1.1
Column phase: ZB-MultiResidue-2

Instrument: goo7.i
Operator: BF
Column diameter: 0.53

Logbooks and Supporting Documents

SEP: PCB DOD

KATAHDIN ANALYTICAL SERVICES, LLC.
ORGANIC EXTRACTIONS LOG - AQUEOUS PESTICIDE/PCB

Extraction Method: (check one)	SW846 3510 (SEP) ✓		SW846 3520 (CLLE)	SW846 3535 (SPE)
Analytical Method:(check one)	SW846 8081	SW846 8082 ✓	EPA 608 Other:	
Surrogate ID: GC1953	Spike ID: GC1926		Spike ID: GC1948 (TCX)	GC1949 (Chlor)
Methylene Chloride Lot #: DV426 45	Hexane Lot #: 185876		Acetone Lot #: —	—
KI Starch Paper ID: 07182018	pH Paper Lot # HC857466		Sample pH between 5 and 9? ✓	Note samples requiring pH adjustment in comments section.
$NaSO_4$ Lot # RE0344	Filter Paper Lot #: 168197 60		Boiling Stones ID: 102614	H_2SO_4 or NaOH Lot #: —
Nitrogen Bath Temperature: 36° C	Vial Lot #: 18112968		—	—
Prep Start Time: 10:00	Prep End Time: 17:00		CLLE Start Time: —	CLLE End Date & Time: —

Date Extracted	Ext. Init.	Sample ID	Initial Vol. (mL)	Surr. Vol.	Spike Vol.	Fraction Pest	Fraction PCB	Final Vol. mL	Date Conc.	Tray Location	Initials	Clean-Up GPC	Clean-Up Flor.	Clean-Up Acid Wash	Clean-Up Other	Comments
1/23/19	BP	WG245126-1	1000	0.1mL	NR		✓	1mL	1-23-19	A2	1-23 ICM			✓		R499466
		-2	1000		0.1mL					A3						Blank
		-3	1000							A4						LCS 12554
		-4	1050							A5						LCS
		-5	1050							A6						MS SL97350-7
		SL97735-1F	1040		NR					A7						MSD SL97350-7
		-2F	1050							A8						Re
		-3G	1020							A9						
		-4F	1050							A10						
		-5G	1050							B1						
		-6F	1050							B2						

Date Extracted	Ext. Init.	Sample ID	Initial Vol. mL	Surr. Vol.	Spike Vol.	Fraction Pest	Fraction PCB	Final Vol. mL	Date Conc.	Tray Location	Initials	Clean-Up GPC	Clean-Up Flor.	Clean-Up Acid Wash	Clean-Up Other	Comments
1-23-19	BP	SL9735-7T	1050	0.1	NR		✓	1mL	1-23-19	B3	1-23 ICM			✓		ms/msd Re
↓	BP	↓ -8G	1020	↓	↓		✓	↓	↓	B4	↓			✓		↓
																ICM 1-23-19

Katahdin Analytical Services

GC Laboratory Instrument Runlog

Instrument: GC07

Amount Injected: 2 uL

Column Numbers: 468/469

Method: SW846 (8082) / EPA 608

(circle)

Hexane Lot #:	185876
Standard	Standard ID

Date	Init.	Result File	Sample ID	Y/N	Analytical Workgroup	Method	Comments
12/22/18	BF	7LL838	AR1660 1.0	Y	WG243328 -1	PCB133	PQ335
		7LL839	0.05		-2		PQ338
		840	0.1		-3		PQ337
		841	0.25		-4		PQ336
		842	2.5		-5		PQ334
		843	10		-6		PQ333
		844	AR1016 1.0		-7		PQ224
		845	AR1260 1.0		-8		PQ225
		846	AR1254 1.0		-9		PQ332
		847	0.05		-10		PQ287
		848	0.1		-11		PQ286
		849	0.25		-12		PQ339
		850	2.5		-13		PQ283
		851	10		-14		PQ282
		852	AR1254 IND		-15		PQ288
		853	AR1242 1.0		-16		PQ340
12/23/18		854	0.05		-17		PQ222
		855	0.1		-18		PQ221
		856	0.25		-19		PQ325
		857	2.5		-20		PQ218
		858	10		-21		PQ217
		859	AR1242 IND		-22		PQ246
		860	AR1221 1.0		-23		PQ230
		861	AR1232		-24		PQ236
		862	AR1248		-25		PQ309
		863	AR1262		-26		PQ315
		864	AR1268		-27		PQ321
		865	AR1221 0.05		-28		PQ233
		866	0.1		-29		PQ232
		867	0.25		-30		PQ231

Katahdin Analytical Services

GC Laboratory Instrument Runlog

Instrument: GC07

Amount Injected: 2 uL

Column Numbers: 468/469

Method: SW846 8082 / EPA 608 (circle)

BF 1-22-19

Hexane Lot #:	185876
Standard	Standard ID
AR1660 1.0	P9353
↓ 0.25	P9336
AR1254 1.0	P9332
↓ 0.25	P9339
AR1242 1.0	P9340
↓ 0.25	P9325

Date	Init.	Result File	Sample ID	Y/N	Analytical Workgroup	Method	Comments
1-21-19	BF	7MA469	SM0421-2 3550	Y	WG244882	PCB133	
		470	SM0433-1				TMATB DUP
		471	SM0358-1				54 MATB many
		472	RINSE	N			DUK SOILS
		473	AR1660 1.0	Y	-3		
1-22-19		474	AR1254				
		475	AR1242				
1-22-19	BF	7MA 476	PRIME	N	WG244882	PCB133	
		477	AR1660 1.0	Y			
		478	AR1254				
		479	AR1242 ↓ 3550				
		480	WG244952-1	Y			
		481	↓ -2				
		482	SM0565-2 RE				60 <PQL
		483	RINSE	N			DUK SOILS
		484	AR1660 0.25	Y			
		485	AR1254				
		486	AR1242				
1-23-19	BF	7MA 487	PRIME	N	WG245120	PCB133	
		488	AR1660 1.0	Y	-1		TMATB
		489	AR1254				
		490	AR1242				
		491	WG245126-1 3550	Y			TMATB
		492	-3				60 MATB
		493	-2				1254 LCS TMB not spiked
		494	-4				1660 MATB TMB
		495	-5				
		496	SL9755-1RE	Y			60 <PQL
		497	-2RE				DUP
		498	-3RE				60

BF 1-24-19

Katahdin Analytical Services

GC Laboratory Instrument Runlog

Instrument: GC07

Amount Injected: 2 uL

Column Numbers: 468/469

Method: SW846 (8082) EPA 608
(circle)

Hexane Lot #:	185876
Standard	Standard ID
AR1660 1.0	P9353
↓ 0.25	P9336
AR1254 1.0	P9372
↓ 0.25	P9379
AR1242 1.0	P9340
↓ 0.25	P9325

Date	Init.	Result File	Sample ID	Y/N	Analytical Workgroup	Method	Comments
1-23-19	BF	7MA499	S19735-4RE 35.1g	Y	W6245120	PCB133	60
↓	↓	50C	-5RE	↓	↓	↓	ND
		51	-6RE				60 < PQL
		52	-7RE				60 < PQL TB
		53	-8RE				60 < PQL
		54	AR1660 0.25	Y	-2		16 ↑A
		55	AR1254 ↓				
↓	↓	56	AR1242 ↓	↓	↓	↓	↑A

METALS DATA

Sample Data Section

METALS SAMPLE FLAGGING

FLAG	SPECIFIED MEANING
E	The reported value is estimated because of the presence of interference (as indicated by serial dilution).
N	The pre-digestion spiked sample recovery is not within control limits.
*	The duplicate sample analysis relative percent difference (RPD) is not within control limits.
B	Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.
A	The post-digestion spiked sample recovery is not within control limits.
•	Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits.
U	The analyte was not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client. Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL, "U" LOQ or "U" LOD, where the rate of false negatives is <1%.
J	Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).
Q	One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV).

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: Katahdin Analytical Services

SDG Name: SL9735 **SOW No.** SW846

Client Field ID	Lab Sample ID
EB-001-100318	SL9735-008
MW01-100418	SL9735-001
MW03-100318	SL9735-002
MW04A-100318	SL9735-003
MW05-100318	SL9735-004
MW05-100318-REP	SL9735-005
MW06-100418	SL9735-006
MW07A-100318	SL9735-007
MW07A-100318P	SL9735-007P
MW07A-100318S	SL9735-007S

Were ICP interelement corrections applied ?	Yes
Were ICP background corrections applied ?	Yes
If yes - were raw data generated before application of background corrections ?	No

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: Madison Dinsmore

Date: 10/15/18 Title: Analyst

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** MW01-100418

Matrix: WATER **SDG Name:** SL9735

Percent Solids: 0.00 **Lab Sample ID:** SL9735-001

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	Adj. PQL	Adj. MDL
7440-43-9	CADMIUM, TOTAL	0.40	J		MS	5	1.0	0.13
7440-47-3	CHROMIUM, TOTAL	2.8	J		MS	5	5.0	0.65
7440-50-8	COPPER, TOTAL	2.8	J		MS	5	3.0	0.43
7439-92-1	LEAD, TOTAL	1.20			MS	5	1.0	0.024

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** MW03-100318

Matrix: WATER **SDG Name:** SL9735

Percent Solids: 0.00 **Lab Sample ID:** SL9735-002

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	Adj. PQL	Adj. MDL
7440-43-9	CADMIUM, TOTAL	0.46	J		MS	5	1.0	0.13
7440-47-3	CHROMIUM, TOTAL	4.4	J		MS	5	5.0	0.65
7440-50-8	COPPER, TOTAL	1.6	J		MS	5	3.0	0.43
7439-92-1	LEAD, TOTAL	0.12	J		MS	5	1.0	0.024

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** MW04A-100318

Matrix: WATER **SDG Name:** SL9735

Percent Solids: 0.00 **Lab Sample ID:** SL9735-003

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	Adj. PQL	Adj. MDL
7440-43-9	CADMIUM, TOTAL	0.14	J		MS	5	1.0	0.13
7440-47-3	CHROMIUM, TOTAL	4.5	J		MS	5	5.0	0.65
7440-50-8	COPPER, TOTAL	4.2			MS	5	3.0	0.43
7439-92-1	LEAD, TOTAL	0.643	J		MS	5	1.0	0.024

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** MW05-100318

Matrix: WATER **SDG Name:** SL9735

Percent Solids: 0.00 **Lab Sample ID:** SL9735-004

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	Adj. PQL	Adj. MDL
7440-43-9	CADMIUM, TOTAL	1.0	U		MS	5	1.0	0.13
7440-47-3	CHROMIUM, TOTAL	5.4			MS	5	5.0	0.65
7440-50-8	COPPER, TOTAL	2.7	J		MS	5	3.0	0.43
7439-92-1	LEAD, TOTAL	0.413	J		MS	5	1.0	0.024

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** MW05-100318-REP

Matrix: WATER **SDG Name:** SL9735

Percent Solids: 0.00 **Lab Sample ID:** SL9735-005

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	Adj. PQL	Adj. MDL
7440-43-9	CADMIUM, TOTAL	1.0	U		MS	5	1.0	0.13
7440-47-3	CHROMIUM, TOTAL	4.1	J		MS	5	5.0	0.65
7440-50-8	COPPER, TOTAL	2.5	J		MS	5	3.0	0.43
7439-92-1	LEAD, TOTAL	0.23	J		MS	5	1.0	0.024

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** MW06-100418

Matrix: WATER **SDG Name:** SL9735

Percent Solids: 0.00 **Lab Sample ID:** SL9735-006

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	Adj. PQL	Adj. MDL
7440-43-9	CADMIUM, TOTAL	1.0	U		MS	5	1.0	0.13
7440-47-3	CHROMIUM, TOTAL	3.0	J		MS	5	5.0	0.65
7440-50-8	COPPER, TOTAL	2.2	J		MS	5	3.0	0.43
7439-92-1	LEAD, TOTAL	0.20	J		MS	5	1.0	0.024

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** MW07A-100318

Matrix: WATER **SDG Name:** SL9735

Percent Solids: 0.00 **Lab Sample ID:** SL9735-007

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	Adj. PQL	Adj. MDL
7440-43-9	CADMIUM, TOTAL	0.91	J		MS	5	1.0	0.13
7440-47-3	CHROMIUM, TOTAL	2.5	J		MS	5	5.0	0.65
7440-50-8	COPPER, TOTAL	3.8			MS	5	3.0	0.43
7439-92-1	LEAD, TOTAL	0.093	J		MS	5	1.0	0.024

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** EB-001-100318

Matrix: WATER **SDG Name:** SL9735

Percent Solids: 0.00 **Lab Sample ID:** SL9735-008

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	Adj. PQL	Adj. MDL
7440-43-9	CADMIUM, TOTAL	1.0	U		MS	5	1.0	0.13
7440-47-3	CHROMIUM, TOTAL	2.0	J		MS	5	5.0	0.65
7440-50-8	COPPER, TOTAL	0.50	J		MS	5	3.0	0.43
7439-92-1	LEAD, TOTAL	0.10	J		MS	5	1.0	0.024

Comments:

QC Summary Section

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL9735

Concentration Units: ug/L

SAMPLE: ICV

File: JLJ11E Oct 11, 2018 19:14

Analyte	True	Found	%R (1)
ALUMINUM	400.0	390.50	97.6
CADMIUM	20.0	19.96	99.8
CALCIUM	4000.0	4145.00	103.6
CHROMIUM	20.0	20.26	101.3
COPPER	20.0	19.59	98.0
IRON	4000.0	4057.00	101.4
LEAD	20.0	19.82	99.1
MAGNESIUM	4000.0	4010.00	100.3
MOLYBDENUM	40.0	38.80	97.0
POTASSIUM	4000.0	3993.00	99.8
SODIUM	4000.0	3991.00	99.8

SAMPLE: CCV

File: JLJ11E Oct 11, 2018 19:59

Analyte	True	Found	%R (1)
ALUMINUM	500.0	484.50	96.9
CADMIUM	25.0	25.00	100.0
CALCIUM	5000.0	5046.00	100.9
CHROMIUM	25.0	25.34	101.4
COPPER	25.0	24.97	99.9
IRON	5000.0	4902.00	98.0
LEAD	25.0	25.05	100.2
MAGNESIUM	5000.0	4836.00	96.7
MOLYBDENUM	25.0	25.01	100.0
POTASSIUM	5000.0	4890.00	97.8
SODIUM	5000.0	4917.00	98.3

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL9735

Concentration Units: ug/L

SAMPLE: CCV

File: JLJ11E Oct 11, 2018 20:47

Analyte	True	Found	%R (1)
ALUMINUM	500.0	488.80	97.8
CADMIUM	25.0	24.51	98.0
CALCIUM	5000.0	5079.00	101.6
CHROMIUM	25.0	25.55	102.2
COPPER	25.0	24.39	97.6
IRON	5000.0	4967.00	99.3
LEAD	25.0	24.96	99.8
MAGNESIUM	5000.0	4871.00	97.4
MOLYBDENUM	25.0	24.57	98.3
POTASSIUM	5000.0	4964.00	99.3
SODIUM	5000.0	4967.00	99.3

SAMPLE: CCV

File: JLJ11E Oct 11, 2018 21:36

Analyte	True	Found	%R (1)
ALUMINUM	500.0	484.20	96.8
CADMIUM	25.0	23.86	95.4
CALCIUM	5000.0	5090.00	101.8
CHROMIUM	25.0	24.95	99.8
COPPER	25.0	23.85	95.4
IRON	5000.0	4754.00	95.1
LEAD	25.0	24.71	98.8
MAGNESIUM	5000.0	4820.00	96.4
MOLYBDENUM	25.0	24.13	96.5
POTASSIUM	5000.0	4963.00	99.3
SODIUM	5000.0	4835.00	96.7

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL9735

Concentration Units: ug/L

SAMPLE: CCV

File: JLJ11E Oct 11, 2018 22:26

Analyte	True	Found	%R (1)
ALUMINUM	500.0	489.00	97.8
CADMIUM	25.0	24.07	96.3
CALCIUM	5000.0	5101.00	102.0
CHROMIUM	25.0	25.30	101.2
COPPER	25.0	23.68	94.7
IRON	5000.0	4902.00	98.0
LEAD	25.0	24.42	97.7
MAGNESIUM	5000.0	4921.00	98.4
MOLYBDENUM	25.0	24.22	96.9
POTASSIUM	5000.0	5042.00	100.8
SODIUM	5000.0	4968.00	99.4

SAMPLE: CCV

File: JLJ11E Oct 11, 2018 23:15

Analyte	True	Found	%R (1)
ALUMINUM	500.0	485.20	97.0
CADMIUM	25.0	23.59	94.4
CALCIUM	5000.0	5127.00	102.5
CHROMIUM	25.0	24.89	99.6
COPPER	25.0	23.33	93.3
IRON	5000.0	4820.00	96.4
LEAD	25.0	24.28	97.1
MAGNESIUM	5000.0	4891.00	97.8
MOLYBDENUM	25.0	23.78	95.1
POTASSIUM	5000.0	5014.00	100.3
SODIUM	5000.0	4947.00	98.9

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL9735

Concentration Units: ug/L

SAMPLE: CCV

File: JLJ11E Oct 12, 2018 0:04

Analyte	True	Found	%R (1)
ALUMINUM	500.0	484.90	97.0
CADMIUM	25.0	23.56	94.2
CALCIUM	5000.0	5104.00	102.1
CHROMIUM	25.0	24.97	99.9
COPPER	25.0	23.29	93.2
IRON	5000.0	4897.00	97.9
LEAD	25.0	23.98	95.9
MAGNESIUM	5000.0	4805.00	96.1
MOLYBDENUM	25.0	23.84	95.4
POTASSIUM	5000.0	4979.00	99.6
SODIUM	5000.0	4921.00	98.4

SAMPLE: CCV

File: JLJ11E Oct 12, 2018 0:53

Analyte	True	Found	%R (1)
ALUMINUM	500.0	491.80	98.4
CADMIUM	25.0	23.92	95.7
CALCIUM	5000.0	5134.00	102.7
CHROMIUM	25.0	25.76	103.0
COPPER	25.0	23.52	94.1
IRON	5000.0	5069.00	101.4
LEAD	25.0	24.24	97.0
MAGNESIUM	5000.0	4914.00	98.3
MOLYBDENUM	25.0	24.28	97.1
POTASSIUM	5000.0	5022.00	100.4
SODIUM	5000.0	4934.00	98.7

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL9735

Concentration Units: ug/L

SAMPLE: CCV

File: JLJ11E Oct 12, 2018 1:43

Analyte	True	Found	%R (1)
ALUMINUM	500.0	503.00	100.6
CADMIUM	25.0	24.00	96.0
CALCIUM	5000.0	5137.00	102.7
CHROMIUM	25.0	26.00	104.0
COPPER	25.0	23.36	93.4
IRON	5000.0	5090.00	101.8
LEAD	25.0	24.12	96.5
MAGNESIUM	5000.0	4928.00	98.6
MOLYBDENUM	25.0	24.36	97.4
POTASSIUM	5000.0	5099.00	102.0
SODIUM	5000.0	4993.00	99.9

SAMPLE: CCV

File: JLJ11E Oct 12, 2018 2:33

Analyte	True	Found	%R (1)
ALUMINUM	500.0	492.50	98.5
CADMIUM	25.0	23.47	93.9
CALCIUM	5000.0	5091.00	101.8
CHROMIUM	25.0	26.05	104.2
COPPER	25.0	23.05	92.2
IRON	5000.0	5134.00	102.7
LEAD	25.0	23.97	95.9
MAGNESIUM	5000.0	4909.00	98.2
MOLYBDENUM	25.0	24.20	96.8
POTASSIUM	5000.0	5059.00	101.2
SODIUM	5000.0	4978.00	99.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL9735

Concentration Units: ug/L

SAMPLE: CCV

File: JLJ11E Oct 12, 2018 3:22

Analyte	True	Found	%R (1)
ALUMINUM	500.0	496.50	99.3
CADMIUM	25.0	23.71	94.8
CALCIUM	5000.0	5088.00	101.8
CHROMIUM	25.0	26.23	104.9
COPPER	25.0	22.98	91.9
IRON	5000.0	5248.00	105.0
LEAD	25.0	23.69	94.8
MAGNESIUM	5000.0	4911.00	98.2
MOLYBDENUM	25.0	24.03	96.1
POTASSIUM	5000.0	5076.00	101.5
SODIUM	5000.0	4937.00	98.7

SAMPLE: CCV

File: JLJ11E Oct 12, 2018 4:04

Analyte	True	Found	%R (1)
ALUMINUM	500.0	498.50	99.7
CADMIUM	25.0	23.60	94.4
CALCIUM	5000.0	5095.00	101.9
CHROMIUM	25.0	26.15	104.6
COPPER	25.0	23.07	92.3
IRON	5000.0	5274.00	105.5
LEAD	25.0	23.55	94.2
MAGNESIUM	5000.0	4940.00	98.8
MOLYBDENUM	25.0	24.02	96.1
POTASSIUM	5000.0	5102.00	102.0
SODIUM	5000.0	4968.00	99.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL9735

Concentration Units: ug/L

SAMPLE: CCV

File: JLJ11E Oct 12, 2018 4:16

Analyte	True	Found	%R (1)
ALUMINUM	500.0	504.80	101.0
CADMIUM	25.0	23.91	95.6
CALCIUM	5000.0	5102.00	102.0
CHROMIUM	25.0	26.44	105.8
COPPER	25.0	23.50	94.0
IRON	5000.0	5330.00	106.6
LEAD	25.0	23.73	94.9
MAGNESIUM	5000.0	4912.00	98.2
MOLYBDENUM	25.0	24.27	97.1
POTASSIUM	5000.0	5154.00	103.1
SODIUM	5000.0	5013.00	100.3

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL9735

Concentration Units: ug/L

SAMPLE: PQL

File: JLJ11E Oct 11, 2018 19:22

Analyte	TRUE	FOUND	% R
ALUMINUM	20.0	21.71	108.6
CADMIUM	0.2	0.20	100.0
CALCIUM	20.0	26.49	132.4•
CHROMIUM	1.0	0.98	98.0
COPPER	0.6	0.68	113.3
IRON	20.0	23.91	119.6
LEAD	0.2	0.22	110.0
MAGNESIUM	20.0	20.83	104.1
MOLYBDENUM	1.0	1.01	101.0
POTASSIUM	200.0	201.00	100.5
SODIUM	200.0	205.10	102.6

SAMPLE: PQL

File: JLJ11E Oct 12, 2018 04:12

Analyte	TRUE	FOUND	% R
ALUMINUM	20.0	21.39	107.0
CADMIUM	0.2	0.19	95.0
CALCIUM	20.0	17.33	86.6
CHROMIUM	1.0	0.97	97.0
COPPER	0.6	0.74	123.3
IRON	20.0	40.85	204.3•
LEAD	0.2	0.21	105.0
MAGNESIUM	20.0	20.67	103.4
MOLYBDENUM	1.0	0.98	98.0
POTASSIUM	200.0	211.50	105.8
SODIUM	200.0	230.90	115.5

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL9735

Concentration Units: ug/L

SAMPLE: ICB

File: JLJ11E Oct 11, 2018 19:18

Analyte	Result	C
ALUMINUM	0.330	U
CADMIUM	0.025	U
CALCIUM	6.800	U
CHROMIUM	-0.157	U
COPPER	0.087	U
IRON	6.400	U
LEAD	0.010	J
MAGNESIUM	0.350	U
MOLYBDENUM	0.020	U
POTASSIUM	12.000	U
SODIUM	6.600	U

SAMPLE: CCB

File: JLJ11E Oct 11, 2018 20:03

Analyte	Result	C
ALUMINUM	0.330	U
CADMIUM	0.025	U
CALCIUM	6.800	U
CHROMIUM	0.130	U
COPPER	0.087	U
IRON	6.400	U
LEAD	0.005	U
MAGNESIUM	0.350	U
MOLYBDENUM	0.021	J
POTASSIUM	12.000	U
SODIUM	6.600	U

SAMPLE: CCB

File: JLJ11E Oct 11, 2018 20:51

Analyte	Result	C
ALUMINUM	0.330	U
CADMIUM	0.025	U
CALCIUM	-6.855	U
CHROMIUM	-0.218	U
COPPER	0.087	U
IRON	6.400	U
LEAD	0.016	J
MAGNESIUM	0.350	U
MOLYBDENUM	0.020	U
POTASSIUM	12.000	U
SODIUM	6.600	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL9735

Concentration Units: ug/L

SAMPLE: CCB
File: JLJ11E Oct 11, 2018 21:40

Analyte	Result	C
ALUMINUM	0.330	U
CADMIUM	0.025	U
CALCIUM	-10.020	U
CHROMIUM	-0.233	U
COPPER	0.087	U
IRON	6.400	U
LEAD	0.007	J
MAGNESIUM	0.350	U
MOLYBDENUM	0.020	U
POTASSIUM	12.000	U
SODIUM	6.600	U

SAMPLE: CCB
File: JLJ11E Oct 11, 2018 22:30

Analyte	Result	C
ALUMINUM	0.330	U
CADMIUM	0.025	U
CALCIUM	-10.810	U
CHROMIUM	-0.241	U
COPPER	0.087	U
IRON	6.400	U
LEAD	0.005	U
MAGNESIUM	0.350	U
MOLYBDENUM	0.020	U
POTASSIUM	12.000	U
SODIUM	6.600	U

SAMPLE: CCB
File: JLJ11E Oct 11, 2018 23:19

Analyte	Result	C
ALUMINUM	0.330	U
CADMIUM	0.025	U
CALCIUM	-11.370	U
CHROMIUM	-0.244	U
COPPER	0.087	U
IRON	6.400	U
LEAD	0.005	J
MAGNESIUM	0.350	U
MOLYBDENUM	0.020	U
POTASSIUM	12.000	U
SODIUM	6.600	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL9735

Concentration Units: ug/L

SAMPLE: CCB
File: JLJ11E Oct 12, 2018 0:08

Analyte	Result	C
ALUMINUM	0.330	U
CADMIUM	0.025	U
CALCIUM	-7.051	U
CHROMIUM	-0.152	U
COPPER	0.285	J
IRON	6.400	U
LEAD	0.005	U
MAGNESIUM	0.350	U
MOLYBDENUM	0.020	U
POTASSIUM	12.000	U
SODIUM	48.290	J

SAMPLE: CCB
File: JLJ11E Oct 12, 2018 0:57

Analyte	Result	C
ALUMINUM	0.360	J
CADMIUM	0.025	U
CALCIUM	-9.684	U
CHROMIUM	-0.153	U
COPPER	0.141	J
IRON	8.725	J
LEAD	0.006	J
MAGNESIUM	0.350	U
MOLYBDENUM	0.020	U
POTASSIUM	12.000	U
SODIUM	30.380	J

SAMPLE: CCB
File: JLJ11E Oct 12, 2018 1:47

Analyte	Result	C
ALUMINUM	0.330	U
CADMIUM	0.025	U
CALCIUM	-11.910	U
CHROMIUM	-0.171	U
COPPER	0.087	U
IRON	11.450	J
LEAD	0.005	J
MAGNESIUM	0.350	U
MOLYBDENUM	0.020	U
POTASSIUM	12.000	U
SODIUM	11.890	J

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL9735

Concentration Units: ug/L

SAMPLE: CCB
File: JLJ11E Oct 12, 2018 2:37

Analyte	Result	C
ALUMINUM	0.330	U
CADMIUM	0.025	U
CALCIUM	-15.610	U
CHROMIUM	-0.194	U
COPPER	0.148	J
IRON	8.978	J
LEAD	0.007	J
MAGNESIUM	0.598	J
MOLYBDENUM	0.020	U
POTASSIUM	12.000	U
SODIUM	98.270	J

SAMPLE: CCB
File: JLJ11E Oct 12, 2018 3:27

Analyte	Result	C
ALUMINUM	0.330	U
CADMIUM	0.025	U
CALCIUM	-12.040	U
CHROMIUM	-0.209	U
COPPER	0.087	U
IRON	12.710	J
LEAD	0.005	U
MAGNESIUM	0.350	U
MOLYBDENUM	0.020	U
POTASSIUM	12.000	U
SODIUM	58.950	J

SAMPLE: CCB
File: JLJ11E Oct 12, 2018 4:08

Analyte	Result	C
ALUMINUM	0.330	U
CADMIUM	0.025	U
CALCIUM	-11.520	U
CHROMIUM	-0.157	U
COPPER	0.087	U
IRON	15.610	J
LEAD	0.008	J
MAGNESIUM	0.350	U
MOLYBDENUM	0.020	U
POTASSIUM	12.000	U
SODIUM	30.690	J

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL9735

Concentration Units: ug/L

SAMPLE: CCB

File: JLJ11E Oct 12, 2018 4:20

Analyte	Result	C
ALUMINUM	0.330	U
CADMIUM	0.025	U
CALCIUM	-9.118	U
CHROMIUM	-0.137	U
COPPER	0.087	U
IRON	17.920	J
LEAD	0.005	U
MAGNESIUM	0.350	U
MOLYBDENUM	0.020	U
POTASSIUM	12.000	U
SODIUM	25.750	J

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWLJ09IMW1

Matrix: WATER **SDG Name:** SL9735

QC Batch ID: LJ09IMW1

Concentration Units : ug/L

Analyte	RESULT	C
CADMIUM	1.0	U
CHROMIUM	1.9	J
COPPER	1.1	J
LEAD	0.20	J

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SL9735

Concentration Units: ug/L

SAMPLE: ICSA

File: JLJ11E Oct 11, 2018 19:30

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	89510	89.5
CADMIUM	0	0	
CALCIUM	100000	96290	96.3
CHROMIUM	0	1	
COPPER	0	2	
IRON	100000	86830	86.8
LEAD	0	0	
MAGNESIUM	100000	90520	90.5
MOLYBDENUM	2000	1700	85.0
POTASSIUM	100000	94490	94.5
SODIUM	100000	91910	91.9

SAMPLE: ICSAB

File: JLJ11E Oct 11, 2018 19:34

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	90120	90.1
CADMIUM	20	19	95.0
CALCIUM	100000	98010	98.0
CHROMIUM	20	21	105.0
COPPER	20	20	100.0
IRON	100000	86600	86.6
LEAD	20	22	110.0
MAGNESIUM	100000	90340	90.3
MOLYBDENUM	2000	1731	86.6
POTASSIUM	100000	94040	94.0
SODIUM	100000	92420	92.4

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** MW07A-100318P

Matrix: WATER **SDG Name:** SL9735

Percent Solids: 0.00 **Lab Sample ID:** SL9735-007P

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
CADMIUM, TOTAL	246		0.91	J	250	98.2		80	120	MS
CHROMIUM, TOTAL	217		2.5	J	200	107.3		80	120	MS
COPPER, TOTAL	254		3.8		250	100.2		80	120	MS
LEAD, TOTAL	101		0.093	J	100	101.2		80	120	MS

Comments:

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** MW07A-100318S

Matrix: WATER **SDG Name:** SL9735

Percent Solids: 0.00 **Lab Sample ID:** SL9735-007S

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
CADMIUM, TOTAL	246		0.91	J	250	98.1		80	120	MS
CHROMIUM, TOTAL	218		2.5	J	200	107.7		80	120	MS
COPPER, TOTAL	253		3.8		250	99.8		80	120	MS
LEAD, TOTAL	102		0.093	J	100	102.2		80	120	MS

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** MW07A-100318A

Matrix: WATER **SDG Name:** SL9735

Percent Solids: 0.00 **Lab Sample ID:** SL9735-007A

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
CADMIUM, TOTAL	2.21		0.18	J	2	101.6		75	125	MS
CHROMIUM, TOTAL	11.7		0.50	J	10	112.1		75	125	MS
COPPER, TOTAL	6.90		0.76		6	102.4		75	125	MS
LEAD, TOTAL	2.07		0.019	J	2	102.7		75	125	MS

Comments:

5D

SPIKE DUPLICATES

Lab Name: Katahdin Analytical Services **Client Field ID:** MW07A-100318

Matrix: WATER **SDG Name:** SL9735

Percent Solids: 0.00 **Lab Sample ID:** SL9735-007

Concentration Units : ug/L

Analyte	Control Limits	Spike Result	C	Spike Dup. Result	C	RPD	Q	M
CADMIUM, TOTAL		246		246		0.1		MS
CHROMIUM, TOTAL		218		217		0.4		MS
COPPER, TOTAL		253		254		0.4		MS
LEAD, TOTAL		102		101		1.0		MS

Comments:

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWLJ09IMW1

Matrix: WATER **SDG Name:** SL9735

QC Batch ID: LJ09IMW1

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
CADMIUM	250	248	99.1	80	120
CHROMIUM	200	221	110.3	80	120
COPPER	250	264	105.7	80	120
LEAD	100	104	103.8	80	120

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services **Client Field ID:** MW07A-100318L

Matrix: WATER **SDG Name:** SL9735

Lab Sample ID: SL9735-007L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution Result	C	% Difference	Q	M
CADMIUM, TOTAL	0.18	J	0.19	J	5.6		MS
CHROMIUM, TOTAL	0.50	J	0.65	U	100.0		MS
COPPER, TOTAL	0.76		0.75	J	1.3		MS
LEAD, TOTAL	0.019	J	0.030	J	57.9		MS

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 9/17/2018

Concentration Units: ug/L

Analyte	PQL/LOQ	IDL	M
CADMIUM	0.20	0.025	MS
CHROMIUM	1.0	0.13	MS
COPPER	0.60	0.087	MS
LEAD	0.20	0.0049	MS

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 9/17/2018

Analyte	LOD	Units	M	EPA Prep./Anal. Method
CADMIUM	0.040	ug/L	MS	SW846 3010A / SW846 6020A
CHROMIUM	0.80	ug/L	MS	SW846 3010A / SW846 6020A
COPPER	0.40	ug/L	MS	SW846 3010A / SW846 6020A
LEAD	0.10	ug/L	MS	SW846 3010A / SW846 6020A

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 9/17/2018

Analyte	MDL	Units	M	EPA Prep./Anal. Method
CADMIUM	0.0059	ug/L	MS	SW846 3010A / SW846 6020A
CHROMIUM	0.044	ug/L	MS	SW846 3010A / SW846 6020A
COPPER	0.037	ug/L	MS	SW846 3010A / SW846 6020A
LEAD	0.015	ug/L	MS	SW846 3010A / SW846 6020A

ICP LINEAR RANGES

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 7/6/2018

Concentration Units: ug/L

Analyte	Integration Time (sec)	Linear Range	M
ALUMINUM	0.01	200000	MS
CADMIUM	0.10	1000	MS
CALCIUM	0.03	200000	MS
CHROMIUM	0.10	2000	MS
COPPER	0.10	2000	MS
IRON	0.03	100000	MS
LEAD	0.10	2000	MS
MAGNESIUM	0.05	200000	MS
MOLYBDENUM	0.10	1000	MS
POTASSIUM	0.01	200000	MS
SODIUM	0.01	200000	MS

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** LJ09IMW1

Matrix: WATER **SDG Name:** SL9735

Method: MS **Prep Date:** 10/09/2018

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LCSWLJ09IMW1	LCSWLJ09IMW1	0.05	0.05	
PBWLJ09IMW1	PBWLJ09IMW1	0.05	0.05	
MW01-100418	SL9735-001	0.05	0.05	D
MW03-100318	SL9735-002	0.05	0.05	D
MW04A-100318	SL9735-003	0.05	0.05	D
MW05-100318	SL9735-004	0.05	0.05	D
MW05-100318-REP	SL9735-005	0.05	0.05	D
MW06-100418	SL9735-006	0.05	0.05	D
MW07A-100318	SL9735-007	0.05	0.05	J
MW07A-100318P	SL9735-007P	0.05	0.05	J
MW07A-100318S	SL9735-007S	0.05	0.05	J
EB-001-100318	SL9735-008	0.05	0.05	D

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL9735

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLJ11E

Date: 10/11/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements									
6020 TUNE		1	14:31										
200.8 TUNE		1	15:37										
Cal Blank		1	19:06	Al	Cd	Ca	Cr	Cu	Fe	Pb	Mg	Mo	K	Na
Cal Std		1	19:10	Al	Cd	Ca	Cr	Cu	Fe	Pb	Mg	Mo	K	Na
ICV		1	19:14	Al	Cd	Ca	Cr	Cu	Fe	Pb	Mg	Mo	K	Na
ICB		1	19:18	Al	Cd	Ca	Cr	Cu	Fe	Pb	Mg	Mo	K	Na
PQL		1	19:22	Al	Cd	Ca	Cr	Cu	Fe	Pb	Mg	Mo	K	Na
ZZZZZZ		1	19:26											
ICSA		1	19:30	Al	Cd	Ca	Cr	Cu	Fe	Pb	Mg	Mo	K	Na
ICSAB		1	19:34	Al	Cd	Ca	Cr	Cu	Fe	Pb	Mg	Mo	K	Na
ZZZZZZ		1	19:38											
ZZZZZZ		1	19:43											
ZZZZZZ		1	19:46											
ZZZZZZ		1	19:50											
ZZZZZZ		1	19:54											
CCV		1	19:59	Al	Cd	Ca	Cr	Cu	Fe	Pb	Mg	Mo	K	Na
CCB		1	20:03	Al	Cd	Ca	Cr	Cu	Fe	Pb	Mg	Mo	K	Na
ZZZZZZ		5	20:07											
ZZZZZZ		5	20:11											
ZZZZZZ		5	20:15											
ZZZZZZ		5	20:19											
ZZZZZZ		1	20:23											
ZZZZZZ		5	20:27											
ZZZZZZ		5	20:31											
ZZZZZZ		5	20:35											
ZZZZZZ		5	20:39											
ZZZZZZ		1	20:43											

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL9735

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLJ11E

Date: 10/11/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time		Elements									
CCV		1	20:47	Al	Cd	Ca	Cr	Cu	Fe	Pb	Mg	Mo	K	Na
CCB		1	20:51	Al	Cd	Ca	Cr	Cu	Fe	Pb	Mg	Mo	K	Na
ZZZZZZ		20	20:56											
ZZZZZZ		1	21:00											
ZZZZZZ		5	21:04											
ZZZZZZ		5	21:08											
ZZZZZZ		5	21:12											
ZZZZZZ		5	21:16											
ZZZZZZ		5	21:20											
ZZZZZZ		5	21:24											
ZZZZZZ		5	21:28											
ZZZZZZ		1	21:32											
CCV		1	21:36	Al	Cd	Ca	Cr	Cu	Fe	Pb	Mg	Mo	K	Na
CCB		1	21:40	Al	Cd	Ca	Cr	Cu	Fe	Pb	Mg	Mo	K	Na
PBWLJ09IMW1		5	21:45		Cd		Cr	Cu		Pb				
LCSWLJ09IMW1		5	21:49		Cd		Cr	Cu		Pb				
SL9735-001	MW01-100418	5	21:53		Cd		Cr	Cu		Pb				
SL9735-002	MW03-100318	5	21:57		Cd		Cr	Cu		Pb				
SL9735-003	MW04A-100318	5	22:01		Cd		Cr	Cu		Pb				
SL9735-004	MW05-100318	5	22:05		Cd		Cr	Cu		Pb				
SL9735-005	MW05-100318-REP	5	22:09		Cd		Cr	Cu		Pb				
SL9735-006	MW06-100418	5	22:13		Cd		Cr	Cu		Pb				
SL9735-007	MW07A-100318	5	22:18		Cd		Cr	Cu		Pb				
SL9735-007L	MW07A-100318L	25	22:22		Cd		Cr	Cu		Pb				
CCV		1	22:26	Al	Cd	Ca	Cr	Cu	Fe	Pb	Mg	Mo	K	Na
CCB		1	22:30	Al	Cd	Ca	Cr	Cu	Fe	Pb	Mg	Mo	K	Na
SL9735-007A	MW07A-100318A	5	22:34		Cd		Cr	Cu		Pb				

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL9735

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLJ11E

Date: 10/11/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements									
SL9735-007S	MW07A-100318S	5	22:38		Cd		Cr	Cu		Pb			
SL9735-007P	MW07A-100318P	5	22:42		Cd		Cr	Cu		Pb			
SL9735-008	EB-001-100318	5	22:46		Cd		Cr	Cu		Pb			
ZZZZZZ		1	22:50										
ZZZZZZ		1	22:54										
ZZZZZZ		5	22:58										
ZZZZZZ		1	23:02										
ZZZZZZ		1	23:06										
ZZZZZZ		1	23:11										
CCV		1	23:15	Al	Cd	Ca	Cr	Cu	Fe	Pb	Mg	Mo	K	Na
CCB		1	23:19	Al	Cd	Ca	Cr	Cu	Fe	Pb	Mg	Mo	K	Na
ZZZZZZ		1	23:23										
ZZZZZZ		1	23:27										
ZZZZZZ		1	23:31										
ZZZZZZ		5	23:35										
ZZZZZZ		5	23:39										
ZZZZZZ		5	23:43										
ZZZZZZ		1	23:47										
ZZZZZZ		1	23:51										
ZZZZZZ		5	23:55										
ZZZZZZ		5	23:59										
CCV		1	0:04	Al	Cd	Ca	Cr	Cu	Fe	Pb	Mg	Mo	K	Na
CCB		1	0:08	Al	Cd	Ca	Cr	Cu	Fe	Pb	Mg	Mo	K	Na
ZZZZZZ		5	0:12										
ZZZZZZ		1	0:16										
ZZZZZZ		1	0:20										
ZZZZZZ		5	0:24										

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL9735

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLJ11E

Date: 10/12/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	0:28	
ZZZZZZ		1	0:32	
ZZZZZZ		1	0:36	
ZZZZZZ		1	0:41	
ZZZZZZ		1	0:45	
ZZZZZZ		1	0:49	
CCV		1	0:53	Al Cd Ca Cr Cu Fe Pb Mg Mo K Na
CCB		1	0:57	Al Cd Ca Cr Cu Fe Pb Mg Mo K Na
ZZZZZZ		1	1:01	
ZZZZZZ		1	1:05	
ZZZZZZ		1	1:09	
ZZZZZZ		5	1:14	
ZZZZZZ		5	1:18	
ZZZZZZ		5	1:22	
ZZZZZZ		1	1:26	
ZZZZZZ		1	1:30	
ZZZZZZ		1	1:34	
ZZZZZZ		1	1:38	
CCV		1	1:43	Al Cd Ca Cr Cu Fe Pb Mg Mo K Na
CCB		1	1:47	Al Cd Ca Cr Cu Fe Pb Mg Mo K Na
ZZZZZZ		5	1:51	
ZZZZZZ		5	1:55	
ZZZZZZ		5	1:59	
ZZZZZZ		5	2:03	
ZZZZZZ		5	2:08	
ZZZZZZ		5	2:12	
ZZZZZZ		5	2:16	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL9735

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLJ11E

Date: 10/12/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements									
ZZZZZZ		5	2:20										
ZZZZZZ		5	2:24										
ZZZZZZ		5	2:28										
CCV		1	2:33	Al	Cd	Ca	Cr	Cu	Fe	Pb	Mg	Mo	K	Na
CCB		1	2:37	Al	Cd	Ca	Cr	Cu	Fe	Pb	Mg	Mo	K	Na
ZZZZZZ		5	2:41										
ZZZZZZ		5	2:45										
ZZZZZZ		5	2:49										
ZZZZZZ		5	2:53										
ZZZZZZ		5	2:58										
ZZZZZZ		5	3:02										
ZZZZZZ		5	3:06										
ZZZZZZ		5	3:10										
ZZZZZZ		5	3:14										
ZZZZZZ		25	3:18										
CCV		1	3:22	Al	Cd	Ca	Cr	Cu	Fe	Pb	Mg	Mo	K	Na
CCB		1	3:27	Al	Cd	Ca	Cr	Cu	Fe	Pb	Mg	Mo	K	Na
ZZZZZZ		5	3:31										
ZZZZZZ		5	3:35										
ZZZZZZ		5	3:39										
ZZZZZZ		5	3:43										
ZZZZZZ		5	3:47										
ZZZZZZ		5	3:51										
ZZZZZZ		1	3:55										
ZZZZZZ		1	3:59										
CCV		1	4:04	Al	Cd	Ca	Cr	Cu	Fe	Pb	Mg	Mo	K	Na
CCB		1	4:08	Al	Cd	Ca	Cr	Cu	Fe	Pb	Mg	Mo	K	Na

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL9735

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLJ11E

Date: 10/12/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements									
PQL		1	4:12	Al	Cd	Ca	Cr	Cu	Fe	Pb	Mg	Mo	K	Na
CCV		1	4:16	Al	Cd	Ca	Cr	Cu	Fe	Pb	Mg	Mo	K	Na
CCB		1	4:20	Al	Cd	Ca	Cr	Cu	Fe	Pb	Mg	Mo	K	Na

Raw Data Section

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: J (Agilent 7500) **ANALYST**: MD **ANALYSIS DATE**: 10/11/2018

FILE NAME: JLJ11E

METHOD: ICP-MS
- ☑ 200.8
- ☑ 6020
- ☐ DOD

REVIEWED
JS 10.15.18
KATAHDIN ANALYTICAL
METALS SECTION

The pHs of all samples that were tested by direct analysis in this analytical run were checked just prior to analysis and confirmed
to be <2. The time of preservation of these samples was checked in the "Measured Turbidity and Preservation of Incoming Samples" logbook to verify that they had been preserved at least 16 hours prior to analysis. These verifications were performed by
_____ (initals) on _____ (date).

STANDARDS USED:

Standard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
Cal. Blk/ICB/CCB	MW18081	10/01/2018	10/01/2019	0 ug/L
Standard 1	MW18105	10/10/2018	11/19/2018	Varies by Element
ICV	MW18068	09/20/2018	12/20/2018	Varies by Element
PQL	MW18115	10/11/2018	11/25/2018	Varies by Element
LRS1	MW18062	09/18/2018	12/18/2018	Varies by Element
LRS2	MW18097	10/05/2018	11/25/2018	Varies by Element
ICSA	MW18103	10/10/2018	10/16/2018	Varies by Element
ICSAB	MW18104	10/10/2018	10/16/2018	Varies by Element
CCV	MW18102	10/10/2018	11/19/2018	Varies by Element
Internal Standard	MW18078	09/28/2018	12/28/2018	0.4 mg/L (Li,Sc,Ge/Y,Tb,Bi)

Additional Comments and Notes:

- Ca failed in opening and closing PQL, accepted results that were greater than 10x the PQL value for Ca
- Ni failed in the closing PQL, for non DoD samples accepted Ni results that were greater than 10x the PQL value

JS 10.15.18

Dilutions: Some samples were diluted based on history or due to interfering element concentrations. Dilution preparations are as follows:

20x diln.: 0.5mL of sample(pipet M19) + 9.5mL of MW18081 (pipet M18)

25x serial diln.: 1.6mL of 5x diln. of sample(pipet M19) + 6.4mL of MW18081 (pipet M18)

5x diln.: 1.6mL of sample(pipet M18) + 6.4mL of MW18081 (pipet M18)

Post Spike: 0.08mL of MW17698 (pipet M16) into 5x diln. of sample (pipet M18)

(Unless otherwise specified)

INSTRUMENT RUNLOG

Instrument: AGILENT 7500

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
6020 TUNE	1	JLJ11E	10/11/2018	7:06:0 14:31	MD
200.8 TUNE	1	JLJ11E	10/11/2018	7:06:0 15:37	MD
Cal Blank	1	JLJ11E	10/11/2018	7:06:0 19:06	MD
Cal Std	1	JLJ11E	10/11/2018	7:10:0 19:10	MD
ICV	1	JLJ11E	10/11/2018	7:14:0 19:14	MD
ICB	1	JLJ11E	10/11/2018	7:18:0 19:18	MD
PQL	1	JLJ11E	10/11/2018	7:22:0 19:22	MD
RINSE	1	JLJ11E	10/11/2018	7:26:0 19:26	MD
ICSA	1	JLJ11E	10/11/2018	7:30:0 19:30	MD
ICSAB	1	JLJ11E	10/11/2018	7:34:0 19:34	MD
RINSE	1	JLJ11E	10/11/2018	7:38:0 19:38	MD
LRS1	1	JLJ11E	10/11/2018	7:43:0 19:43	MD
LRS2	1	JLJ11E	10/11/2018	7:46:0 19:46	MD
RINSE	1	JLJ11E	10/11/2018	7:50:0 19:50	MD
RINSE	1	JLJ11E	10/11/2018	7:54:0 19:54	MD
CCV	1	JLJ11E	10/11/2018	7:59:0 19:59	MD
CCB	1	JLJ11E	10/11/2018	8:03:0 20:03	MD
PBWLJ03IMW1	5	JLJ11E	10/11/2018	8:07:0 20:07	MD
LCSWLJ03IMW1	5	JLJ11E	10/11/2018	8:11:0 20:11	MD
SL9553-001	5	JLJ11E	10/11/2018	8:15:0 20:15	MD
SL9553-002	5	JLJ11E	10/11/2018	8:19:0 20:19	MD
SL9603-001	1	JLJ11E	10/11/2018	8:23:0 20:23	MD
PBSLJ05IMS1	5	JLJ11E	10/11/2018	8:27:0 20:27	MD
LCSOLJ05IMS1	5	JLJ11E	10/11/2018	8:31:0 20:31	MD
SL9573-001	5	JLJ11E	10/11/2018	8:35:0 20:35	MD
SL9573-002	5	JLJ11E	10/11/2018	8:39:0 20:39	MD
RINSE	1	JLJ11E	10/11/2018	8:43:0 20:43	MD
CCV	1	JLJ11E	10/11/2018	8:47:0 20:47	MD
CCB	1	JLJ11E	10/11/2018	8:51:0 20:51	MD
SL9573-002	20	JLJ11E	10/11/2018	8:56:0 20:56	MD
RINSE	1	JLJ11E	10/11/2018	9:00:0 21:00	MD
PBSLJ09IMS1	5	JLJ11E	10/11/2018	9:04:0 21:04	MD
LCSOLJ09IMS1	5	JLJ11E	10/11/2018	9:08:0 21:08	MD
SL9734-001	5	JLJ11E	10/11/2018	9:12:0 21:12	MD
SL9772-001	5	JLJ11E	10/11/2018	9:16:0 21:16	MD
SL9772-002	5	JLJ11E	10/11/2018	9:20:0 21:20	MD
SL9772-003	5	JLJ11E	10/11/2018	9:24:0 21:24	MD
SL9772-004	5	JLJ11E	10/11/2018	9:28:0 21:28	MD
RINSE	1	JLJ11E	10/11/2018	9:32:0 21:32	MD
CCV	1	JLJ11E	10/11/2018	9:36:0 21:36	MD
CCB	1	JLJ11E	10/11/2018	9:40:0 21:40	MD
PBWLJ09IMW1	5	JLJ11E	10/11/2018	9:45:0 21:45	MD
LCSWLJ09IMW1	5	JLJ11E	10/11/2018	9:49:0 21:49	MD
SL9735-001	5	JLJ11E	10/11/2018	9:53:0 21:53	MD

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL9735-002	5	JLJ11E	10/11/2018	9:57:0 21:57	MD
SL9735-003	5	JLJ11E	10/11/2018	10:01: 22:01	MD
SL9735-004	5	JLJ11E	10/11/2018	10:05: 22:05	MD
SL9735-005	5	JLJ11E	10/11/2018	10:09: 22:09	MD
SL9735-006	5	JLJ11E	10/11/2018	10:13: 22:13	MD
SL9735-007	5	JLJ11E	10/11/2018	10:18: 22:18	MD
SL9735-007L	25	JLJ11E	10/11/2018	10:22: 22:22	MD
CCV	1	JLJ11E	10/11/2018	10:26: 22:26	MD
CCB	1	JLJ11E	10/11/2018	10:30: 22:30	MD
SL9735-007A	5	JLJ11E	10/11/2018	10:34: 22:34	MD
SL9735-007S	5	JLJ11E	10/11/2018	10:38: 22:38	MD
SL9735-007P	5	JLJ11E	10/11/2018	10:42: 22:42	MD
SL9735-008	5	JLJ11E	10/11/2018	10:46: 22:46	MD
RINSE	1	JLJ11E	10/11/2018	10:50: 22:50	MD
PBWLJ10IMW1	1	JLJ11E	10/11/2018	10:54: 22:54	MD
LCSWLJ10IMW1	5	JLJ11E	10/11/2018	10:58: 22:58	MD
SL9664-001	1	JLJ11E	10/11/2018	11:02: 23:02	MD
SL9678-001	1	JLJ11E	10/11/2018	11:06: 23:06	MD
SL9693-001	1	JLJ11E	10/11/2018	11:11: 23:11	MD
CCV	1	JLJ11E	10/11/2018	11:15: 23:15	MD
CCB	1	JLJ11E	10/11/2018	11:19: 23:19	MD
SL9693-002	1	JLJ11E	10/11/2018	11:23: 23:23	MD
SL9693-003	1	JLJ11E	10/11/2018	11:27: 23:27	MD
SL9693-004	1	JLJ11E	10/11/2018	11:31: 23:31	MD
SL9693-004L	5	JLJ11E	10/11/2018	11:35: 23:35	MD
SL9693-004S	5	JLJ11E	10/11/2018	11:39: 23:39	MD
SL9693-004P	5	JLJ11E	10/11/2018	11:43: 23:43	MD
SL9729-001	1	JLJ11E	10/11/2018	11:47: 23:47	MD
RINSE	1	JLJ11E	10/11/2018	11:51: 23:51	MD
PBSLJ10IMS1	5	JLJ11E	10/11/2018	11:55: 23:55	MD
LCSOLJ10IMS1	5	JLJ11E	10/11/2018	11:59: 23:59	MD
CCV	1	JLJ11E	10/12/2018	12:04: 0:04	MD
CCB	1	JLJ11E	10/12/2018	12:08: 0:08	MD
SL9803-001	5	JLJ11E	10/12/2018	12:12: 0:12	MD
RINSE	1	JLJ11E	10/12/2018	12:16: 0:16	MD
PBWLJ11IMW2	1	JLJ11E	10/12/2018	12:20: 0:20	MD
LCSWLJ11IMW2	5	JLJ11E	10/12/2018	12:24: 0:24	MD
SL9868-001	1	JLJ11E	10/12/2018	12:28: 0:28	MD
SL9870-001	1	JLJ11E	10/12/2018	12:32: 0:32	MD
SL9870-003	1	JLJ11E	10/12/2018	12:36: 0:36	MD
SL9873-001	1	JLJ11E	10/12/2018	12:41: 0:41	MD
SL9873-002	1	JLJ11E	10/12/2018	12:45: 0:45	MD
SL9873-003	1	JLJ11E	10/12/2018	12:49: 0:49	MD
CCV	1	JLJ11E	10/12/2018	12:53: 0:53	MD
CCB	1	JLJ11E	10/12/2018	12:57: 0:57	MD
SL9873-004	1	JLJ11E	10/12/2018	1:01:0 1:01	MD
SL9873-005	1	JLJ11E	10/12/2018	1:05:0 1:05	MD

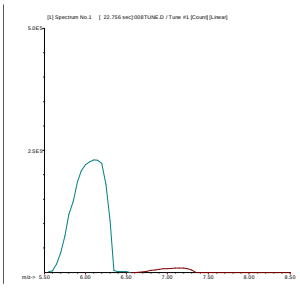
SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL9874-001	1	JLJ11E	10/12/2018	1:09:0 1:09	MD
SL9874-001L	5	JLJ11E	10/12/2018	1:14:0 1:14	MD
SL9874-001S	5	JLJ11E	10/12/2018	1:18:0 1:18	MD
SL9874-001P	5	JLJ11E	10/12/2018	1:22:0 1:22	MD
SL9884-001	1	JLJ11E	10/12/2018	1:26:0 1:26	MD
SL9884-002	1	JLJ11E	10/12/2018	1:30:0 1:30	MD
SL9884-003	1	JLJ11E	10/12/2018	1:34:0 1:34	MD
SL9884-004	1	JLJ11E	10/12/2018	1:38:0 1:38	MD
CCV	1	JLJ11E	10/12/2018	1:43:0 1:43	MD
CCB	1	JLJ11E	10/12/2018	1:47:0 1:47	MD
PBWLJ11IMW1	5	JLJ11E	10/12/2018	1:51:0 1:51	MD
LCSWLJ11IMW1	5	JLJ11E	10/12/2018	1:55:0 1:55	MD
SL9848-001	5	JLJ11E	10/12/2018	1:59:0 1:59	MD
SL9848-002	5	JLJ11E	10/12/2018	2:03:0 2:03	MD
SL9848-003	5	JLJ11E	10/12/2018	2:08:0 2:08	MD
SL9848-004	5	JLJ11E	10/12/2018	2:12:0 2:12	MD
SL9848-005	5	JLJ11E	10/12/2018	2:16:0 2:16	MD
SL9848-006	5	JLJ11E	10/12/2018	2:20:0 2:20	MD
SL9848-007	5	JLJ11E	10/12/2018	2:24:0 2:24	MD
SL9848-008	5	JLJ11E	10/12/2018	2:28:0 2:28	MD
CCV	1	JLJ11E	10/12/2018	2:33:0 2:33	MD
CCB	1	JLJ11E	10/12/2018	2:37:0 2:37	MD
SL9848-009	5	JLJ11E	10/12/2018	2:41:0 2:41	MD
SL9848-010	5	JLJ11E	10/12/2018	2:45:0 2:45	MD
SL9848-011	5	JLJ11E	10/12/2018	2:49:0 2:49	MD
SL9848-012	5	JLJ11E	10/12/2018	2:53:0 2:53	MD
SL9848-013	5	JLJ11E	10/12/2018	2:58:0 2:58	MD
SL9848-014	5	JLJ11E	10/12/2018	3:02:0 3:02	MD
SL9849-001	5	JLJ11E	10/12/2018	3:06:0 3:06	MD
SL9849-002	5	JLJ11E	10/12/2018	3:10:0 3:10	MD
SL9849-003	5	JLJ11E	10/12/2018	3:14:0 3:14	MD
SL9849-003L	25	JLJ11E	10/12/2018	3:18:0 3:18	MD
CCV	1	JLJ11E	10/12/2018	3:22:0 3:22	MD
CCB	1	JLJ11E	10/12/2018	3:27:0 3:27	MD
SL9849-003A	5	JLJ11E	10/12/2018	3:31:0 3:31	MD
SL9849-003S	5	JLJ11E	10/12/2018	3:35:0 3:35	MD
SL9849-003P	5	JLJ11E	10/12/2018	3:39:0 3:39	MD
SL9849-004	5	JLJ11E	10/12/2018	3:43:0 3:43	MD
SL9849-005	5	JLJ11E	10/12/2018	3:47:0 3:47	MD
SL9853-001	5	JLJ11E	10/12/2018	3:51:0 3:51	MD
RINSE	1	JLJ11E	10/12/2018	3:55:0 3:55	MD
RINSE	1	JLJ11E	10/12/2018	3:59:0 3:59	MD
CCV	1	JLJ11E	10/12/2018	4:04:0 4:04	MD
CCB	1	JLJ11E	10/12/2018	4:08:0 4:08	MD
PQL	1	JLJ11E	10/12/2018	4:12:0 4:12	MD
CCV	1	JLJ11E	10/12/2018	4:16:0 4:16	MD
CCB	1	JLJ11E	10/12/2018	4:20:0 4:20	MD

6020 QC Tune Report

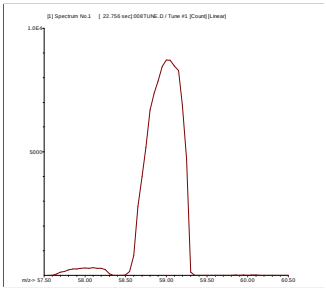
Data File: C:\ICPCHEM\1\DATA\JLJ11A.B\008TUNE.D
Date Acquired: Oct 11 2018 02:31 pm
Acq. Method: TN6020E.M
Operator: MD
Sample Name: 6020 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

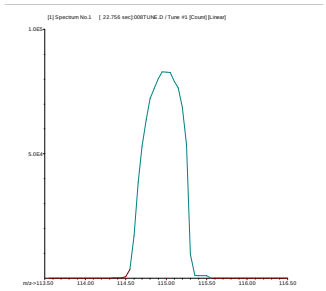
Element	Actual	Required	Flag
7 Li	4.31	5.00	
59 Co	4.26	5.00	
115 In	2.79	5.00	
205 Tl	2.62	5.00	



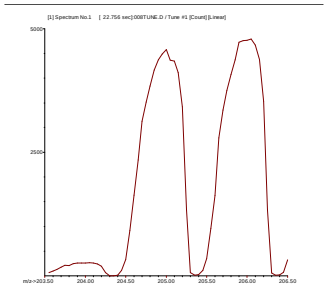
7 Li
Mass Calib.
Actual: 7.10
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:



59 Co
Mass Calib.
Actual: 59.05
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



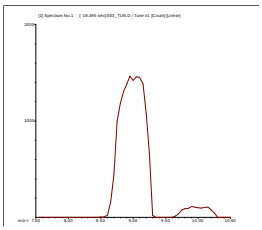
205 Tl
Mass Calib.
Actual: 205.00
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.70
Required: 0.90
Flag:

200.8 QC Tune Report

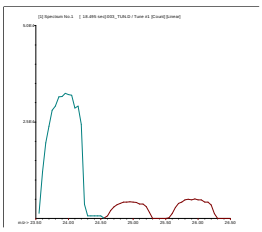
Data File: C:\ICPCHEM\1\DATA\JLJ11C.B\003_TUN.D
Date Acquired: Oct 11 2018 03:37 pm
Acq. Method: TN200_8E.M
Operator: MD
Sample Name: 200.8 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN200_8E.M

RSD (%)

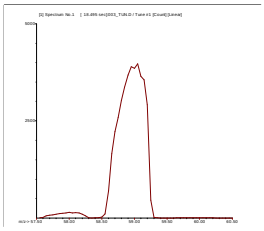
Element	Actual	Required	Flag
9 Be	2.97	5.00	
24 Mg	2.61	5.00	
59 Co	3.61	5.00	
115 In	2.61	5.00	
208 Pb	3.29	5.00	



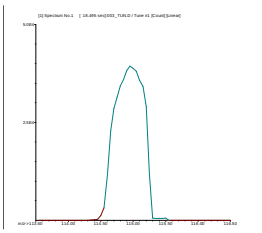
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90 - 9.10
Flag:
Peak Width
Actual: 0.60
Required: 1.00
Flag:



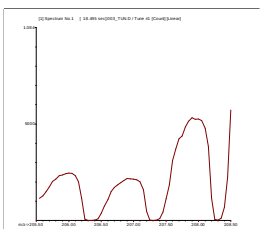
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90 - 24.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



115 In
Mass Calib.
Actual: 114.95
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90 - 208.10
Flag:
Peak Width
Actual: 0.00
Required: 1.00
Flag:

Tune Result: Pass

Katahdin Analytical Services 4000052

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.I
Date Acquired: Oct 11 2018 07:06 pm
Operator: MD
Sample Name: Cal Blank
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal Update: Oct 11 2018 07:08 pm
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	8477054.00	A	619500.00	7.31
9	Be	11.85	P	1.70	14.32
11	B	13524.06	P	477.30	3.53
23	Na	216640.41	P	14210.00	6.56
25	Mg	164.46	P	55.51	33.75
27	Al	4413.06	P	400.70	9.08
28	Si	5196645.00	A	45630.00	0.88
29	Si	1059772.00	A	6057.00	0.57
39	K	911231.69	A	13060.00	1.43
43	Ca	340.78	P	16.98	4.98
44	Ca	22224.64	P	620.40	2.79
45	Sc	2909174.00	A	140100.00	4.82
51	V	3512.23	P	954.30	27.17
52	Cr	11236.78	P	644.30	5.73
53	Cr	26943.67	P	1363.00	5.06
55	Mn	1297.88	P	90.77	6.99
56	Fe	1179337.00	A	19200.00	1.63
57	Fe	12996.61	P	511.60	3.94
59	Co	86.67	P	6.67	7.69
60	Ni	83.51	P	1.90	2.27
63	Cu	582.25	P	47.88	8.22
65	Cu	234.45	P	38.49	16.42
66	Zn	830.05	P	77.97	9.39
68	Zn	7035.20	P	239.30	3.40
72	Ge		P		
75	As	-276.24	P	198.20	71.75
82	Se	-107.61	P	35.00	32.53
88	Sr	151.87	P	73.99	48.72
89	Y	3117971.00	A	74710.00	2.40
98	Mo	44.56	P	16.76	37.61
107	Ag	162.23	P	10.18	6.28
109	Ag	135.56	P	15.40	11.36
111	Cd	1462.42	P	134.70	9.21
114	Cd	-240.97	P	19.64	8.15
115	In	2559716.00	A	118200.00	4.62
118	Sn	242.23	P	28.74	11.87
120	Sn	325.57	P	19.53	6.00
121	Sb	16.67	P	12.02	72.12
123	Sb	17.78	P	12.62	70.99
135	Ba	21.11	P	5.09	24.12
137	Ba	26.67	P	8.82	33.07
159	Tb	2784003.00	A	82120.00	2.95
182	W	14.44	P	8.39	58.08
203	Tl	8.89	P	3.85	43.30
205	Tl	25.56	P	18.36	71.84
208	Pb	313.35	P	6.67	2.13
209	Bi	1452805.00	A	15230.00	1.05
232	Th	57.78	P	13.47	23.31
238	U	21.11	P	10.18	48.22

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\015CALI.D\015CALI.D#
Date Acquired: Oct 11 2018 07:10 pm
Operator: MD
Sample Name: Cal Std
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal Update: Oct 11 2018 07:08 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	8067951.00	A	310300.00	3.85
9 Be	183687.30	P	8093.00	4.41
11 B	168201.91	P	1389.00	0.83
23 Na	126555600.00	A	3452000.00	2.73
25 Mg	10455240.00	A	406400.00	3.89
27 Al	9657204.00	A	312700.00	3.24
28 Si	10958520.00	A	75250.00	0.69
29 Si	1372629.00	A	3436.00	0.25
39 K	83485688.00	A	2767000.00	3.31
43 Ca	157986.00	P	2741.00	1.74
44 Ca	2440173.00	A	14530.00	0.60
45 Sc	2869973.00	A	25120.00	0.88
51 V	582469.50	A	10060.00	1.73
52 Cr	488981.09	P	15660.00	3.20
53 Cr	77844.61	P	2562.00	3.29
55 Mn	559111.81	A	12490.00	2.23
56 Fe	89386952.00	A	2712000.00	3.03
57 Fe	2081494.00	A	57700.00	2.77
59 Co	434603.41	M	6679.00	1.54
60 Ni	100023.50	P	4647.00	4.65
63 Cu	194121.50	P	7056.00	3.63
65 Cu	84131.23	P	2364.00	2.81
66 Zn	44847.78	P	1124.00	2.51
68 Zn	37764.90	P	729.20	1.93
72 Ge		P		
75 As	44883.44	P	1228.00	2.74
82 Se	3707.39	P	105.30	2.84
88 Sr	460354.19	A	1386.00	0.30
89 Y	3051732.00	A	2846.00	0.09
98 Mo	165955.09	P	2752.00	1.66
107 Ag	225565.41	P	5930.00	2.63
109 Ag	212154.91	P	5768.00	2.72
111 Cd	45999.11	P	1114.00	2.42
114 Cd	96200.97	P	2480.00	2.58
115 In	2474775.00	A	23170.00	0.94
118 Sn	120064.80	P	2024.00	1.69
120 Sn	166076.09	P	2941.00	1.77
121 Sb	151909.80	P	2812.00	1.85
123 Sb	114083.70	P	1936.00	1.70
135 Ba	35961.28	P	884.20	2.46
137 Ba	61192.42	P	1780.00	2.91
159 Tb	2744699.00	A	15720.00	0.57
182 W	122539.40	P	1733.00	1.41
203 Tl	102476.40	P	1394.00	1.36
205 Tl	247636.09	P	3010.00	1.22
208 Pb	346174.41	P	3440.00	0.99
209 Bi	1369111.00	A	20540.00	1.50
232 Th	388205.31	A	17650.00	4.55
238 U	391822.31	A	5316.00	1.36

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8067951.50	3.85	8477054.00	95.2	79.5 - 120.4	
45 Sc	2869973.00	0.88	2909174.30	98.7	79.5 - 120.4	
89 Y	3051731.80	0.09	3117971.30	97.9	79.5 - 120.4	
159 Tb	2744698.80	0.57	2784003.50	98.6	79.5 - 120.4	
209 Bi	1369111.40	1.50	1452804.80	94.2	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000054

ICV QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\016_ICV.D\016_ICV.D#
Date Acquired: Oct 11 2018 07:14 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: ICV
Misc Info:
Vial Number: 1202
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Dilution Factor: 1.00
QC Range (%): 89.499998 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	19.76	ppb	0.61	20	98.8	
11 B	19.84	ppb	3.68	20	99.2	
23 Na	3,991.	ppb	1.03	4,000	99.775	
25 Mg	4,010.	ppb	2.31	4,000	100.25	
27 Al	390.5	ppb	1.98	400	97.625	
28 Si	419.	ppb	4.00	400	104.75	
29 Si	412.	ppb	7.75	400	103	
39 K	3,993.	ppb	2.29	4,000	99.825	
43 Ca	4,038.	ppb	0.54	4,000	100.95	
44 Ca	4,145.	ppb	0.94	4,000	103.625	
51 V	20.06	ppb	2.59	20	100.3	
52 Cr	20.26	ppb	3.54	20	101.3	
53 Cr	12.69	ppb	13.77	20	63.45	
55 Mn	20.66	ppb	2.87	20	103.3	
56 Fe	3,943.	ppb	2.06	4,000	98.575	
57 Fe	4,057.	ppb	2.43	4,000	101.425	
59 Co	20.48	ppb	4.65	20	102.4	
60 Ni	19.73	ppb	6.06	20	98.65	
63 Cu	19.87	ppb	3.50	20	99.35	
65 Cu	19.59	ppb	2.45	20	97.95	
66 Zn	18.08	ppb	3.37	20	90.4	
68 Zn	18.46	ppb	1.42	20	92.3	
75 As	19.66	ppb	0.98	20	98.3	
82 Se	20.08	ppb	2.09	20	100.4	
88 Sr	21.49	ppb	1.99	20	107.45	
98 Mo	38.8	ppb	2.06	40	97	
107 Ag	20.31	ppb	3.21	20	101.55	
109 Ag	20.23	ppb	2.89	20	101.15	
111 Cd	19.7	ppb	3.95	20	98.5	
114 Cd	19.96	ppb	2.70	20	99.8	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	20.08	ppb	2.17	20	100.4	
120 Sn	19.89	ppb	0.68	20	99.45	
121 Sb	19.89	ppb	1.18	20	99.45	
123 Sb	19.94	ppb	1.44	20	99.7	
135 Ba	19.62	ppb	1.30	20	98.1	
137 Ba	20.11	ppb	0.21	20	100.55	
182 W	19.57	ppb	1.11	20	97.85	
203 Tl	20.49	ppb	2.28	20	102.45	
205 Tl	20.34	ppb	1.74	20	101.7	
208 Pb	19.82	ppb	2.23	20	99.1	
232 Th	21.94	ppb	2.85	20	109.7	
238 U	21.79	ppb	1.68	20	108.95	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8147810.50	4.79	8477054.00	96.1	80 - 120.4	
45 Sc	2892146.80	1.40	2909174.30	99.4	80 - 120.4	
89 Y	3121999.30	0.45	3117971.30	100.1	80 - 120.4	
159 Tb	2794667.80	1.36	2784003.50	100.4	80 - 120.4	
209 Bi	1417402.00	1.47	1452804.80	97.6	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000055

ICB QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\017_ICB.D\017_ICB.D#
Date Acquired: Oct 11 2018 07:18 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: ICB
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: 6-ICB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.002	ppb	34.79	1.00	
11 B	0.2942	ppb	81.58	1.00	
23 Na	0.2011	ppb	295.77	1.00	
25 Mg	-0.0028	ppb	1685.20	1.00	
27 Al	-0.0333	ppb	38.73	1.00	
28 Si	29.81	ppb	180.54	1.00	
29 Si	47.59	ppb	298.38	1.00	
39 K	2.297	ppb	34.27	1.00	
43 Ca	4.264	ppb	107.58	1.00	
44 Ca	0.989	ppb	237.61	1.00	
51 V	-0.0869	ppb	178.67	1.00	
52 Cr	-0.1575	ppb	13.96	1.00	
53 Cr	-7.419	ppb	7.32	1.00	
55 Mn	0.0043	ppb	200.58	1.00	
56 Fe	-3.371	ppb	84.55	1.00	
57 Fe	0.0287	ppb	5463.70	1.00	
59 Co	-0.0012	ppb	201.50	1.00	
60 Ni	-0.0162	ppb	27.54	1.00	
63 Cu	-0.0107	ppb	43.65	1.00	
65 Cu	-0.0154	ppb	43.55	1.00	
66 Zn	0.0425	ppb	47.15	1.00	
68 Zn	0.1718	ppb	262.11	1.00	
75 As	-0.0844	ppb	122.94	1.00	
82 Se	0.2133	ppb	107.55	1.00	
88 Sr	-0.0001	ppb	10678.00	1.00	
98 Mo	0.0196	ppb	18.17	1.00	
107 Ag	0.0074	ppb	52.04	1.00	
109 Ag	0.0063	ppb	99.03	1.00	
111 Cd	0.0221	ppb	521.29	1.00	
114 Cd	0.0108	ppb	76.96	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0166	ppb	83.95	1.00	
120 Sn	0.0235	ppb	30.35	1.00	
121 Sb	0.0076	ppb	64.91	1.00	
123 Sb	0.0054	ppb	73.14	1.00	
135 Ba	-0.0061	ppb	76.44	1.00	
137 Ba	-0.0044	ppb	215.37	1.00	
182 W	0.035	ppb	26.03	1.00	
203 Tl	0.0067	ppb	1.76	1.00	
205 Tl	0.0047	ppb	99.92	1.00	
208 Pb	0.0102	ppb	38.38	1.00	
232 Th	0.0958	ppb	18.75	1.00	
238 U	0.0008	ppb	197.03	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8141832.50	9.03	8477054.00	96.0	79.5 - 120	
45 Sc	2884967.30	3.25	2909174.30	99.2	79.5 - 120	
89 Y	3107986.00	1.52	3117971.30	99.7	79.5 - 120	
159 Tb	2782419.30	1.59	2784003.50	99.9	79.5 - 120	
209 Bi	1446806.80	1.08	1452804.80	99.6	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000056

PQL QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\018_PQL.D\018_PQL.D#
Date Acquired: Oct 11 2018 07:22 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: PQL
Misc Info:
Vial Number: 1302
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Dilution Factor: 1.00
QC Range (%): 69.599998 - 130.4

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	0.2006	ppb	5.31	0.20	100.3	
11 B	4.241	ppb	12.53	4.00	106.025	
23 Na	205.1	ppb	1.28	200.00	102.55	
25 Mg	20.83	ppb	2.14	20.00	104.15	
27 Al	21.71	ppb	1.63	20.00	108.55	
28 Si	136.2	ppb	40.86	100.00	136.2	
29 Si	134.6	ppb	112.11	100.00	134.6	Fail
39 K	201.	ppb	1.96	200.00	100.5	
43 Ca	30.81	ppb	5.86	20.00	154.05	
44 Ca	26.49	ppb	8.59	20.00	132.45	Fail
51 V	1.006	ppb	21.36	1.00	100.6	
52 Cr	0.9817	ppb	6.37	1.00	98.17	
53 Cr	-3.682	ppb	14.68	---	#VALUE!	
55 Mn	0.4703	ppb	2.37	0.40	117.575	
56 Fe	16.6	ppb	16.42	20.00	83	
57 Fe	23.91	ppb	6.10	20.00	119.55	
59 Co	0.2133	ppb	7.67	0.20	106.65	
60 Ni	0.4187	ppb	9.50	0.40	104.675	
63 Cu	0.6879	ppb	2.97	0.60	114.65	
65 Cu	0.6779	ppb	16.60	0.60	112.983	
66 Zn	2.678	ppb	4.29	2.00	133.9	Fail
68 Zn	2.381	ppb	19.29	2.00	119.05	
75 As	1.052	ppb	29.22	1.00	105.2	
82 Se	1.162	ppb	59.25	1.00	116.2	
88 Sr	1.181	ppb	5.26	1.00	118.1	
98 Mo	1.006	ppb	6.31	1.00	100.6	
107 Ag	0.2061	ppb	4.78	0.20	103.05	
109 Ag	0.2115	ppb	7.94	0.20	105.75	
111 Cd	0.1686	ppb	56.78	0.20	84.3	
114 Cd	0.1977	ppb	4.64	0.20	98.85	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	1.067	ppb	4.60	1.00	106.7	
120 Sn	1.048	ppb	2.70	1.00	104.8	
121 Sb	0.2092	ppb	6.92	0.20	104.6	
123 Sb	0.1994	ppb	2.79	0.20	99.7	
135 Ba	0.419	ppb	10.55	0.40	104.75	
137 Ba	0.4198	ppb	10.87	0.40	104.95	
182 W	1.047	ppb	3.82	1.00	104.7	
203 Tl	0.2061	ppb	8.80	0.20	103.05	
205 Tl	0.2066	ppb	2.48	0.20	103.3	
208 Pb	0.2231	ppb	8.28	0.20	111.55	
232 Th	0.2665	ppb	8.62	0.20	133.25	Fail
238 U	0.2187	ppb	1.43	0.20	109.35	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8123800.50	8.83	8477054.00	95.8	80 - 120.4	
45 Sc	2871027.00	4.09	2909174.30	98.7	80 - 120.4	
89 Y	3124749.80	2.28	3117971.30	100.2	80 - 120.4	
159 Tb	2797686.50	3.15	2784003.50	100.5	80 - 120.4	
209 Bi	1452391.40	1.00	1452804.80	100.0	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

4 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000057

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\019SMPL.D\019SMPL.D#
Date Acquired: Oct 11 2018 07:26 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0028	0.0028	ppb	93.79	100.	
11 B	0.0932	0.0932	ppb	65.19	1000.	
23 Na	-0.0566	-0.0566	ppb	1239.80	200000.	
25 Mg	0.0684	0.0684	ppb	181.27	200000.	
27 Al	0.1304	0.1304	ppb	31.05	200000.	
28 Si	11.41	11.41	ppb	138.65	#VALUE!	
29 Si	-17.69	-17.69	ppb	392.48	10000.	
39 K	1.016	1.016	ppb	163.88	200000.	
43 Ca	0.4795	0.4795	ppb	657.14	#VALUE!	
44 Ca	-1.965	-1.965	ppb	107.58	200000.	
51 V	-0.0678	-0.0678	ppb	108.27	1000.	
52 Cr	-0.048	-0.048	ppb	94.24	2000.	
53 Cr	-3.115	-3.115	ppb	20.08	#VALUE!	
55 Mn	0.0002	0.0002	ppb	3271.50	2000.	
56 Fe	-1.526	-1.526	ppb	85.58	#VALUE!	
57 Fe	3.149	3.149	ppb	79.45	100000.	
59 Co	0.0009	0.0009	ppb	152.72	1000.	
60 Ni	0.0079	0.0079	ppb	120.07	1000.	
63 Cu	0.004	0.004	ppb	202.13	#VALUE!	
65 Cu	-0.0119	-0.0119	ppb	16.42	2000.	
66 Zn	0.1083	0.1083	ppb	50.37	2000.	
68 Zn	-0.0983	-0.0983	ppb	41.93	#VALUE!	
75 As	-0.1501	-0.1501	ppb	15.28	1000.	
82 Se	0.2377	0.2377	ppb	90.16	1000.	
88 Sr	0.0104	0.0104	ppb	3.98	2000.	
98 Mo	0.0022	0.0022	ppb	241.22	1000.	
107 Ag	-0.0016	-0.0016	ppb	52.85	100.	
109 Ag	0.0016	0.0016	ppb	92.49	#VALUE!	
111 Cd	0.0387	0.0387	ppb	55.55	#VALUE!	
114 Cd	0.0009	0.0009	ppb	384.70	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0158	0.0158	ppb	52.20	1000.	
120 Sn	0.0117	0.0117	ppb	45.25	#VALUE!	
121 Sb	0.0022	0.0022	ppb	279.33	#VALUE!	
123 Sb	0.0039	0.0039	ppb	73.11	1000.	
135 Ba	-0.0032	-0.0032	ppb	158.03	2000.	
137 Ba	0.0062	0.0062	ppb	84.28	#VALUE!	
182 W	0.0089	0.0089	ppb	2.59	1000.	
203 Tl	0.0006	0.0006	ppb	485.65	1000.	
205 Tl	0.0041	0.0041	ppb	30.13	#VALUE!	
208 Pb	0.0046	0.0046	ppb	16.58	2000.	
232 Th	0.0382	0.0382	ppb	17.94	1000.	
238 U	0.0004	0.0004	ppb	111.24	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8629496.00	1.95	8477054.00	101.8	69.5 - 120	
45 Sc	2906183.50	1.71	2909174.30	99.9	69.5 - 120	
89 Y	3132539.30	1.09	3117971.30	100.5	69.5 - 120	
159 Tb	2799380.30	1.56	2784003.50	100.6	69.5 - 120	
209 Bi	1438099.30	1.07	1452804.80	99.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000058

ICS-A QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\020ICSA.D\020ICSA.D#
Date Acquired: Oct 11 2018 07:30 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: ICSA
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0035	ppb	28.19		
11 B	0.6274	ppb	64.04		
23 Na	91,910.	ppb	3.40		
25 Mg	90,520.	ppb	2.15		
27 Al	89,510.	ppb	5.59		
28 Si	13.77	ppb	354.54		
29 Si	55.85	ppb	166.82		
39 K	94,490.	ppb	2.72		
43 Ca	93,970.	ppb	1.13		
44 Ca	96,290.	ppb	0.11		
51 V	0.0413	ppb	583.86		
52 Cr	0.6503	ppb	18.88		
53 Cr	-5.452	ppb	50.94		
55 Mn	0.5583	ppb	8.67		
56 Fe	88,720.	ppb	5.27		
57 Fe	86,830.	ppb	4.79		
59 Co	0.3838	ppb	22.33		Fail-D
60 Ni	1.288	ppb	15.14		Fail
63 Cu	2.762	ppb	4.42		
65 Cu	1.644	ppb	2.92		
66 Zn	3.554	ppb	1.84		
68 Zn	2.274	ppb	22.04		
75 As	0.5993	ppb	29.59		
82 Se	0.2498	ppb	158.89		
88 Sr	1.064	ppb	4.09		
98 Mo	1,700.	ppb	2.00		
107 Ag	0.0232	ppb	25.12		
109 Ag	0.0248	ppb	34.32		
111 Cd	0.0425	ppb	585.57		
114 Cd	0.0153	ppb	513.36		
115 In	--------	---	--------		
118 Sn	0.0393	ppb	37.94		
120 Sn	0.0474	ppb	22.47		
121 Sb	0.0504	ppb	19.15		
123 Sb	0.0494	ppb	30.14		
135 Ba	0.1002	ppb	20.50		
137 Ba	0.0527	ppb	20.00		
182 W	0.2625	ppb	7.33		
203 Tl	0.0061	ppb	97.45		
205 Tl	0.0056	ppb	56.20		
208 Pb	0.1063	ppb	4.91		
232 Th	0.0834	ppb	39.15		
238 U	0.0013	ppb	47.62		

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	6702655.00	11.03	8477054.00	79.1	69.5 - 120.4	
45 Sc	2911319.00	1.46	2909174.30	100.1	69.5 - 120.4	
89 Y	3173830.30	1.70	3117971.30	101.8	69.5 - 120.4	
159 Tb	2799819.00	2.93	2784003.50	100.6	69.5 - 120.4	
209 Bi	1367611.30	8.73	1452804.80	94.1	69.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000059

ICS-AB QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\021ICSB.D\021ICSB.D#
Date Acquired: Oct 11 2018 07:34 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: ICSAB
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
9 Be	23.49	ppb	4.23	20.00	79.5 - 120	
11 B	23.82	ppb	5.33	20.00	79.5 - 120	
23 Na	92,420.	ppb	3.41	100000.00	79.5 - 120	
25 Mg	90,340.	ppb	5.12	100000.00	79.5 - 120	
27 Al	90,120.	ppb	6.82	100000.00	79.5 - 120	
28 Si	447.2	ppb	5.92	---	##### - #####	
29 Si	392.2	ppb	18.07	---	##### - #####	
39 K	94,040.	ppb	3.15	100000.00	79.5 - 120	
43 Ca	95,910.	ppb	0.50	100000.00	79.5 - 120	
44 Ca	98,010.	ppb	0.39	100000.00	79.5 - 120	
51 V	20.98	ppb	3.76	20.00	79.5 - 120	
52 Cr	20.73	ppb	5.10	20.00	79.5 - 120	
53 Cr	16.86	ppb	22.63	---	##### - #####	
55 Mn	20.53	ppb	6.22	20.00	79.5 - 120	
56 Fe	89,780.	ppb	5.23	100000.00	79.5 - 120	
57 Fe	86,600.	ppb	5.17	100000.00	79.5 - 120	
59 Co	19.28	ppb	6.51	20.00	79.5 - 120	
60 Ni	18.56	ppb	6.35	20.00	79.5 - 120	
63 Cu	20.54	ppb	3.46	20.00	79.5 - 120	
65 Cu	20.03	ppb	2.36	20.00	79.5 - 120	
66 Zn	21.03	ppb	2.02	20.00	79.5 - 120	
68 Zn	19.02	ppb	5.37	20.00	79.5 - 120	
75 As	23.	ppb	2.75	20.00	79.5 - 120	
82 Se	22.23	ppb	1.13	20.00	79.5 - 120	
88 Sr	23.93	ppb	1.46	20.00	79.5 - 120	
98 Mo	1,731.	ppb	1.88	2000.00	79.5 - 120	
107 Ag	18.39	ppb	3.92	20.00	79.5 - 120	
109 Ag	18.62	ppb	3.23	20.00	79.5 - 120	
111 Cd	19.13	ppb	4.59	20.00	79.5 - 120	
114 Cd	19.33	ppb	2.44	20.00	79.5 - 120	
115 In	--------	---	--------	---	##### - #####	
118 Sn	21.01	ppb	2.30	20.00	79.5 - 120	
120 Sn	20.9	ppb	2.68	20.00	79.5 - 120	
121 Sb	21.07	ppb	2.15	20.00	79.5 - 120	
123 Sb	21.19	ppb	2.78	20.00	79.5 - 120	
135 Ba	21.	ppb	2.66	20.00	79.5 - 120	
137 Ba	20.97	ppb	3.28	20.00	79.5 - 120	
182 W	23.18	ppb	2.55	20.00	79.5 - 120	
203 Tl	22.87	ppb	2.22	20.00	79.5 - 120	
205 Tl	22.45	ppb	1.68	20.00	79.5 - 120	
208 Pb	22.39	ppb	1.86	20.00	79.5 - 120	
232 Th	26.41	ppb	2.44	20.00	79.5 - 120	
238 U	26.07	ppb	2.29	20.00	79.5 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	6830332.00	7.70	8477054.00	80.6	69.5 - 120	
45 Sc	3008064.00	2.35	2909174.30	103.4	69.5 - 120	
89 Y	3272749.50	1.91	3117971.30	105.0	69.5 - 120	
159 Tb	2891068.50	2.23	2784003.50	103.8	69.5 - 120	
209 Bi	1431662.40	6.10	1452804.80	98.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000060

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\022SMPL.D\022SMPL.D#
Date Acquired: Oct 11 2018 07:38 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.002	0.002	ppb	74.42	100.	
11 B	0.4403	0.4403	ppb	65.43	1000.	
23 Na	1.434	1.434	ppb	76.57	200000.	
25 Mg	0.5123	0.5123	ppb	65.12	200000.	
27 Al	0.526	0.526	ppb	63.97	200000.	
28 Si	-27.51	-27.51	ppb	143.11	#VALUE!	
29 Si	-139.6	-139.6	ppb	71.54	10000.	LOW
39 K	-1.313	-1.313	ppb	16.02	200000.	
43 Ca	2.181	2.181	ppb	86.43	#VALUE!	
44 Ca	-0.5286	-0.5286	ppb	522.89	200000.	
51 V	-0.0226	-0.0226	ppb	393.71	1000.	
52 Cr	0.0201	0.0201	ppb	87.63	2000.	
53 Cr	-1.297	-1.297	ppb	10.55	#VALUE!	
55 Mn	-0.0033	-0.0033	ppb	102.66	2000.	
56 Fe	-3.481	-3.481	ppb	8.66	#VALUE!	
57 Fe	-0.6108	-0.6108	ppb	298.13	100000.	
59 Co	0.0002	0.0002	ppb	3046.60	1000.	
60 Ni	0.0062	0.0062	ppb	118.10	1000.	
63 Cu	0.1104	0.1104	ppb	13.25	#VALUE!	
65 Cu	0.098	0.098	ppb	8.10	2000.	
66 Zn	0.1767	0.1767	ppb	30.28	2000.	
68 Zn	-2.01	-2.01	ppb	22.96	#VALUE!	
75 As	0.0811	0.0811	ppb	205.90	1000.	
82 Se	0.3851	0.3851	ppb	109.48	1000.	
88 Sr	0.0068	0.0068	ppb	54.67	2000.	
98 Mo	0.2895	0.2895	ppb	10.66	1000.	
107 Ag	-0.0039	-0.0039	ppb	98.88	100.	
109 Ag	-0.0013	-0.0013	ppb	617.55	#VALUE!	
111 Cd	-0.146	-0.146	ppb	22.59	#VALUE!	
114 Cd	0.01	0.01	ppb	38.51	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0153	0.0153	ppb	128.11	1000.	
120 Sn	0.0107	0.0107	ppb	43.60	#VALUE!	
121 Sb	0.0117	0.0117	ppb	43.01	#VALUE!	
123 Sb	0.011	0.011	ppb	23.00	1000.	
135 Ba	0.0064	0.0064	ppb	80.03	2000.	
137 Ba	0.0098	0.0098	ppb	97.80	#VALUE!	
182 W	0.0115	0.0115	ppb	23.59	1000.	
203 Tl	0.0114	0.0114	ppb	52.60	1000.	
205 Tl	0.0029	0.0029	ppb	94.02	#VALUE!	
208 Pb	0.0004	0.0004	ppb	982.07	2000.	
232 Th	0.0408	0.0408	ppb	20.48	1000.	
238 U	0.0008	0.0008	ppb	163.22	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8465020.00	7.72	8477054.00	99.9	69.5 - 120	
45 Sc	3067894.50	2.21	2909174.30	105.5	69.5 - 120	
89 Y	3318277.00	1.99	3117971.30	106.4	69.5 - 120	
159 Tb	2884290.50	2.09	2784003.50	103.6	69.5 - 120	
209 Bi	1538485.60	0.76	1452804.80	105.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000061

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\023SMPL.D\023SMPL.D#
Date Acquired: Oct 11 2018 07:43 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: LRS1
Misc Info:
Vial Number: 4511
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	105.5	105.5	ppb	1.87	100.	>LDR
11 B	607.2	607.2	ppb	0.68	1000.	
23 Na	1.707	1.707	ppb	15.96	200000.	
25 Mg	2.011	2.011	ppb	4.87	200000.	
27 Al	1.127	1.127	ppb	4.50	200000.	
28 Si	-85.15	-85.15	ppb	7.70	#VALUE!	
29 Si	-132.6	-132.6	ppb	36.61	10000.	LOW
39 K	1.209	1.209	ppb	106.12	200000.	
43 Ca	2,875.	2,875.	ppb	0.74	#VALUE!	
44 Ca	1,105.	1,105.	ppb	1.07	200000.	
51 V	1,012.	1,012.	ppb	0.73	1000.	>LDR
52 Cr	1,960.	1,960.	ppb	0.78	2000.	
53 Cr	2,097.	2,097.	ppb	0.40	#VALUE!	
55 Mn	1,958.	1,958.	ppb	0.47	2000.	
56 Fe	-8.276	-8.276	ppb	20.05	#VALUE!	
57 Fe	-6.358	-6.358	ppb	23.69	100000.	
59 Co	974.1	974.1	ppb	0.63	1000.	
60 Ni	955.4	955.4	ppb	1.03	1000.	
63 Cu	1,958.	1,958.	ppb	0.93	#VALUE!	
65 Cu	1,983.	1,983.	ppb	0.90	2000.	
66 Zn	1,687.	1,687.	ppb	0.06	2000.	
68 Zn	1,740.	1,740.	ppb	0.62	#VALUE!	
75 As	965.8	965.8	ppb	1.00	1000.	
82 Se	1,060.	1,060.	ppb	2.19	1000.	>LDR
88 Sr	2,000.	2,000.	ppb	0.37	2000.	
98 Mo	883.	883.	ppb	0.50	1000.	
107 Ag	120.2	120.2	ppb	0.29	100.	>LDR
109 Ag	121.5	121.5	ppb	1.09	#VALUE!	
111 Cd	1,008.	1,008.	ppb	0.79	#VALUE!	
114 Cd	973.	973.	ppb	0.71	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	981.9	981.9	ppb	0.50	1000.	
120 Sn	966.2	966.2	ppb	0.26	#VALUE!	
121 Sb	940.6	940.6	ppb	0.86	#VALUE!	
123 Sb	950.2	950.2	ppb	0.76	1000.	
135 Ba	1,879.	1,879.	ppb	0.53	2000.	
137 Ba	1,875.	1,875.	ppb	0.46	#VALUE!	
182 W	892.6	892.6	ppb	0.61	1000.	
203 Tl	955.3	955.3	ppb	0.88	1000.	
205 Tl	931.7	931.7	ppb	0.74	#VALUE!	
208 Pb	1,831.	1,831.	ppb	0.58	2000.	
232 Th	990.4	990.4	ppb	0.13	1000.	
238 U	988.	988.	ppb	0.49	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8660715.00	0.93	8477054.00	102.2	69.5 - 120	
45 Sc	2974843.80	1.35	2909174.30	102.3	69.5 - 120	
89 Y	3167163.30	0.90	3117971.30	101.6	69.5 - 120	
159 Tb	2805859.00	1.00	2784003.50	100.8	69.5 - 120	
209 Bi	1477283.90	1.41	1452804.80	101.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

4 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000062

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\024SMPL.D\024SMPL.D#
Date Acquired: Oct 11 2018 07:46 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: LRS2
Misc Info:
Vial Number: 4512
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0287	0.0287	ppb	9.91	100.	
11 B	3.015	3.015	ppb	3.97	1000.	
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	180,000.	180,000.	ppb	1.41	200000.	
27 Al	----	--------	ppb	--------	200000.	>LDR
28 Si	9,448.	9,448.	ppb	4.89	#VALUE!	
29 Si	8,472.	8,472.	ppb	4.46	10000.	
39 K	186,600.	186,600.	ppb	1.45	200000.	
43 Ca	188,200.	188,200.	ppb	0.46	#VALUE!	
44 Ca	195,400.	195,400.	ppb	0.35	200000.	
51 V	-0.1225	-0.1225	ppb	118.78	1000.	
52 Cr	0.0923	0.0923	ppb	95.10	2000.	
53 Cr	-11.88	-11.88	ppb	11.57	#VALUE!	
55 Mn	7.707	7.707	ppb	4.93	2000.	
56 Fe	91,600.	91,600.	ppb	4.36	#VALUE!	
57 Fe	89,970.	89,970.	ppb	5.18	100000.	
59 Co	1.191	1.191	ppb	16.18	1000.	
60 Ni	3.274	3.274	ppb	17.60	1000.	
63 Cu	5.595	5.595	ppb	3.10	#VALUE!	
65 Cu	1.11	1.11	ppb	6.38	2000.	
66 Zn	3.181	3.181	ppb	5.82	2000.	
68 Zn	4.057	4.057	ppb	36.31	#VALUE!	
75 As	1.05	1.05	ppb	44.80	1000.	
82 Se	1.271	1.271	ppb	47.12	1000.	
88 Sr	6.362	6.362	ppb	0.27	2000.	
98 Mo	0.4144	0.4144	ppb	3.75	1000.	
107 Ag	0.0316	0.0316	ppb	8.56	100.	
109 Ag	0.0182	0.0182	ppb	23.06	#VALUE!	
111 Cd	-0.0414	-0.0414	ppb	333.58	#VALUE!	
114 Cd	0.0499	0.0499	ppb	41.28	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.4537	0.4537	ppb	16.33	1000.	
120 Sn	0.4569	0.4569	ppb	6.77	#VALUE!	
121 Sb	0.6315	0.6315	ppb	7.12	#VALUE!	
123 Sb	0.6431	0.6431	ppb	4.10	1000.	
135 Ba	0.3836	0.3836	ppb	8.39	2000.	
137 Ba	0.391	0.391	ppb	7.21	#VALUE!	
182 W	0.6338	0.6338	ppb	9.74	1000.	
203 Tl	0.049	0.049	ppb	27.34	1000.	
205 Tl	0.0496	0.0496	ppb	42.34	#VALUE!	
208 Pb	0.2173	0.2173	ppb	4.45	2000.	
232 Th	1.528	1.528	ppb	63.31	1000.	
238 U	0.0465	0.0465	ppb	16.23	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	6200085.50	8.46	8477054.00	73.1	69.5 - 120	
45 Sc	2873022.30	1.25	2909174.30	98.8	69.5 - 120	
89 Y	3099283.50	1.77	3117971.30	99.4	69.5 - 120	
159 Tb	2716856.30	2.19	2784003.50	97.6	69.5 - 120	
209 Bi	1284809.30	6.00	1452804.80	88.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000063

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\025SMPL.D\025SMPL.D#
Date Acquired: Oct 11 2018 07:50 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0022	0.0022	ppb	56.36	100.	
11 B	1.146	1.146	ppb	17.40	1000.	
23 Na	7.582	7.582	ppb	27.09	200000.	
25 Mg	1.075	1.075	ppb	35.99	200000.	
27 Al	1.008	1.008	ppb	46.84	200000.	
28 Si	46.36	46.36	ppb	75.65	#VALUE!	
29 Si	-77.55	-77.55	ppb	157.83	10000.	
39 K	9.105	9.105	ppb	7.22	200000.	
43 Ca	0.3671	0.3671	ppb	1252.00	#VALUE!	
44 Ca	0.8729	0.8729	ppb	205.98	200000.	
51 V	-0.0232	-0.0232	ppb	499.14	1000.	
52 Cr	0.1671	0.1671	ppb	34.66	2000.	
53 Cr	6.112	6.112	ppb	11.98	#VALUE!	
55 Mn	0.0115	0.0115	ppb	53.61	2000.	
56 Fe	4.996	4.996	ppb	34.97	#VALUE!	
57 Fe	5.462	5.462	ppb	63.00	100000.	
59 Co	-0.0015	-0.0015	ppb	56.81	1000.	
60 Ni	0.0665	0.0665	ppb	22.11	1000.	
63 Cu	0.2052	0.2052	ppb	15.18	#VALUE!	
65 Cu	0.1561	0.1561	ppb	30.43	2000.	
66 Zn	0.1743	0.1743	ppb	22.48	2000.	
68 Zn	-1.881	-1.881	ppb	22.00	#VALUE!	
75 As	-0.1421	-0.1421	ppb	152.01	1000.	
82 Se	-0.1572	-0.1572	ppb	172.14	1000.	
88 Sr	0.0158	0.0158	ppb	28.57	2000.	
98 Mo	0.0661	0.0661	ppb	31.57	1000.	
107 Ag	0.0012	0.0012	ppb	253.28	100.	
109 Ag	0.0005	0.0005	ppb	184.43	#VALUE!	
111 Cd	-0.0862	-0.0862	ppb	107.36	#VALUE!	
114 Cd	-0.0011	-0.0011	ppb	833.61	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.137	0.137	ppb	13.33	1000.	
120 Sn	0.1114	0.1114	ppb	10.59	#VALUE!	
121 Sb	0.0422	0.0422	ppb	37.17	#VALUE!	
123 Sb	0.0371	0.0371	ppb	41.55	1000.	
135 Ba	-0.0048	-0.0048	ppb	212.29	2000.	
137 Ba	0.0017	0.0017	ppb	210.43	#VALUE!	
182 W	0.1099	0.1099	ppb	25.20	1000.	
203 Tl	0.0065	0.0065	ppb	116.24	1000.	
205 Tl	0.0083	0.0083	ppb	26.71	#VALUE!	
208 Pb	0.0094	0.0094	ppb	36.97	2000.	
232 Th	0.1567	0.1567	ppb	11.75	1000.	
238 U	0.0049	0.0049	ppb	13.05	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8260934.00	7.80	8477054.00	97.5	69.5 - 120	
45 Sc	2975674.00	3.32	2909174.30	102.3	69.5 - 120	
89 Y	3141706.00	1.88	3117971.30	100.8	69.5 - 120	
159 Tb	2798961.30	2.52	2784003.50	100.5	69.5 - 120	
209 Bi	1466040.30	0.73	1452804.80	100.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000064

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\026SMPL.D\026SMPL.D#
Date Acquired: Oct 11 2018 07:54 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0018	0.0018	ppb	89.65	100.	
11 B	0.7744	0.7744	ppb	27.71	1000.	
23 Na	1.07	1.07	ppb	26.05	200000.	
25 Mg	0.3446	0.3446	ppb	11.70	200000.	
27 Al	0.2189	0.2189	ppb	13.65	200000.	
28 Si	18.13	18.13	ppb	199.06	#VALUE!	
29 Si	-71.26	-71.26	ppb	171.77	10000.	
39 K	4.309	4.309	ppb	61.75	200000.	
43 Ca	0.6451	0.6451	ppb	376.22	#VALUE!	
44 Ca	-1.483	-1.483	ppb	222.05	200000.	
51 V	-0.0042	-0.0042	ppb	2773.70	1000.	
52 Cr	0.0857	0.0857	ppb	41.31	2000.	
53 Cr	3.316	3.316	ppb	19.44	#VALUE!	
55 Mn	0.0073	0.0073	ppb	12.17	2000.	
56 Fe	-3.23	-3.23	ppb	70.16	#VALUE!	
57 Fe	-0.2753	-0.2753	ppb	1034.90	100000.	
59 Co	0.0002	0.0002	ppb	990.28	1000.	
60 Ni	0.0179	0.0179	ppb	77.87	1000.	
63 Cu	0.1669	0.1669	ppb	14.11	#VALUE!	
65 Cu	0.1238	0.1238	ppb	39.35	2000.	
66 Zn	0.1843	0.1843	ppb	47.36	2000.	
68 Zn	-2.223	-2.223	ppb	37.37	#VALUE!	
75 As	0.0396	0.0396	ppb	135.79	1000.	
82 Se	0.2463	0.2463	ppb	110.43	1000.	
88 Sr	0.0114	0.0114	ppb	19.42	2000.	
98 Mo	0.0294	0.0294	ppb	15.90	1000.	
107 Ag	0.0002	0.0002	ppb	1413.30	100.	
109 Ag	0.0042	0.0042	ppb	224.29	#VALUE!	
111 Cd	-0.1106	-0.1106	ppb	46.31	#VALUE!	
114 Cd	0.0069	0.0069	ppb	238.99	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0732	0.0732	ppb	11.00	1000.	
120 Sn	0.0795	0.0795	ppb	12.18	#VALUE!	
121 Sb	0.0208	0.0208	ppb	52.00	#VALUE!	
123 Sb	0.0172	0.0172	ppb	50.15	1000.	
135 Ba	-0.0061	-0.0061	ppb	206.64	2000.	
137 Ba	0.0115	0.0115	ppb	60.51	#VALUE!	
182 W	0.05	0.05	ppb	6.79	1000.	
203 Tl	0.0058	0.0058	ppb	127.97	1000.	
205 Tl	0.0026	0.0026	ppb	128.12	#VALUE!	
208 Pb	0.0088	0.0088	ppb	54.96	2000.	
232 Th	0.1015	0.1015	ppb	2.38	1000.	
238 U	0.0006	0.0006	ppb	130.10	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8298869.00	7.23	8477054.00	97.9	69.5 - 120	
45 Sc	2978931.50	3.49	2909174.30	102.4	69.5 - 120	
89 Y	3204121.50	2.33	3117971.30	102.8	69.5 - 120	
159 Tb	2811092.30	2.23	2784003.50	101.0	69.5 - 120	
209 Bi	1489658.10	0.47	1452804.80	102.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000065

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\027_CCV.D\027_CCV.D#
Date Acquired: Oct 11 2018 07:59 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.19	ppb	2.92	25	100.76	
11 B	25.2	ppb	7.66	25	100.8	
23 Na	4,917.	ppb	2.12	5,000	98.34	
25 Mg	4,836.	ppb	2.78	5,000	96.72	
27 Al	484.5	ppb	3.56	500	96.9	
28 Si	502.9	ppb	5.87	500	100.58	
29 Si	406.2	ppb	13.09	500	81.24	Fail
39 K	4,890.	ppb	2.47	5,000	97.8	
43 Ca	4,848.	ppb	1.63	5,000	96.96	
44 Ca	5,046.	ppb	0.49	5,000	100.92	
51 V	25.39	ppb	2.03	25	101.56	
52 Cr	25.34	ppb	3.15	25	101.36	
53 Cr	22.18	ppb	16.32	25	88.72	
55 Mn	25.9	ppb	3.86	25	103.6	
56 Fe	4,812.	ppb	2.86	5,000	96.24	
57 Fe	4,902.	ppb	4.37	5,000	98.04	
59 Co	25.23	ppb	5.08	25	100.92	
60 Ni	23.96	ppb	4.55	25	95.84	
63 Cu	24.62	ppb	2.98	25	98.48	
65 Cu	24.97	ppb	3.48	25	99.88	
66 Zn	21.58	ppb	1.88	25	86.32	Fail
68 Zn	20.15	ppb	5.61	25	80.6	
75 As	25.61	ppb	1.54	25	102.44	
82 Se	25.45	ppb	2.40	25	101.8	
88 Sr	26.98	ppb	2.32	25	107.92	
98 Mo	25.01	ppb	2.46	25	100.04	
107 Ag	25.12	ppb	2.84	25	100.48	
109 Ag	25.28	ppb	3.08	25	101.12	
111 Cd	24.75	ppb	3.32	25	99	
114 Cd	25.	ppb	2.99	25	100	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.03	ppb	2.68	25	100.12	
120 Sn	24.65	ppb	2.72	25	98.6	
121 Sb	25.17	ppb	2.16	25	100.68	
123 Sb	25.41	ppb	1.56	25	101.64	
135 Ba	25.	ppb	3.11	25	100	
137 Ba	25.25	ppb	3.30	25	101	
182 W	24.94	ppb	0.62	25	99.76	
203 Tl	25.6	ppb	3.95	25	102.4	
205 Tl	25.11	ppb	3.79	25	100.44	
208 Pb	25.05	ppb	3.37	25	100.2	
232 Th	27.29	ppb	2.53	25	109.16	
238 U	27.41	ppb	4.16	25	109.64	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8231308.00	8.28	8477054.00	97.1	80 - 120.4	
45 Sc	2973676.80	2.07	2909174.30	102.2	80 - 120.4	
89 Y	3184426.50	1.19	3117971.30	102.1	80 - 120.4	
159 Tb	2822103.00	0.81	2784003.50	101.4	80 - 120.4	
209 Bi	1469290.10	3.11	1452804.80	101.1	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000066

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\028_CCB.D\028_CCB.D#
Date Acquired: Oct 11 2018 08:03 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0019	ppb	36.42	1.00	
11 B	0.3025	ppb	72.46	1.00	
23 Na	-1.481	ppb	57.15	1.00	
25 Mg	0.3442	ppb	15.94	1.00	
27 Al	0.1777	ppb	31.70	1.00	
28 Si	30.17	ppb	70.04	1.00	
29 Si	-65.99	ppb	36.75	1.00	
39 K	1.898	ppb	52.49	1.00	
43 Ca	2.938	ppb	146.60	1.00	
44 Ca	-6.555	ppb	42.23	1.00	
51 V	-0.1552	ppb	44.41	1.00	
52 Cr	-0.117	ppb	7.65	1.00	
53 Cr	-5.27	ppb	6.44	1.00	
55 Mn	-0.0013	ppb	320.22	1.00	
56 Fe	-4.492	ppb	65.12	1.00	
57 Fe	-0.327	ppb	416.82	1.00	
59 Co	-0.001	ppb	273.58	1.00	
60 Ni	0.0015	ppb	165.56	1.00	
63 Cu	0.0812	ppb	7.02	1.00	
65 Cu	0.0723	ppb	2.26	1.00	
66 Zn	0.1009	ppb	52.89	1.00	
68 Zn	-2.155	ppb	19.51	1.00	
75 As	0.0254	ppb	768.72	1.00	
82 Se	0.6874	ppb	145.48	1.00	
88 Sr	0.0033	ppb	45.93	1.00	
98 Mo	0.0213	ppb	42.37	1.00	
107 Ag	0.004	ppb	55.22	1.00	
109 Ag	-0.0017	ppb	136.77	1.00	
111 Cd	-0.0578	ppb	97.13	1.00	
114 Cd	0.0063	ppb	88.50	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0422	ppb	10.43	1.00	
120 Sn	0.0459	ppb	27.02	1.00	
121 Sb	0.0187	ppb	73.01	1.00	
123 Sb	0.0179	ppb	45.81	1.00	
135 Ba	-0.0021	ppb	232.75	1.00	
137 Ba	0.0014	ppb	405.56	1.00	
182 W	0.0499	ppb	19.27	1.00	
203 Tl	0.0088	ppb	59.11	1.00	
205 Tl	0.0046	ppb	43.53	1.00	
208 Pb	0.0036	ppb	54.23	1.00	
232 Th	0.1484	ppb	11.79	1.00	
238 U	0.001	ppb	109.69	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8641725.00	2.77	8477054.00	101.9	79.5 - 120	
45 Sc	2997877.80	0.67	2909174.30	103.0	79.5 - 120	
89 Y	3205927.80	2.05	3117971.30	102.8	79.5 - 120	
159 Tb	2844938.30	1.19	2784003.50	102.2	79.5 - 120	
209 Bi	1495507.00	1.63	1452804.80	102.9	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000067

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\029SMPL.D\029SMPL.D#
Date Acquired: Oct 11 2018 08:07 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: PBWLJ03IMW1
Misc Info:
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0087	0.0017	ppb	107.37	100.	
11 B	3.8465	0.7693	ppb	11.90	1000.	
23 Na	17.545	3.509	ppb	18.13	200000.	
25 Mg	16.42	3.284	ppb	5.59	200000.	
27 Al	10.15	2.03	ppb	6.72	200000.	
28 Si	-36.84	-7.368	ppb	289.50	#VALUE!	
29 Si	-824.	-164.8	ppb	29.62	10000.	LOW
39 K	12.27	2.454	ppb	48.86	200000.	
43 Ca	17.48	3.496	ppb	145.39	#VALUE!	
44 Ca	18.79	3.758	ppb	110.88	200000.	
51 V	-0.676	-0.1352	ppb	158.36	1000.	
52 Cr	3.023	0.6046	ppb	9.48	2000.	
53 Cr	124.1	24.82	ppb	2.83	#VALUE!	
55 Mn	0.3407	0.0681	ppb	3.69	2000.	
56 Fe	-10.515	-2.103	ppb	60.63	#VALUE!	
57 Fe	-4.908	-0.9816	ppb	296.96	100000.	
59 Co	0.0353	0.0071	ppb	52.16	1000.	
60 Ni	0.1342	0.0268	ppb	22.36	1000.	
63 Cu	1.4705	0.2941	ppb	6.09	#VALUE!	
65 Cu	1.303	0.2606	ppb	5.34	2000.	
66 Zn	1.297	0.2594	ppb	28.00	2000.	
68 Zn	-12.04	-2.408	ppb	8.32	#VALUE!	
75 As	-0.646	-0.1292	ppb	24.17	1000.	
82 Se	-1.6705	-0.3341	ppb	160.76	1000.	
88 Sr	0.0298	0.006	ppb	50.84	2000.	
98 Mo	0.0912	0.0182	ppb	54.33	1000.	
107 Ag	0.0111	0.0022	ppb	228.40	100.	
109 Ag	0.0232	0.0046	ppb	70.40	#VALUE!	
111 Cd	-0.2147	-0.0429	ppb	13.06	#VALUE!	
114 Cd	0.0467	0.0093	ppb	202.55	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.606	0.1212	ppb	17.45	1000.	
120 Sn	0.5675	0.1135	ppb	14.67	#VALUE!	
121 Sb	0.1134	0.0227	ppb	12.70	#VALUE!	
123 Sb	0.0723	0.0145	ppb	10.10	1000.	
135 Ba	0.0912	0.0182	ppb	87.93	2000.	
137 Ba	0.0495	0.0099	ppb	95.78	#VALUE!	
182 W	0.1629	0.0326	ppb	40.56	1000.	
203 Tl	0.0288	0.0058	ppb	41.03	1000.	
205 Tl	0.0197	0.0039	ppb	49.65	#VALUE!	
208 Pb	0.0673	0.0135	ppb	26.51	2000.	
232 Th	1.067	0.2134	ppb	37.63	1000.	
238 U	0.0104	0.0021	ppb	29.97	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9200425.00	3.52	8477054.00	108.5	69.5 - 120	
45 Sc	3012133.00	1.72	2909174.30	103.5	69.5 - 120	
89 Y	3155775.50	0.51	3117971.30	101.2	69.5 - 120	
159 Tb	2790104.00	0.99	2784003.50	100.2	69.5 - 120	
209 Bi	1429987.00	0.13	1452804.80	98.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000068

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\030SMPL.D\030SMPL.D#
Date Acquired: Oct 11 2018 08:11 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: LCSWLJ03IMW1
Misc Info:
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	47.86	9.572	ppb	0.94	100.	
11 B	466.15	93.23	ppb	3.42	1000.	
23 Na	7,595.	1,519.	ppb	1.20	200000.	
25 Mg	5,300.	1,060.	ppb	0.46	200000.	
27 Al	2,081.5	416.3	ppb	0.15	200000.	
28 Si	909.	181.8	ppb	7.63	#VALUE!	
29 Si	101.8	20.36	ppb	244.40	10000.	
39 K	10,190.	2,038.	ppb	2.38	200000.	
43 Ca	3,340.5	668.1	ppb	5.94	#VALUE!	
44 Ca	2,991.	598.2	ppb	1.88	200000.	
51 V	498.5	99.7	ppb	0.50	1000.	
52 Cr	212.4	42.48	ppb	1.81	2000.	
53 Cr	345.75	69.15	ppb	4.40	#VALUE!	
55 Mn	504.5	100.9	ppb	1.27	2000.	
56 Fe	1,018.5	203.7	ppb	2.99	#VALUE!	
57 Fe	1,116.5	223.3	ppb	5.57	100000.	
59 Co	515.5	103.1	ppb	1.56	1000.	
60 Ni	506.5	101.3	ppb	2.86	1000.	
63 Cu	257.15	51.43	ppb	3.60	#VALUE!	
65 Cu	258.1	51.62	ppb	2.96	2000.	
66 Zn	428.3	85.66	ppb	2.25	2000.	
68 Zn	540.5	108.1	ppb	1.00	#VALUE!	
75 As	98.1	19.62	ppb	1.15	1000.	
82 Se	96.4	19.28	ppb	3.90	1000.	
88 Sr	506.	101.2	ppb	1.08	2000.	
98 Mo	97.85	19.57	ppb	2.08	1000.	
107 Ag	51.7	10.34	ppb	2.27	100.	
109 Ag	51.45	10.29	ppb	3.51	#VALUE!	
111 Cd	246.	49.2	ppb	2.53	#VALUE!	
114 Cd	245.2	49.04	ppb	2.55	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	506.	101.2	ppb	2.66	1000.	
120 Sn	501.	100.2	ppb	2.12	#VALUE!	
121 Sb	101.05	20.21	ppb	2.95	#VALUE!	
123 Sb	100.65	20.13	ppb	1.76	1000.	
135 Ba	2,051.	410.2	ppb	2.09	2000.	
137 Ba	1,931.5	386.3	ppb	1.24	#VALUE!	
182 W	99.45	19.89	ppb	1.99	1000.	
203 Tl	102.05	20.41	ppb	1.90	1000.	
205 Tl	101.3	20.26	ppb	2.35	#VALUE!	
208 Pb	101.8	20.36	ppb	2.48	2000.	
232 Th	108.35	21.67	ppb	0.63	1000.	
238 U	109.75	21.95	ppb	2.50	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9352765.00	1.97	8477054.00	110.3	69.5 - 120	
45 Sc	3014240.50	1.62	2909174.30	103.6	69.5 - 120	
89 Y	3162676.80	0.50	3117971.30	101.4	69.5 - 120	
159 Tb	2782049.80	0.68	2784003.50	99.9	69.5 - 120	
209 Bi	1414116.30	0.38	1452804.80	97.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000069

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\031SMPL.D\031SMPL.D#
Date Acquired: Oct 11 2018 08:15 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9553-001
Misc Info:
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.089	0.0178	ppb	28.98	100.	
11 B	8.575	1.715	ppb	15.89	1000.	
23 Na	1,419.	283.8	ppb	1.98	200000.	
25 Mg	955.	191.	ppb	2.04	200000.	
27 Al	17.79	3.558	ppb	4.59	200000.	
28 Si	2,534.5	506.9	ppb	3.41	#VALUE!	
29 Si	1,547.	309.4	ppb	9.41	10000.	
39 K	344.65	68.93	ppb	2.78	200000.	
43 Ca	6,600.	1,320.	ppb	0.92	#VALUE!	
44 Ca	6,875.	1,375.	ppb	0.89	200000.	
51 V	-0.09	-0.018	ppb	1338.50	1000.	
52 Cr	3.556	0.7112	ppb	8.14	2000.	
53 Cr	114.45	22.89	ppb	4.75	#VALUE!	
55 Mn	1.3	0.26	ppb	4.06	2000.	
56 Fe	-7.38	-1.476	ppb	200.54	#VALUE!	
57 Fe	63.6	12.72	ppb	42.77	100000.	
59 Co	0.055	0.011	ppb	22.32	1000.	
60 Ni	0.91	0.182	ppb	11.14	1000.	
63 Cu	2.1125	0.4225	ppb	2.43	#VALUE!	
65 Cu	1.9095	0.3819	ppb	14.25	2000.	
66 Zn	3.424	0.6848	ppb	9.36	2000.	
68 Zn	-6.1	-1.22	ppb	21.36	#VALUE!	
75 As	-0.1879	-0.0376	ppb	1235.00	1000.	
82 Se	-1.0705	-0.2141	ppb	595.05	1000.	
88 Sr	26.73	5.346	ppb	2.86	2000.	
98 Mo	0.0668	0.0134	ppb	56.86	1000.	
107 Ag	0.0187	0.0037	ppb	192.82	100.	
109 Ag	0.0063	0.0013	ppb	76.69	#VALUE!	
111 Cd	-0.8015	-0.1603	ppb	50.71	#VALUE!	
114 Cd	0.03	0.006	ppb	192.67	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.589	0.1178	ppb	18.74	1000.	
120 Sn	0.6085	0.1217	ppb	5.61	#VALUE!	
121 Sb	0.1089	0.0218	ppb	46.79	#VALUE!	
123 Sb	0.1284	0.0257	ppb	38.85	1000.	
135 Ba	9.095	1.819	ppb	5.28	2000.	
137 Ba	9.47	1.894	ppb	4.48	#VALUE!	
182 W	0.1437	0.0287	ppb	22.90	1000.	
203 Tl	0.0593	0.0119	ppb	7.45	1000.	
205 Tl	0.0205	0.0041	ppb	70.52	#VALUE!	
208 Pb	0.0905	0.0181	ppb	22.14	2000.	
232 Th	1.4985	0.2997	ppb	46.25	1000.	
238 U	0.0358	0.0072	ppb	13.91	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8752282.00	5.65	8477054.00	103.2	69.5 - 120	
45 Sc	2992035.80	2.06	2909174.30	102.8	69.5 - 120	
89 Y	3162666.30	1.11	3117971.30	101.4	69.5 - 120	
159 Tb	2782907.00	1.77	2784003.50	100.0	69.5 - 120	
209 Bi	1442855.60	1.08	1452804.80	99.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000070

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\032SMPL.D\032SMPL.D#
Date Acquired: Oct 11 2018 08:19 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9553-002
Misc Info:
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0544	0.0109	ppb	20.29	100.	
11 B	6.965	1.393	ppb	23.37	1000.	
23 Na	1,512.	302.4	ppb	0.81	200000.	
25 Mg	880.	176.	ppb	1.92	200000.	
27 Al	46.775	9.355	ppb	5.35	200000.	
28 Si	2,847.5	569.5	ppb	8.42	#VALUE!	
29 Si	1,637.5	327.5	ppb	38.93	10000.	
39 K	400.35	80.07	ppb	3.20	200000.	
43 Ca	6,890.	1,378.	ppb	0.49	#VALUE!	
44 Ca	7,340.	1,468.	ppb	0.54	200000.	
51 V	1.5915	0.3183	ppb	38.71	1000.	
52 Cr	3.7075	0.7415	ppb	13.92	2000.	
53 Cr	130.15	26.03	ppb	7.67	#VALUE!	
55 Mn	69.4	13.88	ppb	4.68	2000.	
56 Fe	197.05	39.41	ppb	3.36	#VALUE!	
57 Fe	282.45	56.49	ppb	2.74	100000.	
59 Co	0.508	0.1016	ppb	10.63	1000.	
60 Ni	1.2985	0.2597	ppb	11.54	1000.	
63 Cu	1.487	0.2974	ppb	10.68	#VALUE!	
65 Cu	1.2915	0.2583	ppb	5.85	2000.	
66 Zn	4.6345	0.9269	ppb	8.00	2000.	
68 Zn	-3.931	-0.7862	ppb	22.20	#VALUE!	
75 As	0.978	0.1956	ppb	299.69	1000.	
82 Se	0.3216	0.0643	ppb	1303.70	1000.	
88 Sr	32.435	6.487	ppb	2.91	2000.	
98 Mo	0.0393	0.0079	ppb	10.80	1000.	
107 Ag	0.0241	0.0048	ppb	198.90	100.	
109 Ag	0.0259	0.0052	ppb	147.48	#VALUE!	
111 Cd	-0.7475	-0.1495	ppb	73.11	#VALUE!	
114 Cd	0.1104	0.0221	ppb	60.22	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.492	0.0984	ppb	9.19	1000.	
120 Sn	0.515	0.103	ppb	10.04	#VALUE!	
121 Sb	0.1099	0.022	ppb	32.05	#VALUE!	
123 Sb	0.1013	0.0203	ppb	38.71	1000.	
135 Ba	13.12	2.624	ppb	1.49	2000.	
137 Ba	13.69	2.738	ppb	3.85	#VALUE!	
182 W	0.0604	0.0121	ppb	35.22	1000.	
203 Tl	0.0429	0.0086	ppb	53.54	1000.	
205 Tl	0.0051	0.001	ppb	287.15	#VALUE!	
208 Pb	0.1532	0.0306	ppb	9.21	2000.	
232 Th	0.4529	0.0906	ppb	15.71	1000.	
238 U	0.0113	0.0023	ppb	25.86	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8731826.00	7.07	8477054.00	103.0	69.5 - 120	
45 Sc	3020228.00	3.47	2909174.30	103.8	69.5 - 120	
89 Y	3174140.30	0.70	3117971.30	101.8	69.5 - 120	
159 Tb	2794076.50	1.54	2784003.50	100.4	69.5 - 120	
209 Bi	1455615.10	2.14	1452804.80	100.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000071

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\033SMPL.D\033SMPL.D#
Date Acquired: Oct 11 2018 08:23 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9603-001
Misc Info: LJ05IMW1
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0038	0.0038	ppb	44.26	100.	
11 B	63.9	63.9	ppb	5.10	1000.	
23 Na	110,000.	110,000.	ppb	1.85	200000.	
25 Mg	17,240.	17,240.	ppb	1.31	200000.	
27 Al	396.8	396.8	ppb	1.89	200000.	
28 Si	2,489.	2,489.	ppb	0.55	#VALUE!	
29 Si	2,333.	2,333.	ppb	1.68	10000.	
39 K	----	--------	ppb	--------	200000.	>LDR
43 Ca	41,120.	41,120.	ppb	0.97	#VALUE!	
44 Ca	41,290.	41,290.	ppb	0.35	200000.	
51 V	0.4181	0.4181	ppb	36.98	1000.	
52 Cr	0.1381	0.1381	ppb	38.97	2000.	
53 Cr	-6.936	-6.936	ppb	8.30	#VALUE!	
55 Mn	4.523	4.523	ppb	5.11	2000.	
56 Fe	37.56	37.56	ppb	17.80	#VALUE!	
57 Fe	384.7	384.7	ppb	12.03	100000.	
59 Co	1.246	1.246	ppb	6.14	1000.	
60 Ni	3.409	3.409	ppb	6.32	1000.	
63 Cu	4.917	4.917	ppb	4.08	#VALUE!	
65 Cu	2.587	2.587	ppb	1.01	2000.	
66 Zn	2.83	2.83	ppb	2.62	2000.	
68 Zn	5.285	5.285	ppb	14.38	#VALUE!	
75 As	1.018	1.018	ppb	11.65	1000.	
82 Se	-0.0711	-0.0711	ppb	230.37	1000.	
88 Sr	173.9	173.9	ppb	0.27	2000.	
98 Mo	0.0351	0.0351	ppb	28.10	1000.	
107 Ag	0.0038	0.0038	ppb	8.24	100.	
109 Ag	-0.0002	-0.0002	ppb	4106.30	#VALUE!	
111 Cd	0.0204	0.0204	ppb	278.37	#VALUE!	
114 Cd	0.0498	0.0498	ppb	26.07	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0648	0.0648	ppb	19.42	1000.	
120 Sn	0.0584	0.0584	ppb	18.14	#VALUE!	
121 Sb	0.0753	0.0753	ppb	5.67	#VALUE!	
123 Sb	0.0563	0.0563	ppb	6.57	1000.	
135 Ba	0.3064	0.3064	ppb	13.68	2000.	
137 Ba	0.3832	0.3832	ppb	11.40	#VALUE!	
182 W	0.0167	0.0167	ppb	30.02	1000.	
203 Tl	0.0102	0.0102	ppb	57.97	1000.	
205 Tl	0.007	0.007	ppb	43.35	#VALUE!	
208 Pb	0.0443	0.0443	ppb	9.57	2000.	
232 Th	0.0563	0.0563	ppb	6.87	1000.	
238 U	0.0036	0.0036	ppb	35.73	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	6871665.50	5.68	8477054.00	81.1	69.5 - 120	
45 Sc	2973253.00	1.22	2909174.30	102.2	69.5 - 120	
89 Y	3223737.50	2.13	3117971.30	103.4	69.5 - 120	
159 Tb	2824041.80	1.26	2784003.50	101.4	69.5 - 120	
209 Bi	1354370.80	3.84	1452804.80	93.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000072

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\034SMPL.D\034SMPL.D#
Date Acquired: Oct 11 2018 08:27 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: PBSLJ05IMS1
Misc Info:
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0045	0.0009	ppb	47.64	100.	
11 B	4.6515	0.9303	ppb	17.06	1000.	
23 Na	40.86	8.172	ppb	27.30	200000.	
25 Mg	21.58	4.316	ppb	3.96	200000.	
27 Al	12.735	2.547	ppb	1.84	200000.	
28 Si	105.45	21.09	ppb	22.70	#VALUE!	
29 Si	-68.3	-13.66	ppb	252.56	10000.	
39 K	85.5	17.1	ppb	9.24	200000.	
43 Ca	62.5	12.5	ppb	65.23	#VALUE!	
44 Ca	55.8	11.16	ppb	32.48	200000.	
51 V	0.4682	0.0936	ppb	100.00	1000.	
52 Cr	4.537	0.9074	ppb	5.04	2000.	
53 Cr	174.05	34.81	ppb	2.68	#VALUE!	
55 Mn	0.5595	0.1119	ppb	12.96	2000.	
56 Fe	48.445	9.689	ppb	13.26	#VALUE!	
57 Fe	25.99	5.198	ppb	28.01	100000.	
59 Co	0.0166	0.0033	ppb	7.74	1000.	
60 Ni	0.7195	0.1439	ppb	18.01	1000.	
63 Cu	1.246	0.2492	ppb	3.33	#VALUE!	
65 Cu	1.145	0.229	ppb	5.06	2000.	
66 Zn	1.632	0.3264	ppb	20.51	2000.	
68 Zn	-10.605	-2.121	ppb	9.26	#VALUE!	
75 As	0.1524	0.0305	ppb	623.56	1000.	
82 Se	-1.341	-0.2682	ppb	190.23	1000.	
88 Sr	0.2082	0.0416	ppb	17.54	2000.	
98 Mo	0.1045	0.0209	ppb	13.84	1000.	
107 Ag	0.0297	0.0059	ppb	19.80	100.	
109 Ag	-0.0088	-0.0018	ppb	75.47	#VALUE!	
111 Cd	0.1373	0.0275	ppb	257.65	#VALUE!	
114 Cd	0.0923	0.0185	ppb	28.05	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	32.285	6.457	ppb	2.67	1000.	
120 Sn	32.725	6.545	ppb	3.57	#VALUE!	
121 Sb	0.0558	0.0112	ppb	9.14	#VALUE!	
123 Sb	0.0775	0.0155	ppb	48.58	1000.	
135 Ba	0.0911	0.0182	ppb	103.24	2000.	
137 Ba	0.2326	0.0465	ppb	22.51	#VALUE!	
182 W	0.0542	0.0108	ppb	74.20	1000.	
203 Tl	0.0205	0.0041	ppb	55.89	1000.	
205 Tl	0.0192	0.0038	ppb	34.27	#VALUE!	
208 Pb	0.0896	0.0179	ppb	19.80	2000.	
232 Th	0.1726	0.0345	ppb	21.59	1000.	
238 U	0.0028	0.0006	ppb	150.48	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8517252.00	2.72	8477054.00	100.5	69.5 - 120	
45 Sc	2963261.30	1.83	2909174.30	101.9	69.5 - 120	
89 Y	3162353.00	1.55	3117971.30	101.4	69.5 - 120	
159 Tb	2788276.00	1.45	2784003.50	100.2	69.5 - 120	
209 Bi	1448010.90	0.88	1452804.80	99.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000073

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\035SMPL.D\035SMPL.D#
Date Acquired: Oct 11 2018 08:31 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: LCSOLJ05IMS1
Misc Info:
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	47.7	9.54	ppb	4.03	100.	
11 B	458.8	91.76	ppb	3.34	1000.	
23 Na	7,665.	1,533.	ppb	0.73	200000.	
25 Mg	5,230.	1,046.	ppb	1.30	200000.	
27 Al	2,043.	408.6	ppb	0.88	200000.	
28 Si	840.	168.	ppb	8.56	#VALUE!	
29 Si	377.7	75.54	ppb	66.22	10000.	
39 K	10,105.	2,021.	ppb	1.50	200000.	
43 Ca	3,226.	645.2	ppb	2.09	#VALUE!	
44 Ca	2,995.5	599.1	ppb	0.29	200000.	
51 V	491.65	98.33	ppb	0.96	1000.	
52 Cr	211.7	42.34	ppb	2.27	2000.	
53 Cr	366.85	73.37	ppb	5.55	#VALUE!	
55 Mn	499.75	99.95	ppb	1.43	2000.	
56 Fe	1,029.5	205.9	ppb	3.34	#VALUE!	
57 Fe	1,135.5	227.1	ppb	4.23	100000.	
59 Co	510.	102.	ppb	1.90	1000.	
60 Ni	503.	100.6	ppb	2.80	1000.	
63 Cu	255.7	51.14	ppb	3.76	#VALUE!	
65 Cu	257.4	51.48	ppb	1.48	2000.	
66 Zn	432.8	86.56	ppb	2.59	2000.	
68 Zn	542.5	108.5	ppb	3.11	#VALUE!	
75 As	100.2	20.04	ppb	1.10	1000.	
82 Se	95.35	19.07	ppb	2.96	1000.	
88 Sr	502.5	100.5	ppb	0.24	2000.	
98 Mo	96.65	19.33	ppb	2.19	1000.	
107 Ag	51.3	10.26	ppb	1.96	100.	
109 Ag	51.4	10.28	ppb	2.42	#VALUE!	
111 Cd	245.15	49.03	ppb	2.76	#VALUE!	
114 Cd	245.8	49.16	ppb	2.01	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	536.5	107.3	ppb	1.85	1000.	
120 Sn	533.	106.6	ppb	1.85	#VALUE!	
121 Sb	98.95	19.79	ppb	2.92	#VALUE!	
123 Sb	100.6	20.12	ppb	1.39	1000.	
135 Ba	2,053.5	410.7	ppb	2.38	2000.	
137 Ba	1,940.	388.	ppb	0.57	#VALUE!	
182 W	98.6	19.72	ppb	1.93	1000.	
203 Tl	101.3	20.26	ppb	3.23	1000.	
205 Tl	100.05	20.01	ppb	2.28	#VALUE!	
208 Pb	100.85	20.17	ppb	3.36	2000.	
232 Th	100.35	20.07	ppb	2.08	1000.	
238 U	108.4	21.68	ppb	2.83	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9055395.00	3.27	8477054.00	106.8	69.5 - 120	
45 Sc	2989910.00	0.84	2909174.30	102.8	69.5 - 120	
89 Y	3142078.50	0.77	3117971.30	100.8	69.5 - 120	
159 Tb	2777897.30	0.46	2784003.50	99.8	69.5 - 120	
209 Bi	1420275.10	0.75	1452804.80	97.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000074

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\036SMPL.D\036SMPL.D#
Date Acquired: Oct 11 2018 08:35 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9573-001
Misc Info:
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	3.1935	0.6387	ppb	2.29	100.	
11 B	61.25	12.25	ppb	3.20	1000.	
23 Na	42,060.	8,412.	ppb	3.56	200000.	
25 Mg	34,495.	6,899.	ppb	2.45	200000.	
27 Al	62,000.	12,400.	ppb	4.16	200000.	
28 Si	2,216.	443.2	ppb	7.51	#VALUE!	
29 Si	1,352.	270.4	ppb	20.12	10000.	
39 K	7,420.	1,484.	ppb	2.14	200000.	
43 Ca	561,000.	112,200.	ppb	0.59	#VALUE!	
44 Ca	578,500.	115,700.	ppb	0.26	200000.	
51 V	113.05	22.61	ppb	3.01	1000.	
52 Cr	120.45	24.09	ppb	3.20	2000.	
53 Cr	193.3	38.66	ppb	8.65	#VALUE!	
55 Mn	1,564.	312.8	ppb	3.04	2000.	
56 Fe	138,450.	27,690.	ppb	3.94	#VALUE!	
57 Fe	140,150.	28,030.	ppb	5.20	100000.	
59 Co	39.275	7.855	ppb	7.81	1000.	
60 Ni	90.5	18.1	ppb	6.47	1000.	
63 Cu	93.45	18.69	ppb	2.92	#VALUE!	
65 Cu	95.65	19.13	ppb	4.10	2000.	
66 Zn	362.7	72.54	ppb	2.08	2000.	
68 Zn	332.85	66.57	ppb	1.77	#VALUE!	
75 As	65.05	13.01	ppb	3.65	1000.	
82 Se	5.86	1.172	ppb	31.78	1000.	
88 Sr	3,612.	722.4	ppb	0.13	2000.	
98 Mo	1.554	0.3108	ppb	1.67	1000.	
107 Ag	0.8205	0.1641	ppb	3.62	100.	
109 Ag	0.777	0.1554	ppb	2.77	#VALUE!	
111 Cd	0.875	0.175	ppb	51.38	#VALUE!	
114 Cd	0.1582	0.0316	ppb	92.98	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	40.605	8.121	ppb	3.83	1000.	
120 Sn	40.015	8.003	ppb	2.78	#VALUE!	
121 Sb	0.726	0.1452	ppb	6.23	#VALUE!	
123 Sb	0.856	0.1712	ppb	5.32	1000.	
135 Ba	109.65	21.93	ppb	0.86	2000.	
137 Ba	110.	22.	ppb	1.83	#VALUE!	
182 W	0.4762	0.0952	ppb	7.81	1000.	
203 Tl	0.5345	0.1069	ppb	8.65	1000.	
205 Tl	0.532	0.1064	ppb	4.81	#VALUE!	
208 Pb	133.55	26.71	ppb	1.10	2000.	
232 Th	51.05	10.21	ppb	4.91	1000.	
238 U	7.765	1.553	ppb	2.50	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8629718.00	2.98	8477054.00	101.8	69.5 - 120	
45 Sc	2964642.50	1.39	2909174.30	101.9	69.5 - 120	
89 Y	3195254.00	1.84	3117971.30	102.5	69.5 - 120	
159 Tb	2699526.50	1.26	2784003.50	97.0	69.5 - 120	
209 Bi	1339048.50	3.00	1452804.80	92.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000075

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\037SMPL.D\037SMPL.D#
Date Acquired: Oct 11 2018 08:39 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9573-002
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	2.5955	0.5191	ppb	5.17	100.	
11 B	145.1	29.02	ppb	3.22	1000.	
23 Na	29,915.	5,983.	ppb	0.39	200000.	
25 Mg	44,830.	8,966.	ppb	1.21	200000.	
27 Al	64,100.	12,820.	ppb	0.77	200000.	
28 Si	1,421.5	284.3	ppb	4.84	#VALUE!	
29 Si	403.2	80.64	ppb	71.23	10000.	
39 K	6,290.	1,258.	ppb	1.60	200000.	
43 Ca	248,300.	49,660.	ppb	1.65	#VALUE!	
44 Ca	249,100.	49,820.	ppb	1.30	200000.	
51 V	168.4	33.68	ppb	2.04	1000.	
52 Cr	157.25	31.45	ppb	2.09	2000.	
53 Cr	204.95	40.99	ppb	4.57	#VALUE!	
55 Mn	2,718.5	543.7	ppb	2.29	2000.	
56 Fe	280,800.	56,160.	ppb	2.01	#VALUE!	
57 Fe	278,400.	55,680.	ppb	2.41	100000.	
59 Co	75.6	15.12	ppb	2.86	1000.	
60 Ni	123.35	24.67	ppb	3.21	1000.	
63 Cu	304.4	60.88	ppb	2.04	#VALUE!	
65 Cu	306.6	61.32	ppb	2.44	2000.	
66 Zn	859.	171.8	ppb	2.30	2000.	
68 Zn	801.	160.2	ppb	1.51	#VALUE!	
75 As	175.9	35.18	ppb	0.30	1000.	
82 Se	4.9995	0.9999	ppb	27.53	1000.	
88 Sr	2,057.5	411.5	ppb	0.30	2000.	
98 Mo	12.975	2.595	ppb	2.15	1000.	
107 Ag	0.783	0.1566	ppb	8.07	100.	
109 Ag	0.7875	0.1575	ppb	4.58	#VALUE!	
111 Cd	1.488	0.2976	ppb	18.89	#VALUE!	
114 Cd	0.4291	0.0858	ppb	32.55	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	48.95	9.79	ppb	0.98	1000.	
120 Sn	47.76	9.552	ppb	1.30	#VALUE!	
121 Sb	24.165	4.833	ppb	1.12	#VALUE!	
123 Sb	23.89	4.778	ppb	2.38	1000.	
135 Ba	129.25	25.85	ppb	0.21	2000.	
137 Ba	129.3	25.86	ppb	1.84	#VALUE!	
182 W	1.498	0.2996	ppb	5.07	1000.	
203 Tl	0.4929	0.0986	ppb	9.53	1000.	
205 Tl	0.4759	0.0952	ppb	3.94	#VALUE!	
208 Pb	11,705.	2,341.	ppb	1.21	2000.	>LDR
232 Th	44.21	8.842	ppb	0.55	1000.	
238 U	11.055	2.211	ppb	2.27	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9228743.00	2.63	8477054.00	108.9	69.5 - 120	
45 Sc	3053088.50	0.73	2909174.30	104.9	69.5 - 120	
89 Y	3243603.50	0.92	3117971.30	104.0	69.5 - 120	
159 Tb	2693760.30	1.17	2784003.50	96.8	69.5 - 120	
209 Bi	1366668.80	1.24	1452804.80	94.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000076

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\038SMPL.D\038SMPL.D#
Date Acquired: Oct 11 2018 08:43 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0035	0.0035	ppb	48.58	100.	
11 B	0.4049	0.4049	ppb	4.05	1000.	
23 Na	-2.688	-2.688	ppb	9.62	200000.	
25 Mg	0.3954	0.3954	ppb	7.33	200000.	
27 Al	0.9957	0.9957	ppb	5.08	200000.	
28 Si	42.59	42.59	ppb	17.17	#VALUE!	
29 Si	-92.64	-92.64	ppb	36.77	10000.	
39 K	3.346	3.346	ppb	54.99	200000.	
43 Ca	2.133	2.133	ppb	31.02	#VALUE!	
44 Ca	-5.05	-5.05	ppb	69.49	200000.	
51 V	-0.1817	-0.1817	ppb	62.03	1000.	
52 Cr	-0.1635	-0.1635	ppb	22.95	2000.	
53 Cr	-8.784	-8.784	ppb	4.59	#VALUE!	
55 Mn	0.0352	0.0352	ppb	9.26	2000.	
56 Fe	-5.1	-5.1	ppb	13.10	#VALUE!	
57 Fe	0.1445	0.1445	ppb	551.76	100000.	
59 Co	0.0049	0.0049	ppb	82.36	1000.	
60 Ni	2.503	2.503	ppb	1.34	1000.	
63 Cu	1.985	1.985	ppb	2.88	#VALUE!	
65 Cu	1.983	1.983	ppb	2.16	2000.	
66 Zn	1.852	1.852	ppb	5.88	2000.	
68 Zn	0.2103	0.2103	ppb	225.73	#VALUE!	
75 As	-0.1198	-0.1198	ppb	158.01	1000.	
82 Se	-0.2998	-0.2998	ppb	256.84	1000.	
88 Sr	0.0145	0.0145	ppb	49.55	2000.	
98 Mo	0.0071	0.0071	ppb	43.99	1000.	
107 Ag	0.0015	0.0015	ppb	221.06	100.	
109 Ag	-0.0001	-0.0001	ppb	3412.10	#VALUE!	
111 Cd	-0.111	-0.111	ppb	48.98	#VALUE!	
114 Cd	0.0002	0.0002	ppb	2737.80	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.1454	0.1454	ppb	9.52	1000.	
120 Sn	0.1553	0.1553	ppb	27.00	#VALUE!	
121 Sb	0.0088	0.0088	ppb	33.29	#VALUE!	
123 Sb	0.0055	0.0055	ppb	93.24	1000.	
135 Ba	0.0187	0.0187	ppb	139.95	2000.	
137 Ba	0.0185	0.0185	ppb	73.73	#VALUE!	
182 W	0.0082	0.0082	ppb	48.33	1000.	
203 Tl	0.0055	0.0055	ppb	14.93	1000.	
205 Tl	0.0014	0.0014	ppb	117.32	#VALUE!	
208 Pb	0.1195	0.1195	ppb	12.18	2000.	
232 Th	0.1101	0.1101	ppb	7.47	1000.	
238 U	-0.0012	-0.0012	ppb	82.25	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8918015.00	2.64	8477054.00	105.2	69.5 - 120	
45 Sc	2983995.30	2.28	2909174.30	102.6	69.5 - 120	
89 Y	3199126.80	1.03	3117971.30	102.6	69.5 - 120	
159 Tb	2754338.50	1.61	2784003.50	98.9	69.5 - 120	
209 Bi	1470715.50	0.77	1452804.80	101.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000077

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\039_CCV.D\039_CCV.D#
Date Acquired: Oct 11 2018 08:47 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.26	ppb	3.76	25	97.04	
11 B	23.93	ppb	6.81	25	95.72	
23 Na	4,967.	ppb	2.57	5,000	99.34	
25 Mg	4,871.	ppb	2.76	5,000	97.42	
27 Al	488.8	ppb	3.41	500	97.76	
28 Si	532.1	ppb	3.42	500	106.42	
29 Si	377.5	ppb	15.67	500	75.5	Fail
39 K	4,964.	ppb	1.98	5,000	99.28	
43 Ca	4,944.	ppb	3.18	5,000	98.88	
44 Ca	5,079.	ppb	1.04	5,000	101.58	
51 V	25.69	ppb	2.47	25	102.76	
52 Cr	25.55	ppb	4.35	25	102.2	
53 Cr	19.64	ppb	13.79	25	78.56	
55 Mn	26.05	ppb	3.69	25	104.2	
56 Fe	4,868.	ppb	3.01	5,000	97.36	
57 Fe	4,967.	ppb	2.95	5,000	99.34	
59 Co	25.39	ppb	4.85	25	101.56	
60 Ni	24.25	ppb	3.07	25	97	
63 Cu	24.66	ppb	3.80	25	98.64	
65 Cu	24.39	ppb	3.20	25	97.56	
66 Zn	21.5	ppb	2.90	25	86	Fail
68 Zn	20.82	ppb	5.11	25	83.28	
75 As	25.69	ppb	2.78	25	102.76	
82 Se	26.2	ppb	2.13	25	104.8	
88 Sr	27.02	ppb	1.64	25	108.08	
98 Mo	24.57	ppb	3.39	25	98.28	
107 Ag	24.58	ppb	4.04	25	98.32	
109 Ag	24.69	ppb	3.24	25	98.76	
111 Cd	24.54	ppb	3.35	25	98.16	
114 Cd	24.51	ppb	3.55	25	98.04	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.23	ppb	1.35	25	100.92	
120 Sn	25.12	ppb	2.47	25	100.48	
121 Sb	25.72	ppb	1.65	25	102.88	
123 Sb	25.75	ppb	1.26	25	103	
135 Ba	25.51	ppb	0.15	25	102.04	
137 Ba	25.88	ppb	1.94	25	103.52	
182 W	25.04	ppb	1.77	25	100.16	
203 Tl	24.77	ppb	1.65	25	99.08	
205 Tl	24.81	ppb	2.26	25	99.24	
208 Pb	24.96	ppb	2.30	25	99.84	
232 Th	26.48	ppb	1.07	25	105.92	
238 U	26.58	ppb	2.52	25	106.32	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8781578.00	7.04	8477054.00	103.6	80 - 120.4	
45 Sc	3000996.50	1.05	2909174.30	103.2	80 - 120.4	
89 Y	3178609.50	0.26	3117971.30	101.9	80 - 120.4	
159 Tb	2735419.30	1.10	2784003.50	98.3	80 - 120.4	
209 Bi	1431680.10	1.59	1452804.80	98.5	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000078

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\040_CCB.D\040_CCB.D#
Date Acquired: Oct 11 2018 08:51 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0017	ppb	58.42	1.00	
11 B	0.0874	ppb	193.36	1.00	
23 Na	-3.572	ppb	5.96	1.00	
25 Mg	0.0851	ppb	19.29	1.00	
27 Al	0.2205	ppb	5.50	1.00	
28 Si	34.53	ppb	54.10	1.00	
29 Si	-95.56	ppb	61.68	1.00	
39 K	3.646	ppb	22.92	1.00	
43 Ca	-1.513	ppb	148.84	1.00	
44 Ca	-6.855	ppb	16.32	1.00	
51 V	-0.024	ppb	245.38	1.00	
52 Cr	-0.2175	ppb	10.69	1.00	
53 Cr	-8.597	ppb	4.81	1.00	
55 Mn	0.004	ppb	94.47	1.00	
56 Fe	-2.421	ppb	41.51	1.00	
57 Fe	0.356	ppb	244.49	1.00	
59 Co	0.0008	ppb	493.87	1.00	
60 Ni	-0.0005	ppb	1557.60	1.00	
63 Cu	0.052	ppb	11.98	1.00	
65 Cu	0.0646	ppb	7.18	1.00	
66 Zn	0.1337	ppb	28.80	1.00	
68 Zn	-1.228	ppb	22.43	1.00	
75 As	-0.1022	ppb	128.57	1.00	
82 Se	-0.378	ppb	150.98	1.00	
88 Sr	0.0003	ppb	793.80	1.00	
98 Mo	0.011	ppb	58.18	1.00	
107 Ag	0.0001	ppb	1100.10	1.00	
109 Ag	0.0009	ppb	497.94	1.00	
111 Cd	-0.1343	ppb	13.86	1.00	
114 Cd	0.002	ppb	689.86	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0378	ppb	50.86	1.00	
120 Sn	0.0253	ppb	49.01	1.00	
121 Sb	0.014	ppb	39.48	1.00	
123 Sb	0.0066	ppb	70.87	1.00	
135 Ba	-0.0027	ppb	249.76	1.00	
137 Ba	-0.0069	ppb	63.54	1.00	
182 W	0.0296	ppb	16.50	1.00	
203 Tl	0.0086	ppb	51.25	1.00	
205 Tl	0.0054	ppb	37.16	1.00	
208 Pb	0.0164	ppb	2.61	1.00	
232 Th	0.1471	ppb	22.46	1.00	
238 U	0.0002	ppb	1.95	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8956677.00	5.71	8477054.00	105.7	79.5 - 120	
45 Sc	2985681.50	1.73	2909174.30	102.6	79.5 - 120	
89 Y	3197215.80	0.94	3117971.30	102.5	79.5 - 120	
159 Tb	2748295.00	1.23	2784003.50	98.7	79.5 - 120	
209 Bi	1466265.30	0.17	1452804.80	100.9	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000079

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\041SMPL.D\041SMPL.D#
Date Acquired: Oct 11 2018 08:56 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9573-002
Misc Info:
Vial Number: 2111
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 20.00
Autodil Factor: Undiluted
Final Dil Factor: 20.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	2.944	0.1472	ppb	5.81	100.	
11 B	164.26	8.213	ppb	1.55	1000.	
23 Na	33,060.	1,653.	ppb	3.24	200000.	
25 Mg	49,960.	2,498.	ppb	2.87	200000.	
27 Al	70,340.	3,517.	ppb	3.33	200000.	
28 Si	2,250.	112.5	ppb	12.37	#VALUE!	
29 Si	-398.2	-19.91	ppb	236.31	10000.	
39 K	6,838.	341.9	ppb	3.16	200000.	
43 Ca	284,000.	14,200.	ppb	0.42	#VALUE!	
44 Ca	275,400.	13,770.	ppb	1.06	200000.	
51 V	187.98	9.399	ppb	4.05	1000.	
52 Cr	171.92	8.596	ppb	1.20	2000.	
53 Cr	64.9	3.245	ppb	9.84	#VALUE!	
55 Mn	3,028.	151.4	ppb	0.76	2000.	
56 Fe	313,000.	15,650.	ppb	1.16	#VALUE!	
57 Fe	306,400.	15,320.	ppb	1.56	100000.	
59 Co	85.58	4.279	ppb	1.47	1000.	
60 Ni	139.62	6.981	ppb	2.30	1000.	
63 Cu	350.	17.5	ppb	1.02	#VALUE!	
65 Cu	356.	17.8	ppb	2.99	2000.	
66 Zn	1,008.6	50.43	ppb	0.02	2000.	
68 Zn	917.2	45.86	ppb	0.57	#VALUE!	
75 As	208.6	10.43	ppb	0.38	1000.	
82 Se	7.886	0.3943	ppb	84.10	1000.	
88 Sr	2,394.	119.7	ppb	0.80	2000.	
98 Mo	14.09	0.7045	ppb	4.88	1000.	
107 Ag	0.8522	0.0426	ppb	13.68	100.	
109 Ag	0.948	0.0474	ppb	20.46	#VALUE!	
111 Cd	0.9288	0.0464	ppb	78.64	#VALUE!	
114 Cd	1.088	0.0544	ppb	53.82	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	53.04	2.652	ppb	2.24	1000.	
120 Sn	53.92	2.696	ppb	2.53	#VALUE!	
121 Sb	26.22	1.311	ppb	1.94	#VALUE!	
123 Sb	26.68	1.334	ppb	2.00	1000.	
135 Ba	143.68	7.184	ppb	0.71	2000.	
137 Ba	142.6	7.13	ppb	0.83	#VALUE!	
182 W	1.6312	0.0816	ppb	13.43	1000.	
203 Tl	0.5084	0.0254	ppb	16.78	1000.	
205 Tl	0.6134	0.0307	ppb	5.69	#VALUE!	
208 Pb	12,702.	635.1	ppb	2.16	2000.	
232 Th	45.6	2.28	ppb	5.23	1000.	
238 U	11.722	0.5861	ppb	2.94	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9004373.00	3.20	8477054.00	106.2	69.5 - 120	
45 Sc	3035680.30	1.32	2909174.30	104.3	69.5 - 120	
89 Y	3219261.80	0.35	3117971.30	103.2	69.5 - 120	
159 Tb	2723483.00	0.95	2784003.50	97.8	69.5 - 120	
209 Bi	1434535.50	1.63	1452804.80	98.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000080

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\042SMPL.D\042SMPL.D#
Date Acquired: Oct 11 2018 09:00 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2112
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0018	0.0018	ppb	67.71	100.	
11 B	0.2271	0.2271	ppb	35.95	1000.	
23 Na	-4.409	-4.409	ppb	3.57	200000.	
25 Mg	0.3266	0.3266	ppb	22.06	200000.	
27 Al	8.528	8.528	ppb	3.14	200000.	
28 Si	50.27	50.27	ppb	38.81	#VALUE!	
29 Si	-90.08	-90.08	ppb	63.68	10000.	
39 K	2.212	2.212	ppb	34.39	200000.	
43 Ca	-0.4941	-0.4941	ppb	747.82	#VALUE!	
44 Ca	-6.113	-6.113	ppb	18.26	200000.	
51 V	-0.0859	-0.0859	ppb	5.74	1000.	
52 Cr	-0.2295	-0.2295	ppb	3.30	2000.	
53 Cr	-8.917	-8.917	ppb	2.50	#VALUE!	
55 Mn	0.0097	0.0097	ppb	35.22	2000.	
56 Fe	-4.918	-4.918	ppb	31.48	#VALUE!	
57 Fe	0.0168	0.0168	ppb	2138.60	100000.	
59 Co	-0.0011	-0.0011	ppb	406.90	1000.	
60 Ni	0.0002	0.0002	ppb	3691.50	1000.	
63 Cu	0.0716	0.0716	ppb	13.94	#VALUE!	
65 Cu	0.0535	0.0535	ppb	46.04	2000.	
66 Zn	0.0694	0.0694	ppb	99.54	2000.	
68 Zn	-0.9102	-0.9102	ppb	32.50	#VALUE!	
75 As	-0.0836	-0.0836	ppb	250.90	1000.	
82 Se	-0.3371	-0.3371	ppb	173.84	1000.	
88 Sr	0.0112	0.0112	ppb	15.65	2000.	
98 Mo	-0.0006	-0.0006	ppb	41.88	1000.	
107 Ag	0.0044	0.0044	ppb	159.50	100.	
109 Ag	0.0056	0.0056	ppb	80.86	#VALUE!	
111 Cd	-0.1162	-0.1162	ppb	48.99	#VALUE!	
114 Cd	0.0103	0.0103	ppb	237.83	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0274	0.0274	ppb	81.08	1000.	
120 Sn	0.0191	0.0191	ppb	56.82	#VALUE!	
121 Sb	0.0063	0.0063	ppb	97.80	#VALUE!	
123 Sb	0.0031	0.0031	ppb	198.23	1000.	
135 Ba	-0.0028	-0.0028	ppb	86.82	2000.	
137 Ba	0.0049	0.0049	ppb	269.36	#VALUE!	
182 W	0.0055	0.0055	ppb	15.95	1000.	
203 Tl	0.0074	0.0074	ppb	31.87	1000.	
205 Tl	0.0028	0.0028	ppb	127.07	#VALUE!	
208 Pb	0.0249	0.0249	ppb	17.17	2000.	
232 Th	0.0745	0.0745	ppb	25.60	1000.	
238 U	-0.0004	-0.0004	ppb	50.77	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8710319.00	2.12	8477054.00	102.8	69.5 - 120	
45 Sc	3003848.50	1.30	2909174.30	103.3	69.5 - 120	
89 Y	3222710.30	0.86	3117971.30	103.4	69.5 - 120	
159 Tb	2761045.50	0.87	2784003.50	99.2	69.5 - 120	
209 Bi	1490163.30	0.61	1452804.80	102.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000081

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\043SMPL.D\043SMPL.D#
Date Acquired: Oct 11 2018 09:04 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: PBSLJ09IMS1
Misc Info:
Vial Number: 2201
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0073	0.0015	ppb	105.48	100.	
11 B	2.373	0.4746	ppb	5.10	1000.	
23 Na	26.19	5.238	ppb	0.24	200000.	
25 Mg	15.235	3.047	ppb	0.43	200000.	
27 Al	27.035	5.407	ppb	3.79	200000.	
28 Si	121.7	24.34	ppb	20.62	#VALUE!	
29 Si	-864.5	-172.9	ppb	24.63	10000.	LOW
39 K	40.83	8.166	ppb	7.70	200000.	
43 Ca	60.9	12.18	ppb	15.16	#VALUE!	
44 Ca	24.475	4.895	ppb	40.55	200000.	
51 V	-0.2782	-0.0556	ppb	408.16	1000.	
52 Cr	1.7635	0.3527	ppb	7.31	2000.	
53 Cr	66.2	13.24	ppb	5.36	#VALUE!	
55 Mn	1.4965	0.2993	ppb	6.47	2000.	
56 Fe	-11.765	-2.353	ppb	40.54	#VALUE!	
57 Fe	4.2325	0.8465	ppb	164.21	100000.	
59 Co	0.0249	0.005	ppb	84.21	1000.	
60 Ni	0.88	0.176	ppb	4.85	1000.	
63 Cu	1.3765	0.2753	ppb	3.91	#VALUE!	
65 Cu	1.3075	0.2615	ppb	17.99	2000.	
66 Zn	2.3185	0.4637	ppb	19.27	2000.	
68 Zn	-1.702	-0.3404	ppb	69.13	#VALUE!	
75 As	-0.0727	-0.0145	ppb	2602.20	1000.	
82 Se	-0.0354	-0.0071	ppb	5803.40	1000.	
88 Sr	0.2573	0.0515	ppb	33.47	2000.	
98 Mo	0.181	0.0362	ppb	13.35	1000.	
107 Ag	-0.0095	-0.0019	ppb	120.38	100.	
109 Ag	0.0239	0.0048	ppb	85.94	#VALUE!	
111 Cd	-0.825	-0.165	ppb	30.78	#VALUE!	
114 Cd	-0.0004	-0.0001	ppb	13062.00	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	41.95	8.39	ppb	0.68	1000.	
120 Sn	41.915	8.383	ppb	0.58	#VALUE!	
121 Sb	0.0589	0.0118	ppb	13.87	#VALUE!	
123 Sb	0.0205	0.0041	ppb	60.72	1000.	
135 Ba	0.3493	0.0699	ppb	46.59	2000.	
137 Ba	0.3829	0.0766	ppb	28.68	#VALUE!	
182 W	0.0619	0.0124	ppb	45.95	1000.	
203 Tl	0.0204	0.0041	ppb	116.24	1000.	
205 Tl	0.0073	0.0015	ppb	154.85	#VALUE!	
208 Pb	0.4532	0.0906	ppb	4.43	2000.	
232 Th	0.5195	0.1039	ppb	31.41	1000.	
238 U	0.006	0.0012	ppb	51.05	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9122028.00	1.31	8477054.00	107.6	69.5 - 120	
45 Sc	3015421.00	0.58	2909174.30	103.7	69.5 - 120	
89 Y	3230121.50	0.14	3117971.30	103.6	69.5 - 120	
159 Tb	2746991.80	0.32	2784003.50	98.7	69.5 - 120	
209 Bi	1456415.90	1.20	1452804.80	100.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000082

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\044SMPL.D\044SMPL.D#
Date Acquired: Oct 11 2018 09:08 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: LCSOLJ09IMS1
Misc Info:
Vial Number: 2202
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	48.99	9.798	ppb	2.02	100.	
11 B	491.3	98.26	ppb	2.47	1000.	
23 Na	7,715.	1,543.	ppb	2.28	200000.	
25 Mg	5,335.	1,067.	ppb	1.36	200000.	
27 Al	2,105.5	421.1	ppb	2.31	200000.	
28 Si	1,063.5	212.7	ppb	4.97	#VALUE!	
29 Si	-44.485	-8.897	ppb	520.29	10000.	
39 K	10,370.	2,074.	ppb	2.97	200000.	
43 Ca	3,291.	658.2	ppb	5.35	#VALUE!	
44 Ca	3,024.5	604.9	ppb	2.91	200000.	
51 V	507.5	101.5	ppb	0.36	1000.	
52 Cr	213.15	42.63	ppb	1.52	2000.	
53 Cr	306.6	61.32	ppb	2.43	#VALUE!	
55 Mn	503.	100.6	ppb	0.93	2000.	
56 Fe	1,009.5	201.9	ppb	2.23	#VALUE!	
57 Fe	1,091.	218.2	ppb	2.52	100000.	
59 Co	505.	101.	ppb	0.87	1000.	
60 Ni	491.1	98.22	ppb	2.25	1000.	
63 Cu	250.15	50.03	ppb	2.35	#VALUE!	
65 Cu	254.7	50.94	ppb	1.54	2000.	
66 Zn	425.	85.	ppb	1.06	2000.	
68 Zn	559.	111.8	ppb	0.92	#VALUE!	
75 As	102.65	20.53	ppb	0.48	1000.	
82 Se	96.8	19.36	ppb	0.89	1000.	
88 Sr	521.5	104.3	ppb	0.60	2000.	
98 Mo	97.3	19.46	ppb	1.50	1000.	
107 Ag	50.7	10.14	ppb	2.15	100.	
109 Ag	50.95	10.19	ppb	3.32	#VALUE!	
111 Cd	242.7	48.54	ppb	2.42	#VALUE!	
114 Cd	243.1	48.62	ppb	2.16	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	564.	112.8	ppb	2.09	1000.	
120 Sn	558.	111.6	ppb	1.80	#VALUE!	
121 Sb	103.65	20.73	ppb	1.86	#VALUE!	
123 Sb	103.15	20.63	ppb	1.96	1000.	
135 Ba	2,132.	426.4	ppb	1.70	2000.	
137 Ba	2,027.	405.4	ppb	0.36	#VALUE!	
182 W	102.55	20.51	ppb	0.40	1000.	
203 Tl	104.15	20.83	ppb	1.81	1000.	
205 Tl	102.55	20.51	ppb	2.19	#VALUE!	
208 Pb	103.45	20.69	ppb	2.31	2000.	
232 Th	108.75	21.75	ppb	0.66	1000.	
238 U	110.35	22.07	ppb	2.59	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9266487.00	3.93	8477054.00	109.3	69.5 - 120	
45 Sc	3052846.50	0.57	2909174.30	104.9	69.5 - 120	
89 Y	3252198.80	0.19	3117971.30	104.3	69.5 - 120	
159 Tb	2752851.80	0.14	2784003.50	98.9	69.5 - 120	
209 Bi	1433981.80	1.45	1452804.80	98.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000083

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\045SMPL.D\045SMPL.D#
Date Acquired: Oct 11 2018 09:12 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9734-001
Misc Info:
Vial Number: 2203
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.86	0.172	ppb	2.68	100.	
11 B	144.	28.8	ppb	7.47	1000.	
23 Na	14,630.	2,926.	ppb	0.98	200000.	
25 Mg	40,300.	8,060.	ppb	2.11	200000.	
27 Al	15,450.	3,090.	ppb	3.03	200000.	
28 Si	3,227.5	645.5	ppb	1.50	#VALUE!	
29 Si	2,248.5	449.7	ppb	9.62	10000.	
39 K	63,750.	12,750.	ppb	0.75	200000.	
43 Ca	43,675.	8,735.	ppb	0.79	#VALUE!	
44 Ca	43,475.	8,695.	ppb	0.23	200000.	
51 V	38.115	7.623	ppb	1.83	1000.	
52 Cr	93.05	18.61	ppb	2.37	2000.	
53 Cr	158.15	31.63	ppb	5.61	#VALUE!	
55 Mn	473.85	94.77	ppb	2.22	2000.	
56 Fe	42,235.	8,447.	ppb	1.92	#VALUE!	
57 Fe	42,045.	8,409.	ppb	2.55	100000.	
59 Co	13.925	2.785	ppb	3.52	1000.	
60 Ni	115.3	23.06	ppb	3.43	1000.	
63 Cu	1,951.	390.2	ppb	1.48	#VALUE!	
65 Cu	2,056.	411.2	ppb	0.86	2000.	
66 Zn	2,985.5	597.1	ppb	1.05	2000.	
68 Zn	2,958.5	591.7	ppb	0.75	#VALUE!	
75 As	29.405	5.881	ppb	2.82	1000.	
82 Se	23.	4.6	ppb	9.80	1000.	
88 Sr	317.55	63.51	ppb	0.37	2000.	
98 Mo	26.61	5.322	ppb	0.75	1000.	
107 Ag	13.47	2.694	ppb	2.52	100.	
109 Ag	13.595	2.719	ppb	3.84	#VALUE!	
111 Cd	7.995	1.599	ppb	7.02	#VALUE!	
114 Cd	8.92	1.784	ppb	0.72	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	150.35	30.07	ppb	1.80	1000.	
120 Sn	149.4	29.88	ppb	1.72	#VALUE!	
121 Sb	9.42	1.884	ppb	0.71	#VALUE!	
123 Sb	10.19	2.038	ppb	6.06	1000.	
135 Ba	531.	106.2	ppb	1.32	2000.	
137 Ba	534.	106.8	ppb	0.89	#VALUE!	
182 W	6.405	1.281	ppb	4.99	1000.	
203 Tl	0.4655	0.0931	ppb	9.40	1000.	
205 Tl	0.4006	0.0801	ppb	10.08	#VALUE!	
208 Pb	129.8	25.96	ppb	1.68	2000.	
232 Th	1.91	0.382	ppb	46.55	1000.	
238 U	13.56	2.712	ppb	1.74	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8739317.00	4.73	8477054.00	103.1	69.5 - 120	
45 Sc	3037310.80	1.02	2909174.30	104.4	69.5 - 120	
89 Y	3317453.00	1.86	3117971.30	106.4	69.5 - 120	
159 Tb	2812870.50	0.93	2784003.50	101.0	69.5 - 120	
209 Bi	1679877.30	1.87	1452804.80	115.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000084

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\046SMPL.D\046SMPL.D#
Date Acquired: Oct 11 2018 09:16 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9772-001
Misc Info:
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	4.489	0.8978	ppb	2.91	100.	
11 B	1,343.	268.6	ppb	4.33	1000.	
23 Na	18,745.	3,749.	ppb	1.65	200000.	
25 Mg	70,900.	14,180.	ppb	1.36	200000.	
27 Al	160,850.	32,170.	ppb	2.19	200000.	
28 Si	2,624.5	524.9	ppb	2.50	#VALUE!	
29 Si	1,257.5	251.5	ppb	13.65	10000.	
39 K	220,500.	44,100.	ppb	0.89	200000.	
43 Ca	668,000.	133,600.	ppb	1.01	#VALUE!	
44 Ca	696,000.	139,200.	ppb	0.70	200000.	
51 V	303.85	60.77	ppb	0.93	1000.	
52 Cr	276.6	55.32	ppb	1.11	2000.	
53 Cr	350.25	70.05	ppb	0.55	#VALUE!	
55 Mn	36,330.	7,266.	ppb	0.44	2000.	>LDR
56 Fe	110,500.	22,100.	ppb	0.98	#VALUE!	
57 Fe	111,850.	22,370.	ppb	0.53	100000.	
59 Co	50.25	10.05	ppb	1.56	1000.	
60 Ni	155.4	31.08	ppb	1.67	1000.	
63 Cu	369.05	73.81	ppb	0.42	#VALUE!	
65 Cu	389.3	77.86	ppb	0.36	2000.	
66 Zn	4,720.5	944.1	ppb	1.38	2000.	
68 Zn	5,015.	1,003.	ppb	1.84	#VALUE!	
75 As	134.8	26.96	ppb	1.71	1000.	
82 Se	7.73	1.546	ppb	25.69	1000.	
88 Sr	3,373.	674.6	ppb	1.47	2000.	
98 Mo	12.475	2.495	ppb	1.40	1000.	
107 Ag	3.4975	0.6995	ppb	5.91	100.	
109 Ag	3.328	0.6656	ppb	4.99	#VALUE!	
111 Cd	57.5	11.5	ppb	0.62	#VALUE!	
114 Cd	54.55	10.91	ppb	0.82	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	53.	10.6	ppb	0.80	1000.	
120 Sn	52.3	10.46	ppb	1.20	#VALUE!	
121 Sb	1.32	0.264	ppb	10.78	#VALUE!	
123 Sb	1.5175	0.3035	ppb	2.49	1000.	
135 Ba	6,585.	1,317.	ppb	0.60	2000.	
137 Ba	6,480.	1,296.	ppb	0.24	#VALUE!	
182 W	7.355	1.471	ppb	2.51	1000.	
203 Tl	4.466	0.8932	ppb	3.22	1000.	
205 Tl	4.501	0.9002	ppb	0.85	#VALUE!	
208 Pb	171.25	34.25	ppb	1.00	2000.	
232 Th	21.7	4.34	ppb	0.98	1000.	
238 U	5.855	1.171	ppb	1.18	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8334293.00	2.18	8477054.00	98.3	69.5 - 120	
45 Sc	3153260.80	0.49	2909174.30	108.4	69.5 - 120	
89 Y	3351621.50	0.49	3117971.30	107.5	69.5 - 120	
159 Tb	2762889.00	0.65	2784003.50	99.2	69.5 - 120	
209 Bi	1408672.30	1.98	1452804.80	97.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000085

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\047SMPL.D\047SMPL.D#
Date Acquired: Oct 11 2018 09:20 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9772-002
Misc Info:
Vial Number: 2205
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	4.676	0.9352	ppb	0.25	100.	
11 B	1,364.5	272.9	ppb	1.75	1000.	
23 Na	19,030.	3,806.	ppb	1.29	200000.	
25 Mg	70,900.	14,180.	ppb	1.25	200000.	
27 Al	162,150.	32,430.	ppb	2.17	200000.	
28 Si	2,738.	547.6	ppb	2.61	#VALUE!	
29 Si	1,453.	290.6	ppb	9.39	10000.	
39 K	225,000.	45,000.	ppb	1.69	200000.	
43 Ca	682,500.	136,500.	ppb	0.72	#VALUE!	
44 Ca	707,000.	141,400.	ppb	0.22	200000.	
51 V	300.3	60.06	ppb	1.38	1000.	
52 Cr	276.7	55.34	ppb	0.89	2000.	
53 Cr	355.95	71.19	ppb	1.86	#VALUE!	
55 Mn	36,685.	7,337.	ppb	0.48	2000.	>LDR
56 Fe	110,800.	22,160.	ppb	0.55	#VALUE!	
57 Fe	111,450.	22,290.	ppb	1.07	100000.	
59 Co	50.95	10.19	ppb	2.92	1000.	
60 Ni	160.1	32.02	ppb	2.94	1000.	
63 Cu	370.25	74.05	ppb	1.64	#VALUE!	
65 Cu	390.15	78.03	ppb	0.57	2000.	
66 Zn	4,732.5	946.5	ppb	0.62	2000.	
68 Zn	4,976.5	995.3	ppb	0.86	#VALUE!	
75 As	134.55	26.91	ppb	0.14	1000.	
82 Se	3.166	0.6332	ppb	14.86	1000.	
88 Sr	3,390.5	678.1	ppb	0.87	2000.	
98 Mo	12.31	2.462	ppb	3.37	1000.	
107 Ag	3.6305	0.7261	ppb	2.16	100.	
109 Ag	3.4045	0.6809	ppb	1.43	#VALUE!	
111 Cd	56.9	11.38	ppb	1.37	#VALUE!	
114 Cd	54.55	10.91	ppb	0.91	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	53.75	10.75	ppb	1.77	1000.	
120 Sn	53.25	10.65	ppb	1.86	#VALUE!	
121 Sb	1.2755	0.2551	ppb	7.70	#VALUE!	
123 Sb	1.6085	0.3217	ppb	6.95	1000.	
135 Ba	6,680.	1,336.	ppb	0.60	2000.	
137 Ba	6,565.	1,313.	ppb	0.45	#VALUE!	
182 W	7.41	1.482	ppb	1.51	1000.	
203 Tl	4.6505	0.9301	ppb	2.15	1000.	
205 Tl	4.4925	0.8985	ppb	3.89	#VALUE!	
208 Pb	172.5	34.5	ppb	1.64	2000.	
232 Th	22.41	4.482	ppb	1.94	1000.	
238 U	5.835	1.167	ppb	2.38	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8377750.50	1.84	8477054.00	98.8	69.5 - 120	
45 Sc	3165060.00	1.18	2909174.30	108.8	69.5 - 120	
89 Y	3385512.50	0.43	3117971.30	108.6	69.5 - 120	
159 Tb	2769434.30	0.83	2784003.50	99.5	69.5 - 120	
209 Bi	1412330.50	2.77	1452804.80	97.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000086

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\048SMPL.D\048SMPL.D#
Date Acquired: Oct 11 2018 09:24 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9772-003
Misc Info:
Vial Number: 2206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	3.727	0.7454	ppb	1.73	100.	
11 B	1,087.	217.4	ppb	3.26	1000.	
23 Na	15,595.	3,119.	ppb	1.65	200000.	
25 Mg	58,650.	11,730.	ppb	0.23	200000.	
27 Al	133,500.	26,700.	ppb	1.25	200000.	
28 Si	2,530.5	506.1	ppb	1.29	#VALUE!	
29 Si	1,166.5	233.3	ppb	7.60	10000.	
39 K	182,550.	36,510.	ppb	0.86	200000.	
43 Ca	543,500.	108,700.	ppb	0.78	#VALUE!	
44 Ca	562,000.	112,400.	ppb	0.59	200000.	
51 V	247.25	49.45	ppb	0.85	1000.	
52 Cr	242.05	48.41	ppb	1.25	2000.	
53 Cr	316.4	63.28	ppb	3.09	#VALUE!	
55 Mn	29,930.	5,986.	ppb	2.63	2000.	>LDR
56 Fe	92,750.	18,550.	ppb	2.55	#VALUE!	
57 Fe	93,300.	18,660.	ppb	1.95	100000.	
59 Co	42.755	8.551	ppb	3.53	1000.	
60 Ni	137.65	27.53	ppb	4.01	1000.	
63 Cu	313.55	62.71	ppb	1.56	#VALUE!	
65 Cu	329.55	65.91	ppb	1.31	2000.	
66 Zn	3,810.5	762.1	ppb	0.91	2000.	
68 Zn	4,037.	807.4	ppb	1.19	#VALUE!	
75 As	115.1	23.02	ppb	1.06	1000.	
82 Se	3.3275	0.6655	ppb	7.68	1000.	
88 Sr	2,658.	531.6	ppb	0.10	2000.	
98 Mo	10.51	2.102	ppb	1.02	1000.	
107 Ag	2.6635	0.5327	ppb	0.90	100.	
109 Ag	2.517	0.5034	ppb	2.49	#VALUE!	
111 Cd	39.845	7.969	ppb	1.71	#VALUE!	
114 Cd	38.09	7.618	ppb	1.38	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.15	10.43	ppb	1.17	1000.	
120 Sn	51.4	10.28	ppb	1.01	#VALUE!	
121 Sb	1.1125	0.2225	ppb	7.41	#VALUE!	
123 Sb	1.262	0.2524	ppb	6.18	1000.	
135 Ba	5,450.	1,090.	ppb	0.57	2000.	
137 Ba	5,380.	1,076.	ppb	0.55	#VALUE!	
182 W	7.04	1.408	ppb	3.96	1000.	
203 Tl	3.9575	0.7915	ppb	3.78	1000.	
205 Tl	3.85	0.77	ppb	4.27	#VALUE!	
208 Pb	139.25	27.85	ppb	1.08	2000.	
232 Th	18.24	3.648	ppb	1.05	1000.	
238 U	4.638	0.9276	ppb	2.35	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8840877.00	1.03	8477054.00	104.3	69.5 - 120	
45 Sc	3214553.50	0.47	2909174.30	110.5	69.5 - 120	
89 Y	3406884.00	0.97	3117971.30	109.3	69.5 - 120	
159 Tb	2776745.50	0.97	2784003.50	99.7	69.5 - 120	
209 Bi	1422327.60	1.65	1452804.80	97.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000087

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\049SMPL.D\049SMPL.D#
Date Acquired: Oct 11 2018 09:28 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9772-004
Misc Info:
Vial Number: 2207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	3.71	0.742	ppb	2.72	100.	
11 B	1,103.	220.6	ppb	2.65	1000.	
23 Na	15,695.	3,139.	ppb	1.69	200000.	
25 Mg	58,350.	11,670.	ppb	0.85	200000.	
27 Al	134,250.	26,850.	ppb	1.02	200000.	
28 Si	2,525.	505.	ppb	1.08	#VALUE!	
29 Si	1,049.5	209.9	ppb	2.17	10000.	
39 K	184,000.	36,800.	ppb	2.24	200000.	
43 Ca	549,500.	109,900.	ppb	0.21	#VALUE!	
44 Ca	567,000.	113,400.	ppb	0.39	200000.	
51 V	249.85	49.97	ppb	0.24	1000.	
52 Cr	237.6	47.52	ppb	1.81	2000.	
53 Cr	315.85	63.17	ppb	2.40	#VALUE!	
55 Mn	29,865.	5,973.	ppb	1.54	2000.	>LDR
56 Fe	93,250.	18,650.	ppb	1.86	#VALUE!	
57 Fe	93,600.	18,720.	ppb	2.26	100000.	
59 Co	43.155	8.631	ppb	3.61	1000.	
60 Ni	139.2	27.84	ppb	3.39	1000.	
63 Cu	314.15	62.83	ppb	2.37	#VALUE!	
65 Cu	327.95	65.59	ppb	1.91	2000.	
66 Zn	3,815.5	763.1	ppb	0.19	2000.	
68 Zn	4,035.	807.	ppb	1.08	#VALUE!	
75 As	115.4	23.08	ppb	1.36	1000.	
82 Se	6.625	1.325	ppb	19.34	1000.	
88 Sr	2,640.	528.	ppb	0.37	2000.	
98 Mo	10.61	2.122	ppb	2.87	1000.	
107 Ag	2.7345	0.5469	ppb	4.10	100.	
109 Ag	2.5615	0.5123	ppb	3.81	#VALUE!	
111 Cd	39.945	7.989	ppb	1.87	#VALUE!	
114 Cd	38.055	7.611	ppb	1.54	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.8	10.36	ppb	2.04	1000.	
120 Sn	51.8	10.36	ppb	1.24	#VALUE!	
121 Sb	1.088	0.2176	ppb	3.76	#VALUE!	
123 Sb	1.317	0.2634	ppb	2.69	1000.	
135 Ba	5,455.	1,091.	ppb	0.35	2000.	
137 Ba	5,380.	1,076.	ppb	0.92	#VALUE!	
182 W	7.23	1.446	ppb	4.58	1000.	
203 Tl	3.945	0.789	ppb	7.16	1000.	
205 Tl	3.864	0.7728	ppb	2.47	#VALUE!	
208 Pb	139.35	27.87	ppb	1.60	2000.	
232 Th	18.225	3.645	ppb	1.27	1000.	
238 U	4.6645	0.9329	ppb	3.70	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9060674.00	2.81	8477054.00	106.9	69.5 - 120	
45 Sc	3227731.80	0.76	2909174.30	111.0	69.5 - 120	
89 Y	3421552.80	1.30	3117971.30	109.7	69.5 - 120	
159 Tb	2782793.50	0.95	2784003.50	100.0	69.5 - 120	
209 Bi	1417610.60	2.37	1452804.80	97.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000088

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\050SMPL.D\050SMPL.D#
Date Acquired: Oct 11 2018 09:32 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2208
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0018	0.0018	ppb	56.82	100.	
11 B	1.666	1.666	ppb	11.58	1000.	
23 Na	-4.8	-4.8	ppb	7.82	200000.	
25 Mg	0.5364	0.5364	ppb	19.65	200000.	
27 Al	0.7797	0.7797	ppb	17.79	200000.	
28 Si	67.14	67.14	ppb	9.78	#VALUE!	
29 Si	-129.3	-129.3	ppb	26.19	10000.	LOW
39 K	1.7	1.7	ppb	91.12	200000.	
43 Ca	-0.4349	-0.4349	ppb	723.38	#VALUE!	
44 Ca	-7.817	-7.817	ppb	41.64	200000.	
51 V	-0.0744	-0.0744	ppb	174.71	1000.	
52 Cr	-0.1829	-0.1829	ppb	2.45	2000.	
53 Cr	-7.647	-7.647	ppb	4.56	#VALUE!	
55 Mn	0.041	0.041	ppb	40.21	2000.	
56 Fe	-1.298	-1.298	ppb	82.51	#VALUE!	
57 Fe	-1.4	-1.4	ppb	35.94	100000.	
59 Co	-0.0027	-0.0027	ppb	70.65	1000.	
60 Ni	0.0075	0.0075	ppb	86.52	1000.	
63 Cu	0.1363	0.1363	ppb	11.63	#VALUE!	
65 Cu	0.1215	0.1215	ppb	14.66	2000.	
66 Zn	0.0605	0.0605	ppb	116.37	2000.	
68 Zn	-0.8547	-0.8547	ppb	9.53	#VALUE!	
75 As	-0.1491	-0.1491	ppb	126.96	1000.	
82 Se	-0.4162	-0.4162	ppb	102.88	1000.	
88 Sr	0.0045	0.0045	ppb	13.26	2000.	
98 Mo	-0.0023	-0.0023	ppb	97.83	1000.	
107 Ag	-0.0013	-0.0013	ppb	219.64	100.	
109 Ag	-0.0021	-0.0021	ppb	341.92	#VALUE!	
111 Cd	-0.122	-0.122	ppb	41.29	#VALUE!	
114 Cd	-0.0095	-0.0095	ppb	125.81	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0207	0.0207	ppb	43.40	1000.	
120 Sn	0.0242	0.0242	ppb	53.06	#VALUE!	
121 Sb	0.0102	0.0102	ppb	25.42	#VALUE!	
123 Sb	0.0132	0.0132	ppb	27.26	1000.	
135 Ba	0.0019	0.0019	ppb	254.36	2000.	
137 Ba	0.0242	0.0242	ppb	14.14	#VALUE!	
182 W	0.005	0.005	ppb	119.74	1000.	
203 Tl	0.003	0.003	ppb	170.99	1000.	
205 Tl	0.0022	0.0022	ppb	54.20	#VALUE!	
208 Pb	0.0072	0.0072	ppb	39.20	2000.	
232 Th	0.0364	0.0364	ppb	13.58	1000.	
238 U	-0.001	-0.001	ppb	0.89	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9382872.00	1.93	8477054.00	110.7	69.5 - 120	
45 Sc	3222189.50	1.19	2909174.30	110.8	69.5 - 120	
89 Y	3437861.00	0.70	3117971.30	110.3	69.5 - 120	
159 Tb	2896143.80	1.22	2784003.50	104.0	69.5 - 120	
209 Bi	1565453.30	0.62	1452804.80	107.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000089

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\051_CCV.D\051_CCV.D#
Date Acquired: Oct 11 2018 09:36 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.21	ppb	1.57	25	96.84	
11 B	24.91	ppb	3.36	25	99.64	
23 Na	4,835.	ppb	1.88	5,000	96.7	
25 Mg	4,820.	ppb	0.68	5,000	96.4	
27 Al	484.2	ppb	1.23	500	96.84	
28 Si	550.4	ppb	2.65	500	110.08	
29 Si	391.7	ppb	7.86	500	78.34	Fail
39 K	4,963.	ppb	0.78	5,000	99.26	
43 Ca	4,888.	ppb	2.87	5,000	97.76	
44 Ca	5,090.	ppb	0.28	5,000	101.8	
51 V	25.45	ppb	2.36	25	101.8	
52 Cr	24.95	ppb	2.42	25	99.8	
53 Cr	18.17	ppb	8.43	25	72.68	
55 Mn	25.31	ppb	2.72	25	101.24	
56 Fe	4,716.	ppb	2.21	5,000	94.32	
57 Fe	4,754.	ppb	2.07	5,000	95.08	
59 Co	24.45	ppb	2.81	25	97.8	
60 Ni	23.22	ppb	1.68	25	92.88	
63 Cu	23.59	ppb	2.26	25	94.36	
65 Cu	23.85	ppb	2.11	25	95.4	
66 Zn	21.11	ppb	3.11	25	84.44	Fail
68 Zn	21.19	ppb	1.56	25	84.76	
75 As	25.65	ppb	1.29	25	102.6	
82 Se	25.47	ppb	3.77	25	101.88	
88 Sr	26.69	ppb	1.25	25	106.76	
98 Mo	24.13	ppb	2.14	25	96.52	
107 Ag	24.04	ppb	1.52	25	96.16	
109 Ag	23.98	ppb	2.59	25	95.92	
111 Cd	23.65	ppb	2.45	25	94.6	
114 Cd	23.86	ppb	2.04	25	95.44	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.3	ppb	2.69	25	101.2	
120 Sn	25.09	ppb	1.94	25	100.36	
121 Sb	25.5	ppb	2.38	25	102	
123 Sb	25.78	ppb	2.12	25	103.12	
135 Ba	25.14	ppb	2.73	25	100.56	
137 Ba	25.67	ppb	1.85	25	102.68	
182 W	24.83	ppb	1.38	25	99.32	
203 Tl	25.1	ppb	1.61	25	100.4	
205 Tl	24.96	ppb	1.18	25	99.84	
208 Pb	24.71	ppb	2.17	25	98.84	
232 Th	26.41	ppb	0.48	25	105.64	
238 U	26.24	ppb	2.66	25	104.96	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9129816.00	3.48	8477054.00	107.7	80 - 120.4	
45 Sc	3170472.80	1.01	2909174.30	109.0	80 - 120.4	
89 Y	3395766.50	0.54	3117971.30	108.9	80 - 120.4	
159 Tb	2851377.80	0.41	2784003.50	102.4	80 - 120.4	
209 Bi	1505096.40	0.73	1452804.80	103.6	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000090

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\052_CCB.D\052_CCB.D#
Date Acquired: Oct 11 2018 09:40 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0012	ppb	119.55	1.00	
11 B	0.665	ppb	11.31	1.00	
23 Na	-5.084	ppb	4.98	1.00	
25 Mg	0.0618	ppb	42.37	1.00	
27 Al	0.2596	ppb	25.64	1.00	
28 Si	82.24	ppb	52.71	1.00	
29 Si	-113.4	ppb	80.25	1.00	
39 K	2.446	ppb	68.44	1.00	
43 Ca	-3.143	ppb	61.37	1.00	
44 Ca	-10.02	ppb	10.67	1.00	
51 V	-0.0257	ppb	970.79	1.00	
52 Cr	-0.2331	ppb	6.61	1.00	
53 Cr	-9.576	ppb	7.57	1.00	
55 Mn	0.0051	ppb	75.71	1.00	
56 Fe	-2.348	ppb	79.43	1.00	
57 Fe	-0.0453	ppb	2325.00	1.00	
59 Co	-0.0015	ppb	87.48	1.00	
60 Ni	-0.0071	ppb	94.03	1.00	
63 Cu	0.0686	ppb	15.79	1.00	
65 Cu	0.0454	ppb	15.43	1.00	
66 Zn	0.0137	ppb	229.66	1.00	
68 Zn	-0.8158	ppb	56.03	1.00	
75 As	-0.2138	ppb	91.39	1.00	
82 Se	-0.3795	ppb	94.05	1.00	
88 Sr	-0.0028	ppb	196.14	1.00	
98 Mo	0.0043	ppb	109.17	1.00	
107 Ag	-0.0068	ppb	52.70	1.00	
109 Ag	-0.0012	ppb	805.67	1.00	
111 Cd	-0.114	ppb	41.71	1.00	
114 Cd	-0.0018	ppb	865.22	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0334	ppb	40.69	1.00	
120 Sn	0.0293	ppb	7.50	1.00	
121 Sb	0.0105	ppb	28.00	1.00	
123 Sb	0.0144	ppb	22.75	1.00	
135 Ba	0.0097	ppb	91.38	1.00	
137 Ba	0.0065	ppb	78.87	1.00	
182 W	0.0296	ppb	15.08	1.00	
203 Tl	0.0118	ppb	38.46	1.00	
205 Tl	0.0027	ppb	41.48	1.00	
208 Pb	0.0067	ppb	74.66	1.00	
232 Th	0.1263	ppb	28.42	1.00	
238 U	0.0007	ppb	129.84	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9224752.00	2.88	8477054.00	108.8	79.5 - 120	
45 Sc	3141844.30	2.31	2909174.30	108.0	79.5 - 120	
89 Y	3379546.80	1.89	3117971.30	108.4	79.5 - 120	
159 Tb	2853595.30	1.78	2784003.50	102.5	79.5 - 120	
209 Bi	1546342.60	1.69	1452804.80	106.4	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000091

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\053SMPL.D\053SMPL.D#
Date Acquired: Oct 11 2018 09:45 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: PBWLJ09IMW1
Misc Info:
Vial Number: 2209
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0058	0.0012	ppb	33.29	100.	
11 B	8.585	1.717	ppb	5.23	1000.	
23 Na	-6.305	-1.261	ppb	19.83	200000.	
25 Mg	13.225	2.645	ppb	1.81	200000.	
27 Al	10.	2.	ppb	4.91	200000.	
28 Si	293.75	58.75	ppb	13.48	#VALUE!	
29 Si	-581.	-116.2	ppb	20.03	10000.	LOW
39 K	22.48	4.496	ppb	33.56	200000.	
43 Ca	42.505	8.501	ppb	61.80	#VALUE!	
44 Ca	-15.535	-3.107	ppb	31.76	200000.	
51 V	-0.827	-0.1654	ppb	188.94	1000.	
52 Cr	1.9145	0.3829	ppb	11.98	2000.	
53 Cr	80.05	16.01	ppb	9.21	#VALUE!	
55 Mn	0.3595	0.0719	ppb	17.81	2000.	
56 Fe	4.3695	0.8739	ppb	104.90	#VALUE!	
57 Fe	8.4	1.68	ppb	143.45	100000.	
59 Co	0.0098	0.002	ppb	268.53	1000.	
60 Ni	0.1224	0.0245	ppb	15.33	1000.	
63 Cu	1.216	0.2432	ppb	5.31	#VALUE!	
65 Cu	1.09	0.218	ppb	10.05	2000.	
66 Zn	1.3985	0.2797	ppb	25.86	2000.	
68 Zn	-4.592	-0.9184	ppb	22.29	#VALUE!	
75 As	-0.763	-0.1526	ppb	21.76	1000.	
82 Se	-0.548	-0.1096	ppb	209.85	1000.	
88 Sr	0.0759	0.0152	ppb	32.86	2000.	
98 Mo	0.0221	0.0044	ppb	182.95	1000.	
107 Ag	0.03	0.006	ppb	61.77	100.	
109 Ag	0.0164	0.0033	ppb	244.64	#VALUE!	
111 Cd	-0.4027	-0.0805	ppb	56.85	#VALUE!	
114 Cd	0.0423	0.0085	ppb	175.91	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.5375	0.1075	ppb	14.88	1000.	
120 Sn	0.537	0.1074	ppb	14.07	#VALUE!	
121 Sb	0.0958	0.0192	ppb	32.48	#VALUE!	
123 Sb	0.0726	0.0145	ppb	4.78	1000.	
135 Ba	0.0997	0.0199	ppb	95.08	2000.	
137 Ba	0.1033	0.0207	ppb	36.04	#VALUE!	
182 W	0.0429	0.0086	ppb	61.02	1000.	
203 Tl	0.0198	0.004	ppb	135.68	1000.	
205 Tl	0.0037	0.0007	ppb	140.07	#VALUE!	
208 Pb	0.1969	0.0394	ppb	21.00	2000.	
232 Th	0.641	0.1282	ppb	39.13	1000.	
238 U	-0.0028	-0.0006	ppb	181.91	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9530777.00	0.07	8477054.00	112.4	69.5 - 120	
45 Sc	3138597.80	0.30	2909174.30	107.9	69.5 - 120	
89 Y	3323859.50	0.91	3117971.30	106.6	69.5 - 120	
159 Tb	2783944.30	0.96	2784003.50	100.0	69.5 - 120	
209 Bi	1479046.60	0.97	1452804.80	101.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000092

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\054SMPL.D\054SMPL.D#
Date Acquired: Oct 11 2018 09:49 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: LCSWLJ09IMW1
Misc Info:
Vial Number: 2210
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	51.35	10.27	ppb	0.87	100.	
11 B	502.5	100.5	ppb	2.39	1000.	
23 Na	7,995.	1,599.	ppb	0.90	200000.	
25 Mg	5,465.	1,093.	ppb	0.83	200000.	
27 Al	2,198.5	439.7	ppb	0.87	200000.	
28 Si	1,207.	241.4	ppb	1.82	#VALUE!	
29 Si	253.65	50.73	ppb	23.00	10000.	
39 K	10,750.	2,150.	ppb	1.04	200000.	
43 Ca	3,423.5	684.7	ppb	3.32	#VALUE!	
44 Ca	3,044.	608.8	ppb	1.37	200000.	
51 V	532.5	106.5	ppb	1.21	1000.	
52 Cr	220.65	44.13	ppb	2.54	2000.	
53 Cr	308.8	61.76	ppb	4.03	#VALUE!	
55 Mn	524.	104.8	ppb	1.84	2000.	
56 Fe	1,068.	213.6	ppb	4.27	#VALUE!	
57 Fe	1,134.	226.8	ppb	5.71	100000.	
59 Co	526.	105.2	ppb	1.61	1000.	
60 Ni	501.5	100.3	ppb	3.52	1000.	
63 Cu	257.2	51.44	ppb	2.85	#VALUE!	
65 Cu	264.3	52.86	ppb	3.27	2000.	
66 Zn	441.	88.2	ppb	2.11	2000.	
68 Zn	579.	115.8	ppb	2.11	#VALUE!	
75 As	106.15	21.23	ppb	1.54	1000.	
82 Se	101.	20.2	ppb	5.32	1000.	
88 Sr	532.	106.4	ppb	0.68	2000.	
98 Mo	98.95	19.79	ppb	2.49	1000.	
107 Ag	52.5	10.5	ppb	2.59	100.	
109 Ag	52.2	10.44	ppb	3.05	#VALUE!	
111 Cd	246.3	49.26	ppb	3.66	#VALUE!	
114 Cd	247.8	49.56	ppb	3.10	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	539.	107.8	ppb	2.16	1000.	
120 Sn	532.	106.4	ppb	1.87	#VALUE!	
121 Sb	106.6	21.32	ppb	2.03	#VALUE!	
123 Sb	108.85	21.77	ppb	1.84	1000.	
135 Ba	2,221.5	444.3	ppb	2.17	2000.	
137 Ba	2,146.5	429.3	ppb	0.05	#VALUE!	
182 W	105.15	21.03	ppb	0.90	1000.	
203 Tl	103.65	20.73	ppb	2.32	1000.	
205 Tl	104.55	20.91	ppb	2.76	#VALUE!	
208 Pb	103.75	20.75	ppb	2.97	2000.	
232 Th	108.35	21.67	ppb	0.50	1000.	
238 U	108.6	21.72	ppb	1.73	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9685569.00	1.84	8477054.00	114.3	69.5 - 120	
45 Sc	3159079.30	0.29	2909174.30	108.6	69.5 - 120	
89 Y	3327009.50	1.05	3117971.30	106.7	69.5 - 120	
159 Tb	2782413.80	0.43	2784003.50	99.9	69.5 - 120	
209 Bi	1476344.60	0.94	1452804.80	101.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000093

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\055SMPL.D\055SMPL.D#
Date Acquired: Oct 11 2018 09:53 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9735-001
Misc Info:
Vial Number: 2211
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0208	0.0042	ppb	52.54	100.	
11 B	84.05	16.81	ppb	2.93	1000.	
23 Na	24,610.	4,922.	ppb	1.36	200000.	
25 Mg	5,835.	1,167.	ppb	1.51	200000.	
27 Al	246.65	49.33	ppb	2.26	200000.	
28 Si	8,450.	1,690.	ppb	0.45	#VALUE!	
29 Si	6,950.	1,390.	ppb	3.65	10000.	
39 K	10,335.	2,067.	ppb	0.57	200000.	
43 Ca	72,000.	14,400.	ppb	0.89	#VALUE!	
44 Ca	72,050.	14,410.	ppb	0.73	200000.	
51 V	1.9195	0.3839	ppb	43.97	1000.	
52 Cr	2.759	0.5518	ppb	1.78	2000.	
53 Cr	68.75	13.75	ppb	9.53	#VALUE!	
55 Mn	338.9	67.78	ppb	2.28	2000.	
56 Fe	3,180.	636.	ppb	2.67	#VALUE!	
57 Fe	4,063.5	812.7	ppb	3.93	100000.	
59 Co	1.431	0.2862	ppb	3.93	1000.	
60 Ni	6.625	1.325	ppb	9.17	1000.	
63 Cu	2.9285	0.5857	ppb	1.44	#VALUE!	
65 Cu	2.7575	0.5515	ppb	7.11	2000.	
66 Zn	54.65	10.93	ppb	1.79	2000.	
68 Zn	60.65	12.13	ppb	3.43	#VALUE!	
75 As	1.1905	0.2381	ppb	166.99	1000.	
82 Se	0.0989	0.0198	ppb	5215.00	1000.	
88 Sr	302.25	60.45	ppb	0.43	2000.	
98 Mo	6.2	1.24	ppb	3.27	1000.	
107 Ag	0.0103	0.0021	ppb	452.83	100.	
109 Ag	-0.0123	-0.0025	ppb	134.02	#VALUE!	
111 Cd	-0.1072	-0.0214	ppb	381.47	#VALUE!	
114 Cd	0.3977	0.0795	ppb	9.79	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.652	0.1304	ppb	8.76	1000.	
120 Sn	0.5575	0.1115	ppb	5.25	#VALUE!	
121 Sb	0.4378	0.0876	ppb	4.12	#VALUE!	
123 Sb	0.5495	0.1099	ppb	3.33	1000.	
135 Ba	174.9	34.98	ppb	1.94	2000.	
137 Ba	177.75	35.55	ppb	1.45	#VALUE!	
182 W	0.1739	0.0348	ppb	18.61	1000.	
203 Tl	0.0737	0.0147	ppb	31.05	1000.	
205 Tl	0.0569	0.0114	ppb	21.27	#VALUE!	
208 Pb	1.1965	0.2393	ppb	2.98	2000.	
232 Th	1.671	0.3342	ppb	46.77	1000.	
238 U	0.8365	0.1673	ppb	9.21	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9464612.00	2.79	8477054.00	111.6	69.5 - 120	
45 Sc	3121792.80	1.52	2909174.30	107.3	69.5 - 120	
89 Y	3291757.50	0.72	3117971.30	105.6	69.5 - 120	
159 Tb	2765469.80	0.66	2784003.50	99.3	69.5 - 120	
209 Bi	1456957.80	1.47	1452804.80	100.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000094

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\056SMPL.D\056SMPL.D#
Date Acquired: Oct 11 2018 09:57 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9735-002
Misc Info:
Vial Number: 2212
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0118	0.0024	ppb	41.47	100.	
11 B	811.5	162.3	ppb	2.69	1000.	
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	138,200.	27,640.	ppb	0.98	200000.	
27 Al	16.66	3.332	ppb	5.14	200000.	
28 Si	9,525.	1,905.	ppb	1.03	#VALUE!	
29 Si	8,490.	1,698.	ppb	1.74	10000.	
39 K	64,550.	12,910.	ppb	0.21	200000.	
43 Ca	229,200.	45,840.	ppb	0.53	#VALUE!	
44 Ca	230,450.	46,090.	ppb	0.19	200000.	
51 V	2.01	0.402	ppb	115.50	1000.	
52 Cr	4.372	0.8744	ppb	3.74	2000.	
53 Cr	141.65	28.33	ppb	8.52	#VALUE!	
55 Mn	794.	158.8	ppb	2.85	2000.	
56 Fe	4,853.	970.6	ppb	3.05	#VALUE!	
57 Fe	7,115.	1,423.	ppb	5.59	100000.	
59 Co	1.336	0.2672	ppb	2.52	1000.	
60 Ni	8.015	1.603	ppb	7.82	1000.	
63 Cu	27.505	5.501	ppb	1.96	#VALUE!	
65 Cu	1.5965	0.3193	ppb	3.91	2000.	
66 Zn	12.585	2.517	ppb	4.10	2000.	
68 Zn	21.38	4.276	ppb	10.66	#VALUE!	
75 As	9.275	1.855	ppb	24.71	1000.	
82 Se	12.025	2.405	ppb	27.32	1000.	
88 Sr	1,602.5	320.5	ppb	0.55	2000.	
98 Mo	1.801	0.3602	ppb	8.26	1000.	
107 Ag	0.0143	0.0029	ppb	78.66	100.	
109 Ag	-0.0192	-0.0038	ppb	167.81	#VALUE!	
111 Cd	-0.0773	-0.0155	ppb	340.06	#VALUE!	
114 Cd	0.4623	0.0925	ppb	13.28	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.3524	0.0705	ppb	38.51	1000.	
120 Sn	0.4447	0.0889	ppb	3.56	#VALUE!	
121 Sb	0.2775	0.0555	ppb	9.02	#VALUE!	
123 Sb	0.2569	0.0514	ppb	13.83	1000.	
135 Ba	129.7	25.94	ppb	2.33	2000.	
137 Ba	128.85	25.77	ppb	2.78	#VALUE!	
182 W	2.963	0.5926	ppb	6.45	1000.	
203 Tl	0.0455	0.0091	ppb	91.42	1000.	
205 Tl	0.0417	0.0083	ppb	64.37	#VALUE!	
208 Pb	0.1165	0.0233	ppb	18.73	2000.	
232 Th	0.478	0.0956	ppb	19.41	1000.	
238 U	2.728	0.5456	ppb	2.30	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8195410.50	3.02	8477054.00	96.7	69.5 - 120	
45 Sc	3042320.30	0.67	2909174.30	104.6	69.5 - 120	
89 Y	3159317.00	1.86	3117971.30	101.3	69.5 - 120	
159 Tb	2655263.50	1.19	2784003.50	95.4	69.5 - 120	
209 Bi	1303317.60	2.41	1452804.80	89.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000095

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\057SMPL.D\057SMPL.D#
Date Acquired: Oct 11 2018 10:01 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9735-003
Misc Info:
Vial Number: 2301
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0151	0.003	ppb	59.76	100.	
11 B	282.2	56.44	ppb	1.99	1000.	
23 Na	670,000.	134,000.	ppb	1.11	200000.	
25 Mg	67,250.	13,450.	ppb	0.93	200000.	
27 Al	34.18	6.836	ppb	2.08	200000.	
28 Si	7,810.	1,562.	ppb	0.55	#VALUE!	
29 Si	6,815.	1,363.	ppb	2.39	10000.	
39 K	42,260.	8,452.	ppb	0.86	200000.	
43 Ca	185,200.	37,040.	ppb	0.79	#VALUE!	
44 Ca	185,950.	37,190.	ppb	0.94	200000.	
51 V	4.3135	0.8627	ppb	38.65	1000.	
52 Cr	4.548	0.9096	ppb	5.25	2000.	
53 Cr	160.25	32.05	ppb	0.75	#VALUE!	
55 Mn	1,075.5	215.1	ppb	2.20	2000.	
56 Fe	543.5	108.7	ppb	4.73	#VALUE!	
57 Fe	2,100.5	420.1	ppb	6.39	100000.	
59 Co	1.2735	0.2547	ppb	4.15	1000.	
60 Ni	7.69	1.538	ppb	4.73	1000.	
63 Cu	17.595	3.519	ppb	4.27	#VALUE!	
65 Cu	4.2195	0.8439	ppb	8.26	2000.	
66 Zn	5.405	1.081	ppb	9.00	2000.	
68 Zn	10.83	2.166	ppb	16.24	#VALUE!	
75 As	7.4	1.48	ppb	13.43	1000.	
82 Se	4.9745	0.9949	ppb	26.73	1000.	
88 Sr	847.	169.4	ppb	0.48	2000.	
98 Mo	150.3	30.06	ppb	2.27	1000.	
107 Ag	-0.0098	-0.002	ppb	400.61	100.	
109 Ag	-0.0327	-0.0065	ppb	60.01	#VALUE!	
111 Cd	-0.2751	-0.055	ppb	86.97	#VALUE!	
114 Cd	0.1391	0.0278	ppb	25.19	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.6915	0.1383	ppb	13.25	1000.	
120 Sn	0.6795	0.1359	ppb	5.52	#VALUE!	
121 Sb	1.239	0.2478	ppb	5.42	#VALUE!	
123 Sb	1.2565	0.2513	ppb	4.02	1000.	
135 Ba	142.85	28.57	ppb	0.56	2000.	
137 Ba	143.8	28.76	ppb	0.65	#VALUE!	
182 W	0.599	0.1198	ppb	1.82	1000.	
203 Tl	0.0125	0.0025	ppb	117.26	1000.	
205 Tl	0.004	0.0008	ppb	301.07	#VALUE!	
208 Pb	0.643	0.1286	ppb	6.72	2000.	
232 Th	0.2274	0.0455	ppb	2.54	1000.	
238 U	230.15	46.03	ppb	0.86	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8230044.00	2.19	8477054.00	97.1	69.5 - 120	
45 Sc	3071845.00	1.09	2909174.30	105.6	69.5 - 120	
89 Y	3185613.00	1.18	3117971.30	102.2	69.5 - 120	
159 Tb	2696016.50	0.12	2784003.50	96.8	69.5 - 120	
209 Bi	1355408.50	1.42	1452804.80	93.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000096

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\058SMPL.D\058SMPL.D#
Date Acquired: Oct 11 2018 10:05 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9735-004
Misc Info:
Vial Number: 2302
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0171	0.0034	ppb	40.03	100.	
11 B	289.3	57.86	ppb	1.50	1000.	
23 Na	665,000.	133,000.	ppb	1.40	200000.	
25 Mg	61,250.	12,250.	ppb	0.28	200000.	
27 Al	105.25	21.05	ppb	2.48	200000.	
28 Si	7,855.	1,571.	ppb	0.62	#VALUE!	
29 Si	7,035.	1,407.	ppb	0.47	10000.	
39 K	72,400.	14,480.	ppb	1.43	200000.	
43 Ca	217,300.	43,460.	ppb	1.53	#VALUE!	
44 Ca	216,550.	43,310.	ppb	0.83	200000.	
51 V	2.125	0.425	ppb	81.29	1000.	
52 Cr	5.42	1.084	ppb	7.66	2000.	
53 Cr	156.05	31.21	ppb	2.32	#VALUE!	
55 Mn	637.5	127.5	ppb	1.66	2000.	
56 Fe	397.	79.4	ppb	4.21	#VALUE!	
57 Fe	2,265.	453.	ppb	7.22	100000.	
59 Co	1.0515	0.2103	ppb	12.87	1000.	
60 Ni	7.235	1.447	ppb	7.64	1000.	
63 Cu	15.605	3.121	ppb	1.65	#VALUE!	
65 Cu	2.749	0.5498	ppb	5.61	2000.	
66 Zn	4.098	0.8196	ppb	12.57	2000.	
68 Zn	11.785	2.357	ppb	2.81	#VALUE!	
75 As	1.858	0.3716	ppb	55.25	1000.	
82 Se	7.62	1.524	ppb	17.78	1000.	
88 Sr	1,451.	290.2	ppb	0.64	2000.	
98 Mo	21.01	4.202	ppb	2.40	1000.	
107 Ag	-0.0112	-0.0022	ppb	115.01	100.	
109 Ag	0.006	0.0012	ppb	557.07	#VALUE!	
111 Cd	-0.228	-0.0456	ppb	145.07	#VALUE!	
114 Cd	0.0736	0.0147	ppb	87.29	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.3893	0.0779	ppb	7.07	1000.	
120 Sn	0.4315	0.0863	ppb	8.13	#VALUE!	
121 Sb	0.55	0.11	ppb	15.14	#VALUE!	
123 Sb	0.596	0.1192	ppb	6.42	1000.	
135 Ba	176.85	35.37	ppb	1.46	2000.	
137 Ba	177.3	35.46	ppb	1.80	#VALUE!	
182 W	0.7	0.14	ppb	15.69	1000.	
203 Tl	0.0045	0.0009	ppb	13.97	1000.	
205 Tl	0.0137	0.0027	ppb	77.10	#VALUE!	
208 Pb	0.4134	0.0827	ppb	5.62	2000.	
232 Th	0.2472	0.0494	ppb	16.53	1000.	
238 U	121.95	24.39	ppb	2.24	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8261166.50	2.40	8477054.00	97.5	69.5 - 120	
45 Sc	3016145.30	0.33	2909174.30	103.7	69.5 - 120	
89 Y	3147789.00	0.99	3117971.30	101.0	69.5 - 120	
159 Tb	2688689.00	0.41	2784003.50	96.6	69.5 - 120	
209 Bi	1335658.90	2.51	1452804.80	91.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000097

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\059SMPL.D\059SMPL.D#
Date Acquired: Oct 11 2018 10:09 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9735-005
Misc Info:
Vial Number: 2303
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.015	0.003	ppb	17.22	100.	
11 B	312.35	62.47	ppb	1.44	1000.	
23 Na	686,000.	137,200.	ppb	0.86	200000.	
25 Mg	65,900.	13,180.	ppb	1.63	200000.	
27 Al	63.65	12.73	ppb	2.19	200000.	
28 Si	8,555.	1,711.	ppb	1.43	#VALUE!	
29 Si	7,735.	1,547.	ppb	3.28	10000.	
39 K	78,250.	15,650.	ppb	0.39	200000.	
43 Ca	224,600.	44,920.	ppb	0.56	#VALUE!	
44 Ca	226,150.	45,230.	ppb	1.13	200000.	
51 V	1.31	0.262	ppb	81.83	1000.	
52 Cr	4.1125	0.8225	ppb	4.97	2000.	
53 Cr	162.55	32.51	ppb	1.79	#VALUE!	
55 Mn	659.5	131.9	ppb	1.96	2000.	
56 Fe	293.95	58.79	ppb	6.39	#VALUE!	
57 Fe	2,292.	458.4	ppb	4.86	100000.	
59 Co	1.0765	0.2153	ppb	10.03	1000.	
60 Ni	5.415	1.083	ppb	7.12	1000.	
63 Cu	16.	3.2	ppb	2.72	#VALUE!	
65 Cu	2.4615	0.4923	ppb	17.03	2000.	
66 Zn	2.621	0.5242	ppb	3.25	2000.	
68 Zn	7.5	1.5	ppb	13.03	#VALUE!	
75 As	1.507	0.3014	ppb	58.03	1000.	
82 Se	4.4245	0.8849	ppb	31.43	1000.	
88 Sr	1,521.	304.2	ppb	0.66	2000.	
98 Mo	11.62	2.324	ppb	2.04	1000.	
107 Ag	0.0133	0.0027	ppb	263.52	100.	
109 Ag	-0.0094	-0.0019	ppb	222.32	#VALUE!	
111 Cd	0.0732	0.0146	ppb	268.65	#VALUE!	
114 Cd	0.0796	0.0159	ppb	45.32	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.3015	0.0603	ppb	39.83	1000.	
120 Sn	0.3574	0.0715	ppb	11.26	#VALUE!	
121 Sb	0.2752	0.055	ppb	9.63	#VALUE!	
123 Sb	0.3547	0.0709	ppb	15.73	1000.	
135 Ba	177.75	35.55	ppb	1.93	2000.	
137 Ba	181.75	36.35	ppb	1.78	#VALUE!	
182 W	0.8215	0.1643	ppb	10.58	1000.	
203 Tl	0.0299	0.006	ppb	54.51	1000.	
205 Tl	0.0105	0.0021	ppb	145.33	#VALUE!	
208 Pb	0.2286	0.0457	ppb	9.94	2000.	
232 Th	0.2109	0.0422	ppb	9.22	1000.	
238 U	62.6	12.52	ppb	0.29	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8283974.00	1.27	8477054.00	97.7	69.5 - 120	
45 Sc	3022942.80	0.66	2909174.30	103.9	69.5 - 120	
89 Y	3116172.50	1.10	3117971.30	99.9	69.5 - 120	
159 Tb	2657327.30	0.49	2784003.50	95.4	69.5 - 120	
209 Bi	1323377.80	1.37	1452804.80	91.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000098

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\060SMPL.D\060SMPL.D#
Date Acquired: Oct 11 2018 10:13 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9735-006
Misc Info:
Vial Number: 2304
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.016	0.0032	ppb	47.28	100.	
11 B	78.4	15.68	ppb	2.91	1000.	
23 Na	234,550.	46,910.	ppb	1.17	200000.	
25 Mg	28,320.	5,664.	ppb	1.68	200000.	
27 Al	17.085	3.417	ppb	4.43	200000.	
28 Si	7,055.	1,411.	ppb	0.37	#VALUE!	
29 Si	6,225.	1,245.	ppb	1.64	10000.	
39 K	27,995.	5,599.	ppb	0.24	200000.	
43 Ca	144,300.	28,860.	ppb	1.25	#VALUE!	
44 Ca	141,750.	28,350.	ppb	0.23	200000.	
51 V	1.173	0.2346	ppb	3.78	1000.	
52 Cr	3.0325	0.6065	ppb	17.23	2000.	
53 Cr	123.	24.6	ppb	13.44	#VALUE!	
55 Mn	1,137.	227.4	ppb	2.66	2000.	
56 Fe	5,020.	1,004.	ppb	3.41	#VALUE!	
57 Fe	6,765.	1,353.	ppb	4.43	100000.	
59 Co	0.721	0.1442	ppb	7.00	1000.	
60 Ni	2.6535	0.5307	ppb	0.99	1000.	
63 Cu	6.56	1.312	ppb	5.78	#VALUE!	
65 Cu	2.21	0.442	ppb	4.56	2000.	
66 Zn	4.1455	0.8291	ppb	5.92	2000.	
68 Zn	0.8675	0.1735	ppb	143.34	#VALUE!	
75 As	2.4795	0.4959	ppb	18.52	1000.	
82 Se	1.338	0.2676	ppb	364.31	1000.	
88 Sr	689.	137.8	ppb	0.30	2000.	
98 Mo	5.805	1.161	ppb	2.43	1000.	
107 Ag	0.0039	0.0008	ppb	588.59	100.	
109 Ag	0.0128	0.0026	ppb	156.63	#VALUE!	
111 Cd	0.2543	0.0509	ppb	122.81	#VALUE!	
114 Cd	0.0875	0.0175	ppb	82.33	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.3115	0.0623	ppb	39.76	1000.	
120 Sn	0.3713	0.0743	ppb	17.37	#VALUE!	
121 Sb	0.1408	0.0282	ppb	11.90	#VALUE!	
123 Sb	0.1932	0.0386	ppb	24.04	1000.	
135 Ba	91.	18.2	ppb	0.59	2000.	
137 Ba	93.1	18.62	ppb	1.31	#VALUE!	
182 W	0.3334	0.0667	ppb	19.99	1000.	
203 Tl	0.0259	0.0052	ppb	81.08	1000.	
205 Tl	0.0184	0.0037	ppb	21.30	#VALUE!	
208 Pb	0.2045	0.0409	ppb	17.16	2000.	
232 Th	0.1227	0.0245	ppb	16.40	1000.	
238 U	0.5495	0.1099	ppb	6.12	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8644434.00	2.30	8477054.00	102.0	69.5 - 120	
45 Sc	3012313.00	0.85	2909174.30	103.5	69.5 - 120	
89 Y	3112315.30	0.68	3117971.30	99.8	69.5 - 120	
159 Tb	2663011.30	0.46	2784003.50	95.7	69.5 - 120	
209 Bi	1365249.60	1.03	1452804.80	94.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000099

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\061SMPL.D\061SMPL.D#
Date Acquired: Oct 11 2018 10:18 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9735-007
Misc Info:
Vial Number: 2305
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0117	0.0023	ppb	65.33	100.	
11 B	60.5	12.1	ppb	2.37	1000.	
23 Na	6,570.	1,314.	ppb	0.63	200000.	
25 Mg	7,815.	1,563.	ppb	1.17	200000.	
27 Al	9.965	1.993	ppb	0.93	200000.	
28 Si	9,625.	1,925.	ppb	0.10	#VALUE!	
29 Si	8,380.	1,676.	ppb	0.14	10000.	
39 K	13,505.	2,701.	ppb	1.41	200000.	
43 Ca	116,000.	23,200.	ppb	0.79	#VALUE!	
44 Ca	115,100.	23,020.	ppb	0.64	200000.	
51 V	7.06	1.412	ppb	11.87	1000.	
52 Cr	2.527	0.5054	ppb	5.72	2000.	
53 Cr	112.9	22.58	ppb	5.53	#VALUE!	
55 Mn	301.4	60.28	ppb	1.51	2000.	
56 Fe	135.7	27.14	ppb	9.56	#VALUE!	
57 Fe	1,178.5	235.7	ppb	3.89	100000.	
59 Co	0.8525	0.1705	ppb	6.39	1000.	
60 Ni	24.57	4.914	ppb	3.18	1000.	
63 Cu	3.5065	0.7013	ppb	7.88	#VALUE!	
65 Cu	3.7925	0.7585	ppb	5.39	2000.	
66 Zn	398.2	79.64	ppb	2.33	2000.	
68 Zn	366.15	73.23	ppb	0.87	#VALUE!	
75 As	1.1995	0.2399	ppb	68.70	1000.	
82 Se	1.1725	0.2345	ppb	208.02	1000.	
88 Sr	447.75	89.55	ppb	0.39	2000.	
98 Mo	8.535	1.707	ppb	2.16	1000.	
107 Ag	0.0035	0.0007	ppb	697.76	100.	
109 Ag	-0.0121	-0.0024	ppb	119.35	#VALUE!	
111 Cd	1.1675	0.2335	ppb	54.56	#VALUE!	
114 Cd	0.9105	0.1821	ppb	12.38	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.4266	0.0853	ppb	15.93	1000.	
120 Sn	0.5395	0.1079	ppb	19.69	#VALUE!	
121 Sb	0.457	0.0914	ppb	7.37	#VALUE!	
123 Sb	0.532	0.1064	ppb	15.12	1000.	
135 Ba	31.65	6.33	ppb	1.84	2000.	
137 Ba	32.45	6.49	ppb	0.71	#VALUE!	
182 W	0.2343	0.0469	ppb	8.02	1000.	
203 Tl	0.0554	0.0111	ppb	14.17	1000.	
205 Tl	0.0438	0.0088	ppb	27.28	#VALUE!	
208 Pb	0.0931	0.0186	ppb	38.11	2000.	
232 Th	0.1453	0.0291	ppb	12.86	1000.	
238 U	1.3515	0.2703	ppb	7.18	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9136031.00	3.03	8477054.00	107.8	69.5 - 120	
45 Sc	3030957.80	0.32	2909174.30	104.2	69.5 - 120	
89 Y	3122403.30	0.84	3117971.30	100.1	69.5 - 120	
159 Tb	2696815.00	0.43	2784003.50	96.9	69.5 - 120	
209 Bi	1417657.60	1.57	1452804.80	97.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000100

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\062SMPL.D\062SMPL.D#
Date Acquired: Oct 11 2018 10:22 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9735-007L
Misc Info:
Vial Number: 2306
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0372	0.0015	ppb	43.84	100.	
11 B	67.45	2.698	ppb	3.32	1000.	
23 Na	6,572.5	262.9	ppb	3.38	200000.	
25 Mg	7,592.5	303.7	ppb	0.74	200000.	
27 Al	24.275	0.971	ppb	5.62	200000.	
28 Si	10,320.	412.8	ppb	5.42	#VALUE!	
29 Si	8,037.5	321.5	ppb	16.31	10000.	
39 K	13,457.5	538.3	ppb	1.93	200000.	
43 Ca	116,150.	4,646.	ppb	0.73	#VALUE!	
44 Ca	117,350.	4,694.	ppb	1.84	200000.	
51 V	4.675	0.187	ppb	100.91	1000.	
52 Cr	0.5698	0.0228	ppb	97.02	2000.	
53 Cr	21.2975	0.8519	ppb	52.47	#VALUE!	
55 Mn	321.75	12.87	ppb	1.74	2000.	
56 Fe	130.5	5.22	ppb	43.81	#VALUE!	
57 Fe	1,209.25	48.37	ppb	6.09	100000.	
59 Co	0.7643	0.0306	ppb	11.92	1000.	
60 Ni	22.6025	0.9041	ppb	2.99	1000.	
63 Cu	4.1225	0.1649	ppb	15.99	#VALUE!	
65 Cu	3.76	0.1504	ppb	1.58	2000.	
66 Zn	411.	16.44	ppb	0.82	2000.	
68 Zn	351.5	14.06	ppb	1.66	#VALUE!	
75 As	-1.846	-0.0738	ppb	356.72	1000.	
82 Se	0.6475	0.0259	ppb	1261.80	1000.	
88 Sr	493.	19.72	ppb	1.71	2000.	
98 Mo	8.7775	0.3511	ppb	4.08	1000.	
107 Ag	0.1081	0.0043	ppb	70.95	100.	
109 Ag	-0.0323	-0.0013	ppb	331.27	#VALUE!	
111 Cd	2.575	0.103	ppb	26.70	#VALUE!	
114 Cd	0.9443	0.0378	ppb	14.79	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.5928	0.0237	ppb	74.32	1000.	
120 Sn	0.4458	0.0178	ppb	35.58	#VALUE!	
121 Sb	0.513	0.0205	ppb	27.84	#VALUE!	
123 Sb	0.394	0.0158	ppb	29.07	1000.	
135 Ba	32.65	1.306	ppb	5.51	2000.	
137 Ba	32.025	1.281	ppb	1.04	#VALUE!	
182 W	0.2973	0.0119	ppb	24.16	1000.	
203 Tl	0.0973	0.0039	ppb	123.07	1000.	
205 Tl	0.0699	0.0028	ppb	90.52	#VALUE!	
208 Pb	0.1511	0.006	ppb	80.55	2000.	
232 Th	0.1051	0.0042	ppb	111.80	1000.	
238 U	1.349	0.054	ppb	5.12	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8841134.00	3.19	8477054.00	104.3	69.5 - 120	
45 Sc	3052709.80	1.68	2909174.30	104.9	69.5 - 120	
89 Y	3194861.00	1.21	3117971.30	102.5	69.5 - 120	
159 Tb	2753028.50	0.90	2784003.50	98.9	69.5 - 120	
209 Bi	1484578.90	0.31	1452804.80	102.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000101

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\063_CCV.D\063_CCV.D#
Date Acquired: Oct 11 2018 10:26 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.52	ppb	2.78	25	102.08	
11 B	24.97	ppb	5.07	25	99.88	
23 Na	4,968.	ppb	1.67	5,000	99.36	
25 Mg	4,921.	ppb	1.64	5,000	98.42	
27 Al	489.	ppb	2.36	500	97.8	
28 Si	539.5	ppb	3.56	500	107.9	
29 Si	493.9	ppb	7.70	500	98.78	
39 K	5,042.	ppb	0.84	5,000	100.84	
43 Ca	4,960.	ppb	3.25	5,000	99.2	
44 Ca	5,101.	ppb	0.75	5,000	102.02	
51 V	25.49	ppb	0.60	25	101.96	
52 Cr	25.3	ppb	2.90	25	101.2	
53 Cr	19.56	ppb	15.18	25	78.24	
55 Mn	25.59	ppb	2.36	25	102.36	
56 Fe	4,800.	ppb	1.51	5,000	96	
57 Fe	4,902.	ppb	2.39	5,000	98.04	
59 Co	24.8	ppb	3.20	25	99.2	
60 Ni	23.38	ppb	3.13	25	93.52	
63 Cu	23.42	ppb	4.23	25	93.68	
65 Cu	23.68	ppb	2.61	25	94.72	
66 Zn	21.04	ppb	1.69	25	84.16	Fail
68 Zn	19.84	ppb	5.44	25	79.36	
75 As	25.12	ppb	1.95	25	100.48	
82 Se	25.38	ppb	4.15	25	101.52	
88 Sr	26.68	ppb	1.15	25	106.72	
98 Mo	24.22	ppb	2.51	25	96.88	
107 Ag	24.19	ppb	2.82	25	96.76	
109 Ag	24.14	ppb	2.86	25	96.56	
111 Cd	24.23	ppb	2.96	25	96.92	
114 Cd	24.07	ppb	3.03	25	96.28	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.04	ppb	1.97	25	100.16	
120 Sn	24.53	ppb	2.08	25	98.12	
121 Sb	25.09	ppb	2.14	25	100.36	
123 Sb	25.13	ppb	2.78	25	100.52	
135 Ba	24.85	ppb	3.05	25	99.4	
137 Ba	25.45	ppb	1.71	25	101.8	
182 W	25.07	ppb	2.64	25	100.28	
203 Tl	25.01	ppb	1.49	25	100.04	
205 Tl	24.43	ppb	4.00	25	97.72	
208 Pb	24.42	ppb	3.26	25	97.68	
232 Th	26.1	ppb	0.80	25	104.4	
238 U	27.29	ppb	3.40	25	109.16	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8422338.00	5.00	8477054.00	99.4	80 - 120.4	
45 Sc	2973574.80	1.40	2909174.30	102.2	80 - 120.4	
89 Y	3142468.50	0.93	3117971.30	100.8	80 - 120.4	
159 Tb	2711569.80	0.89	2784003.50	97.4	80 - 120.4	
209 Bi	1451576.40	1.99	1452804.80	99.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000102

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\064_CCB.D\064_CCB.D#
Date Acquired: Oct 11 2018 10:30 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0035	ppb	54.39	1.00	
11 B	0.2638	ppb	28.08	1.00	
23 Na	-3.261	ppb	6.22	1.00	
25 Mg	0.0335	ppb	35.41	1.00	
27 Al	0.2696	ppb	25.60	1.00	
28 Si	59.27	ppb	18.91	1.00	
29 Si	16.77	ppb	192.25	1.00	
39 K	4.745	ppb	31.38	1.00	
43 Ca	-0.6266	ppb	588.09	1.00	
44 Ca	-10.81	ppb	32.33	1.00	
51 V	-0.1333	ppb	70.14	1.00	
52 Cr	-0.2405	ppb	2.68	1.00	
53 Cr	-9.355	ppb	5.70	1.00	
55 Mn	-0.0033	ppb	88.67	1.00	
56 Fe	-7.007	ppb	36.74	1.00	
57 Fe	1.492	ppb	62.25	1.00	
59 Co	0.0008	ppb	107.49	1.00	
60 Ni	-0.0093	ppb	109.33	1.00	
63 Cu	-0.0115	ppb	33.51	1.00	
65 Cu	-0.0059	ppb	186.86	1.00	
66 Zn	-0.023	ppb	76.62	1.00	
68 Zn	-1.489	ppb	27.09	1.00	
75 As	-0.1471	ppb	102.92	1.00	
82 Se	-0.1176	ppb	424.40	1.00	
88 Sr	0.0016	ppb	75.94	1.00	
98 Mo	0.0076	ppb	16.58	1.00	
107 Ag	0.0048	ppb	122.20	1.00	
109 Ag	0.0006	ppb	1293.40	1.00	
111 Cd	0.0862	ppb	76.65	1.00	
114 Cd	0.0142	ppb	53.52	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0297	ppb	106.97	1.00	
120 Sn	0.0377	ppb	57.23	1.00	
121 Sb	0.0101	ppb	23.63	1.00	
123 Sb	0.0171	ppb	50.35	1.00	
135 Ba	-0.0054	ppb	182.66	1.00	
137 Ba	0.0016	ppb	553.86	1.00	
182 W	0.0332	ppb	6.28	1.00	
203 Tl	0.0049	ppb	111.10	1.00	
205 Tl	0.0028	ppb	42.77	1.00	
208 Pb	0.0039	ppb	119.04	1.00	
232 Th	0.2269	ppb	15.94	1.00	Fail
238 U	0.0011	ppb	130.10	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8673316.00	3.03	8477054.00	102.3	79.5 - 120	
45 Sc	2957990.50	1.92	2909174.30	101.7	79.5 - 120	
89 Y	3175702.30	0.96	3117971.30	101.9	79.5 - 120	
159 Tb	2718616.50	2.12	2784003.50	97.7	79.5 - 120	
209 Bi	1488186.90	2.01	1452804.80	102.4	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000103

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\065SMPL.D\065SMPL.D#
Date Acquired: Oct 11 2018 10:34 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9735-007A
Misc Info:
Vial Number: 2307
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	10.71	2.142	ppb	0.36	100.	
11 B	272.65	54.53	ppb	1.42	1000.	
23 Na	17,240.	3,448.	ppb	1.46	200000.	
25 Mg	8,650.	1,730.	ppb	1.23	200000.	
27 Al	1,103.	220.6	ppb	0.42	200000.	
28 Si	14,570.	2,914.	ppb	1.19	#VALUE!	
29 Si	13,000.	2,600.	ppb	2.07	10000.	
39 K	24,255.	4,851.	ppb	1.24	200000.	
43 Ca	111,700.	22,340.	ppb	1.63	#VALUE!	
44 Ca	113,400.	22,680.	ppb	0.40	200000.	
51 V	64.1	12.82	ppb	2.60	1000.	
52 Cr	58.55	11.71	ppb	2.37	2000.	
53 Cr	142.1	28.42	ppb	0.88	#VALUE!	
55 Mn	310.8	62.16	ppb	2.17	2000.	
56 Fe	1,165.5	233.1	ppb	2.12	#VALUE!	
57 Fe	2,246.	449.2	ppb	5.79	100000.	
59 Co	12.205	2.441	ppb	2.54	1000.	
60 Ni	44.02	8.804	ppb	3.77	1000.	
63 Cu	34.905	6.981	ppb	2.43	#VALUE!	
65 Cu	34.515	6.903	ppb	0.92	2000.	
66 Zn	469.9	93.98	ppb	1.46	2000.	
68 Zn	443.65	88.73	ppb	1.26	#VALUE!	
75 As	56.3	11.26	ppb	2.35	1000.	
82 Se	55.45	11.09	ppb	2.95	1000.	
88 Sr	490.35	98.07	ppb	0.56	2000.	
98 Mo	62.	12.4	ppb	1.79	1000.	
107 Ag	10.545	2.109	ppb	3.38	100.	
109 Ag	10.495	2.099	ppb	2.51	#VALUE!	
111 Cd	10.96	2.192	ppb	7.06	#VALUE!	
114 Cd	11.06	2.212	ppb	3.77	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	57.7	11.54	ppb	2.01	1000.	
120 Sn	56.45	11.29	ppb	0.87	#VALUE!	
121 Sb	11.785	2.357	ppb	2.28	#VALUE!	
123 Sb	11.995	2.399	ppb	1.86	1000.	
135 Ba	52.95	10.59	ppb	1.61	2000.	
137 Ba	53.05	10.61	ppb	1.12	#VALUE!	
182 W	57.25	11.45	ppb	0.42	1000.	
203 Tl	11.18	2.236	ppb	1.42	1000.	
205 Tl	11.14	2.228	ppb	2.08	#VALUE!	
208 Pb	10.36	2.072	ppb	2.21	2000.	
232 Th	13.565	2.713	ppb	6.06	1000.	
238 U	13.905	2.781	ppb	1.31	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9084850.00	1.42	8477054.00	107.2	69.5 - 120	
45 Sc	3008557.50	1.15	2909174.30	103.4	69.5 - 120	
89 Y	3133042.30	1.11	3117971.30	100.5	69.5 - 120	
159 Tb	2677034.30	0.05	2784003.50	96.2	69.5 - 120	
209 Bi	1402748.50	1.29	1452804.80	96.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000104

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\066SMPL.D\066SMPL.D#
Date Acquired: Oct 11 2018 10:38 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9735-007S
Misc Info:
Vial Number: 2308
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	50.75	10.15	ppb	0.79	100.	
11 B	542.5	108.5	ppb	2.04	1000.	
23 Na	14,630.	2,926.	ppb	1.56	200000.	
25 Mg	13,050.	2,610.	ppb	0.64	200000.	
27 Al	2,183.5	436.7	ppb	1.09	200000.	
28 Si	11,035.	2,207.	ppb	0.63	#VALUE!	
29 Si	9,730.	1,946.	ppb	0.88	10000.	
39 K	24,645.	4,929.	ppb	1.94	200000.	
43 Ca	118,050.	23,610.	ppb	1.31	#VALUE!	
44 Ca	120,150.	24,030.	ppb	0.33	200000.	
51 V	542.5	108.5	ppb	0.92	1000.	
52 Cr	217.95	43.59	ppb	2.87	2000.	
53 Cr	321.1	64.22	ppb	4.49	#VALUE!	
55 Mn	812.	162.4	ppb	1.94	2000.	
56 Fe	1,164.	232.8	ppb	2.65	#VALUE!	
57 Fe	2,256.5	451.3	ppb	5.97	100000.	
59 Co	523.	104.6	ppb	2.26	1000.	
60 Ni	519.	103.8	ppb	4.38	1000.	
63 Cu	250.2	50.04	ppb	3.30	#VALUE!	
65 Cu	253.4	50.68	ppb	3.23	2000.	
66 Zn	815.5	163.1	ppb	3.16	2000.	
68 Zn	920.5	184.1	ppb	1.85	#VALUE!	
75 As	105.1	21.02	ppb	1.63	1000.	
82 Se	100.3	20.06	ppb	0.33	1000.	
88 Sr	962.	192.4	ppb	0.99	2000.	
98 Mo	107.95	21.59	ppb	2.87	1000.	
107 Ag	51.45	10.29	ppb	3.21	100.	
109 Ag	50.95	10.19	ppb	2.41	#VALUE!	
111 Cd	246.4	49.28	ppb	2.37	#VALUE!	
114 Cd	246.1	49.22	ppb	3.17	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	529.	105.8	ppb	1.84	1000.	
120 Sn	523.	104.6	ppb	2.24	#VALUE!	
121 Sb	104.5	20.9	ppb	3.07	#VALUE!	
123 Sb	104.85	20.97	ppb	1.18	1000.	
135 Ba	2,178.5	435.7	ppb	2.59	2000.	
137 Ba	2,112.	422.4	ppb	0.75	#VALUE!	
182 W	104.45	20.89	ppb	2.22	1000.	
203 Tl	103.5	20.7	ppb	3.85	1000.	
205 Tl	103.2	20.64	ppb	3.34	#VALUE!	
208 Pb	102.3	20.46	ppb	3.19	2000.	
232 Th	109.95	21.99	ppb	0.76	1000.	
238 U	117.15	23.43	ppb	3.31	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9440776.00	2.31	8477054.00	111.4	69.5 - 120	
45 Sc	3018399.80	0.36	2909174.30	103.8	69.5 - 120	
89 Y	3126313.50	0.97	3117971.30	100.3	69.5 - 120	
159 Tb	2677036.50	0.41	2784003.50	96.2	69.5 - 120	
209 Bi	1404032.60	2.29	1452804.80	96.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000105

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\067SMPL.D\067SMPL.D#
Date Acquired: Oct 11 2018 10:42 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9735-007P
Misc Info:
Vial Number: 2309
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	51.4	10.28	ppb	0.78	100.	
11 B	542.	108.4	ppb	3.40	1000.	
23 Na	15,095.	3,019.	ppb	1.68	200000.	
25 Mg	13,465.	2,693.	ppb	2.56	200000.	
27 Al	2,169.5	433.9	ppb	1.64	200000.	
28 Si	11,420.	2,284.	ppb	1.28	#VALUE!	
29 Si	10,085.	2,017.	ppb	1.27	10000.	
39 K	25,280.	5,056.	ppb	0.61	200000.	
43 Ca	120,850.	24,170.	ppb	0.75	#VALUE!	
44 Ca	126,050.	25,210.	ppb	0.46	200000.	
51 V	543.	108.6	ppb	0.45	1000.	
52 Cr	217.15	43.43	ppb	1.96	2000.	
53 Cr	313.4	62.68	ppb	1.12	#VALUE!	
55 Mn	831.5	166.3	ppb	0.66	2000.	
56 Fe	1,189.	237.8	ppb	1.65	#VALUE!	
57 Fe	2,372.5	474.5	ppb	4.21	100000.	
59 Co	526.	105.2	ppb	1.79	1000.	
60 Ni	516.5	103.3	ppb	2.55	1000.	
63 Cu	251.75	50.35	ppb	2.86	#VALUE!	
65 Cu	254.4	50.88	ppb	1.37	2000.	
66 Zn	829.	165.8	ppb	2.40	2000.	
68 Zn	924.5	184.9	ppb	1.21	#VALUE!	
75 As	103.9	20.78	ppb	2.64	1000.	
82 Se	99.25	19.85	ppb	3.41	1000.	
88 Sr	988.	197.6	ppb	0.18	2000.	
98 Mo	108.25	21.65	ppb	1.65	1000.	
107 Ag	51.45	10.29	ppb	2.25	100.	
109 Ag	51.35	10.27	ppb	2.48	#VALUE!	
111 Cd	247.	49.4	ppb	2.61	#VALUE!	
114 Cd	246.3	49.26	ppb	2.58	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	525.	105.	ppb	2.06	1000.	
120 Sn	517.5	103.5	ppb	2.51	#VALUE!	
121 Sb	104.15	20.83	ppb	2.40	#VALUE!	
123 Sb	104.	20.8	ppb	2.09	1000.	
135 Ba	2,168.5	433.7	ppb	2.59	2000.	
137 Ba	2,128.	425.6	ppb	0.64	#VALUE!	
182 W	102.8	20.56	ppb	2.14	1000.	
203 Tl	102.25	20.45	ppb	2.90	1000.	
205 Tl	101.55	20.31	ppb	3.14	#VALUE!	
208 Pb	101.25	20.25	ppb	3.40	2000.	
232 Th	108.1	21.62	ppb	0.97	1000.	
238 U	116.45	23.29	ppb	2.74	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9420837.00	2.29	8477054.00	111.1	69.5 - 120	
45 Sc	3046962.30	0.49	2909174.30	104.7	69.5 - 120	
89 Y	3128178.00	0.75	3117971.30	100.3	69.5 - 120	
159 Tb	2685134.50	0.81	2784003.50	96.4	69.5 - 120	
209 Bi	1410177.00	1.76	1452804.80	97.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000106

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\068SMPL.D\068SMPL.D#
Date Acquired: Oct 11 2018 10:46 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9735-008
Misc Info:
Vial Number: 2310
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0179	0.0036	ppb	47.39	100.	
11 B	8.15	1.63	ppb	15.56	1000.	
23 Na	0.7085	0.1417	ppb	504.80	200000.	
25 Mg	7.865	1.573	ppb	16.63	200000.	
27 Al	8.01	1.602	ppb	1.78	200000.	
28 Si	211.9	42.38	ppb	47.50	#VALUE!	
29 Si	-38.765	-7.753	ppb	947.63	10000.	
39 K	43.685	8.737	ppb	12.06	200000.	
43 Ca	25.605	5.121	ppb	86.27	#VALUE!	
44 Ca	-29.495	-5.899	ppb	40.60	200000.	
51 V	0.3352	0.067	ppb	490.30	1000.	
52 Cr	2.0435	0.4087	ppb	10.80	2000.	
53 Cr	78.4	15.68	ppb	7.76	#VALUE!	
55 Mn	0.3179	0.0636	ppb	15.70	2000.	
56 Fe	19.545	3.909	ppb	47.76	#VALUE!	
57 Fe	21.435	4.287	ppb	31.35	100000.	
59 Co	0.0138	0.0028	ppb	17.73	1000.	
60 Ni	0.0733	0.0147	ppb	56.99	1000.	
63 Cu	0.57	0.114	ppb	25.73	#VALUE!	
65 Cu	0.4951	0.099	ppb	7.87	2000.	
66 Zn	0.7385	0.1477	ppb	64.28	2000.	
68 Zn	-5.735	-1.147	ppb	47.45	#VALUE!	
75 As	-0.2047	-0.0409	ppb	205.99	1000.	
82 Se	1.707	0.3414	ppb	74.63	1000.	
88 Sr	0.0686	0.0137	ppb	33.97	2000.	
98 Mo	0.0336	0.0067	ppb	55.37	1000.	
107 Ag	-0.014	-0.0028	ppb	265.08	100.	
109 Ag	-0.0117	-0.0023	ppb	131.93	#VALUE!	
111 Cd	0.522	0.1044	ppb	77.66	#VALUE!	
114 Cd	0.069	0.0138	ppb	13.81	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.553	0.1106	ppb	18.81	1000.	
120 Sn	0.4259	0.0852	ppb	18.02	#VALUE!	
121 Sb	0.103	0.0206	ppb	44.35	#VALUE!	
123 Sb	0.1029	0.0206	ppb	37.37	1000.	
135 Ba	0.2147	0.0429	ppb	42.42	2000.	
137 Ba	0.1735	0.0347	ppb	5.86	#VALUE!	
182 W	0.1518	0.0304	ppb	46.89	1000.	
203 Tl	0.0451	0.009	ppb	62.09	1000.	
205 Tl	0.0125	0.0025	ppb	53.77	#VALUE!	
208 Pb	0.105	0.021	ppb	24.04	2000.	
232 Th	1.999	0.3998	ppb	33.57	1000.	
238 U	0.001	0.0002	ppb	295.50	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9312041.00	5.46	8477054.00	109.8	69.5 - 120	
45 Sc	2997993.30	1.93	2909174.30	103.1	69.5 - 120	
89 Y	3116448.50	1.33	3117971.30	100.0	69.5 - 120	
159 Tb	2665848.80	2.05	2784003.50	95.8	69.5 - 120	
209 Bi	1416206.40	0.59	1452804.80	97.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000107

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\069SMPL.D\069SMPL.D#
Date Acquired: Oct 11 2018 10:50 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2311
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.002	0.002	ppb	14.09	100.	
11 B	0.4484	0.4484	ppb	18.20	1000.	
23 Na	-4.705	-4.705	ppb	1.39	200000.	
25 Mg	0.3123	0.3123	ppb	19.08	200000.	
27 Al	0.7358	0.7358	ppb	10.01	200000.	
28 Si	70.64	70.64	ppb	17.58	#VALUE!	
29 Si	49.1	49.1	ppb	117.54	10000.	
39 K	5.702	5.702	ppb	26.03	200000.	
43 Ca	-2.377	-2.377	ppb	204.67	#VALUE!	
44 Ca	-8.705	-8.705	ppb	23.31	200000.	
51 V	-0.0662	-0.0662	ppb	56.27	1000.	
52 Cr	-0.1556	-0.1556	ppb	9.46	2000.	
53 Cr	-7.825	-7.825	ppb	3.42	#VALUE!	
55 Mn	0.0147	0.0147	ppb	22.59	2000.	
56 Fe	-3.829	-3.829	ppb	34.00	#VALUE!	
57 Fe	2.589	2.589	ppb	81.69	100000.	
59 Co	0.0005	0.0005	ppb	456.22	1000.	
60 Ni	-0.0005	-0.0005	ppb	432.22	1000.	
63 Cu	0.0299	0.0299	ppb	29.56	#VALUE!	
65 Cu	0.0286	0.0286	ppb	97.10	2000.	
66 Zn	0.0579	0.0579	ppb	96.70	2000.	
68 Zn	-1.165	-1.165	ppb	26.23	#VALUE!	
75 As	-0.0348	-0.0348	ppb	297.70	1000.	
82 Se	-0.1337	-0.1337	ppb	691.10	1000.	
88 Sr	0.0041	0.0041	ppb	55.74	2000.	
98 Mo	-0.0018	-0.0018	ppb	234.09	1000.	
107 Ag	0.0031	0.0031	ppb	93.59	100.	
109 Ag	-0.0011	-0.0011	ppb	329.11	#VALUE!	
111 Cd	0.0761	0.0761	ppb	47.12	#VALUE!	
114 Cd	0.0064	0.0064	ppb	129.79	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0098	0.0098	ppb	64.88	1000.	
120 Sn	0.0275	0.0275	ppb	45.02	#VALUE!	
121 Sb	0.006	0.006	ppb	40.75	#VALUE!	
123 Sb	0.0046	0.0046	ppb	61.79	1000.	
135 Ba	0.0084	0.0084	ppb	259.93	2000.	
137 Ba	0.0078	0.0078	ppb	149.19	#VALUE!	
182 W	0.0069	0.0069	ppb	47.87	1000.	
203 Tl	0.0108	0.0108	ppb	51.62	1000.	
205 Tl	0.0005	0.0005	ppb	424.12	#VALUE!	
208 Pb	-0.0003	-0.0003	ppb	618.37	2000.	
232 Th	0.0502	0.0502	ppb	9.38	1000.	
238 U	-0.0002	-0.0002	ppb	538.03	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8857329.00	2.33	8477054.00	104.5	69.5 - 120	
45 Sc	3011295.30	1.53	2909174.30	103.5	69.5 - 120	
89 Y	3199053.80	1.33	3117971.30	102.6	69.5 - 120	
159 Tb	2743776.00	2.06	2784003.50	98.6	69.5 - 120	
209 Bi	1504572.50	1.71	1452804.80	103.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000108

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\070SMPL.D\070SMPL.D#
Date Acquired: Oct 11 2018 10:54 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: PBWLJ10IMW1
Misc Info:
Vial Number: 2312
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0016	0.0016	ppb	36.76	100.	
11 B	6.728	6.728	ppb	7.10	1000.	
23 Na	4.36	4.36	ppb	16.28	200000.	
25 Mg	4.408	4.408	ppb	2.19	200000.	
27 Al	3.394	3.394	ppb	7.67	200000.	
28 Si	116.4	116.4	ppb	30.76	#VALUE!	
29 Si	127.9	127.9	ppb	64.08	10000.	
39 K	6.699	6.699	ppb	6.75	200000.	
43 Ca	1.235	1.235	ppb	548.58	#VALUE!	
44 Ca	-7.407	-7.407	ppb	22.30	200000.	
51 V	-0.0966	-0.0966	ppb	117.61	1000.	
52 Cr	-0.1412	-0.1412	ppb	14.60	2000.	
53 Cr	-7.935	-7.935	ppb	5.46	#VALUE!	
55 Mn	0.0359	0.0359	ppb	24.78	2000.	
56 Fe	-1.826	-1.826	ppb	75.30	#VALUE!	
57 Fe	3.328	3.328	ppb	42.37	100000.	
59 Co	0.0077	0.0077	ppb	50.18	1000.	
60 Ni	0.0045	0.0045	ppb	113.17	1000.	
63 Cu	0.0092	0.0092	ppb	101.14	#VALUE!	
65 Cu	0.0051	0.0051	ppb	591.42	2000.	
66 Zn	0.0526	0.0526	ppb	75.28	2000.	
68 Zn	-1.121	-1.121	ppb	43.44	#VALUE!	
75 As	-0.152	-0.152	ppb	64.25	1000.	
82 Se	0.0538	0.0538	ppb	111.52	1000.	
88 Sr	0.0062	0.0062	ppb	73.43	2000.	
98 Mo	0.0005	0.0005	ppb	798.40	1000.	
107 Ag	-0.0024	-0.0024	ppb	268.18	100.	
109 Ag	0.0015	0.0015	ppb	83.33	#VALUE!	
111 Cd	0.0378	0.0378	ppb	127.74	#VALUE!	
114 Cd	0.0028	0.0028	ppb	548.81	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0087	0.0087	ppb	57.85	1000.	
120 Sn	0.0037	0.0037	ppb	417.87	#VALUE!	
121 Sb	0.0086	0.0086	ppb	30.00	#VALUE!	
123 Sb	0.0111	0.0111	ppb	63.42	1000.	
135 Ba	0.0411	0.0411	ppb	17.90	2000.	
137 Ba	0.0399	0.0399	ppb	43.79	#VALUE!	
182 W	0.0034	0.0034	ppb	83.60	1000.	
203 Tl	0.0059	0.0059	ppb	77.16	1000.	
205 Tl	0.0012	0.0012	ppb	208.35	#VALUE!	
208 Pb	0.0067	0.0067	ppb	59.61	2000.	
232 Th	0.0379	0.0379	ppb	10.76	1000.	
238 U	0.0001	0.0001	ppb	1126.20	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8733729.00	3.78	8477054.00	103.0	69.5 - 120	
45 Sc	2977479.50	1.28	2909174.30	102.3	69.5 - 120	
89 Y	3182248.80	1.43	3117971.30	102.1	69.5 - 120	
159 Tb	2723695.50	1.22	2784003.50	97.8	69.5 - 120	
209 Bi	1483128.00	0.60	1452804.80	102.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000109

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\071SMPL.D\071SMPL.D#
Date Acquired: Oct 11 2018 10:58 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: LCSWLJ10IMW1
Misc Info:
Vial Number: 2401
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	49.72	9.944	ppb	1.63	100.	
11 B	478.1	95.62	ppb	4.37	1000.	
23 Na	7,910.	1,582.	ppb	0.42	200000.	
25 Mg	5,340.	1,068.	ppb	1.46	200000.	
27 Al	2,127.	425.4	ppb	1.45	200000.	
28 Si	1,297.	259.4	ppb	10.16	#VALUE!	
29 Si	896.	179.2	ppb	30.55	10000.	
39 K	10,455.	2,091.	ppb	0.88	200000.	
43 Ca	3,268.5	653.7	ppb	4.21	#VALUE!	
44 Ca	2,930.	586.	ppb	1.87	200000.	
51 V	516.5	103.3	ppb	0.81	1000.	
52 Cr	206.85	41.37	ppb	2.21	2000.	
53 Cr	186.25	37.25	ppb	5.47	#VALUE!	
55 Mn	514.	102.8	ppb	0.89	2000.	
56 Fe	1,011.5	202.3	ppb	1.56	#VALUE!	
57 Fe	1,082.	216.4	ppb	3.57	100000.	
59 Co	512.	102.4	ppb	1.06	1000.	
60 Ni	482.65	96.53	ppb	2.46	1000.	
63 Cu	247.15	49.43	ppb	3.14	#VALUE!	
65 Cu	250.25	50.05	ppb	2.18	2000.	
66 Zn	436.05	87.21	ppb	2.74	2000.	
68 Zn	548.5	109.7	ppb	1.87	#VALUE!	
75 As	102.65	20.53	ppb	1.77	1000.	
82 Se	101.25	20.25	ppb	4.42	1000.	
88 Sr	511.	102.2	ppb	0.73	2000.	
98 Mo	94.75	18.95	ppb	2.59	1000.	
107 Ag	50.25	10.05	ppb	2.58	100.	
109 Ag	50.9	10.18	ppb	3.60	#VALUE!	
111 Cd	243.4	48.68	ppb	3.19	#VALUE!	
114 Cd	245.3	49.06	ppb	2.61	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	504.	100.8	ppb	2.17	1000.	
120 Sn	500.	100.	ppb	2.47	#VALUE!	
121 Sb	101.85	20.37	ppb	2.38	#VALUE!	
123 Sb	101.95	20.39	ppb	2.05	1000.	
135 Ba	2,099.	419.8	ppb	2.57	2000.	
137 Ba	2,048.5	409.7	ppb	0.14	#VALUE!	
182 W	98.	19.6	ppb	1.95	1000.	
203 Tl	98.75	19.75	ppb	3.26	1000.	
205 Tl	99.1	19.82	ppb	2.49	#VALUE!	
208 Pb	98.9	19.78	ppb	2.24	2000.	
232 Th	99.7	19.94	ppb	1.62	1000.	
238 U	108.85	21.77	ppb	3.26	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9236032.00	3.31	8477054.00	109.0	69.5 - 120	
45 Sc	3028767.80	1.06	2909174.30	104.1	69.5 - 120	
89 Y	3190251.50	1.11	3117971.30	102.3	69.5 - 120	
159 Tb	2717600.00	0.55	2784003.50	97.6	69.5 - 120	
209 Bi	1453062.60	0.63	1452804.80	100.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000110

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\072SMPL.D\072SMPL.D#
Date Acquired: Oct 11 2018 11:02 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9664-001
Misc Info:
Vial Number: 2402
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.007	0.007	ppb	13.56	100.	
11 B	11.15	11.15	ppb	2.65	1000.	
23 Na	32,510.	32,510.	ppb	1.04	200000.	
25 Mg	4,877.	4,877.	ppb	1.78	200000.	
27 Al	5.445	5.445	ppb	1.98	200000.	
28 Si	4,465.	4,465.	ppb	1.88	#VALUE!	
29 Si	4,043.	4,043.	ppb	2.44	10000.	
39 K	4,106.	4,106.	ppb	1.74	200000.	
43 Ca	43,310.	43,310.	ppb	0.78	#VALUE!	
44 Ca	43,480.	43,480.	ppb	0.73	200000.	
51 V	-0.2138	-0.2138	ppb	15.74	1000.	
52 Cr	-0.1141	-0.1141	ppb	17.03	2000.	
53 Cr	-6.785	-6.785	ppb	7.72	#VALUE!	
55 Mn	41.33	41.33	ppb	2.19	2000.	
56 Fe	24.78	24.78	ppb	17.37	#VALUE!	
57 Fe	408.6	408.6	ppb	6.86	100000.	
59 Co	0.1767	0.1767	ppb	6.68	1000.	
60 Ni	5.317	5.317	ppb	2.16	1000.	
63 Cu	4.403	4.403	ppb	4.58	#VALUE!	
65 Cu	4.04	4.04	ppb	1.92	2000.	
66 Zn	24.21	24.21	ppb	1.83	2000.	
68 Zn	22.36	22.36	ppb	1.49	#VALUE!	
75 As	1.287	1.287	ppb	30.83	1000.	
82 Se	-0.1976	-0.1976	ppb	423.89	1000.	
88 Sr	226.8	226.8	ppb	0.14	2000.	
98 Mo	0.7526	0.7526	ppb	7.89	1000.	
107 Ag	-0.0004	-0.0004	ppb	401.08	100.	
109 Ag	-0.0002	-0.0002	ppb	1596.00	#VALUE!	
111 Cd	-0.0401	-0.0401	ppb	225.37	#VALUE!	
114 Cd	0.0172	0.0172	ppb	93.29	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.3503	0.3503	ppb	9.91	1000.	
120 Sn	0.3162	0.3162	ppb	2.40	#VALUE!	
121 Sb	0.0446	0.0446	ppb	36.41	#VALUE!	
123 Sb	0.0545	0.0545	ppb	22.01	1000.	
135 Ba	4.885	4.885	ppb	7.02	2000.	
137 Ba	4.991	4.991	ppb	1.36	#VALUE!	
182 W	0.9393	0.9393	ppb	1.69	1000.	
203 Tl	0.0059	0.0059	ppb	55.61	1000.	
205 Tl	0.0052	0.0052	ppb	38.17	#VALUE!	
208 Pb	0.1356	0.1356	ppb	8.35	2000.	
232 Th	0.4296	0.4296	ppb	41.22	1000.	
238 U	0.5163	0.5163	ppb	2.98	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8619543.00	3.48	8477054.00	101.7	69.5 - 120	
45 Sc	3028391.80	0.50	2909174.30	104.1	69.5 - 120	
89 Y	3180853.50	1.30	3117971.30	102.0	69.5 - 120	
159 Tb	2715779.80	0.54	2784003.50	97.5	69.5 - 120	
209 Bi	1404033.50	2.57	1452804.80	96.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000111

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\073SMPL.D\073SMPL.D#
Date Acquired: Oct 11 2018 11:06 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9678-001
Misc Info:
Vial Number: 2403
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0109	0.0109	ppb	30.93	100.	
11 B	89.09	89.09	ppb	3.50	1000.	
23 Na	129,300.	129,300.	ppb	1.77	200000.	
25 Mg	1,898.	1,898.	ppb	2.58	200000.	
27 Al	97.13	97.13	ppb	2.34	200000.	
28 Si	18,730.	18,730.	ppb	3.97	#VALUE!	
29 Si	17,170.	17,170.	ppb	3.61	10000.	>LDR
39 K	3,429.	3,429.	ppb	1.94	200000.	
43 Ca	8,382.	8,382.	ppb	1.97	#VALUE!	
44 Ca	8,514.	8,514.	ppb	0.44	200000.	
51 V	0.2096	0.2096	ppb	53.58	1000.	
52 Cr	0.7978	0.7978	ppb	9.94	2000.	
53 Cr	-1.091	-1.091	ppb	77.92	#VALUE!	
55 Mn	5.967	5.967	ppb	3.05	2000.	
56 Fe	42.52	42.52	ppb	7.05	#VALUE!	
57 Fe	109.1	109.1	ppb	9.20	100000.	
59 Co	0.1374	0.1374	ppb	16.50	1000.	
60 Ni	1.795	1.795	ppb	7.05	1000.	
63 Cu	23.96	23.96	ppb	2.06	#VALUE!	
65 Cu	22.13	22.13	ppb	0.69	2000.	
66 Zn	98.16	98.16	ppb	1.59	2000.	
68 Zn	95.41	95.41	ppb	1.79	#VALUE!	
75 As	0.9227	0.9227	ppb	6.91	1000.	
82 Se	0.362	0.362	ppb	233.73	1000.	
88 Sr	58.1	58.1	ppb	0.93	2000.	
98 Mo	0.7844	0.7844	ppb	6.69	1000.	
107 Ag	0.0068	0.0068	ppb	24.64	100.	
109 Ag	0.0078	0.0078	ppb	31.50	#VALUE!	
111 Cd	-0.0366	-0.0366	ppb	218.35	#VALUE!	
114 Cd	0.0639	0.0639	ppb	33.01	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0897	0.0897	ppb	8.54	1000.	
120 Sn	0.0837	0.0837	ppb	22.28	#VALUE!	
121 Sb	0.2903	0.2903	ppb	4.89	#VALUE!	
123 Sb	0.2818	0.2818	ppb	6.24	1000.	
135 Ba	6.149	6.149	ppb	1.85	2000.	
137 Ba	6.22	6.22	ppb	3.35	#VALUE!	
182 W	745.2	745.2	ppb	1.57	1000.	
203 Tl	0.1076	0.1076	ppb	18.91	1000.	
205 Tl	0.0055	0.0055	ppb	10.23	#VALUE!	
208 Pb	0.0858	0.0858	ppb	9.57	2000.	
232 Th	0.7151	0.7151	ppb	50.47	1000.	
238 U	0.5281	0.5281	ppb	2.95	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8080160.50	0.99	8477054.00	95.3	69.5 - 120	
45 Sc	3186836.50	1.19	2909174.30	109.5	69.5 - 120	
89 Y	3333150.00	1.21	3117971.30	106.9	69.5 - 120	
159 Tb	2816723.50	1.14	2784003.50	101.2	69.5 - 120	
209 Bi	1484535.00	3.87	1452804.80	102.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000112

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\074SMPL.D\074SMPL.D#
Date Acquired: Oct 11 2018 11:11 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9693-001
Misc Info:
Vial Number: 2404
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0056	0.0056	ppb	10.92	100.	
11 B	4.957	4.957	ppb	4.41	1000.	
23 Na	1,693.	1,693.	ppb	0.61	200000.	
25 Mg	1,048.	1,048.	ppb	0.82	200000.	
27 Al	23.36	23.36	ppb	1.95	200000.	
28 Si	4,730.	4,730.	ppb	1.54	#VALUE!	
29 Si	4,206.	4,206.	ppb	2.37	10000.	
39 K	586.8	586.8	ppb	1.69	200000.	
43 Ca	4,946.	4,946.	ppb	1.69	#VALUE!	
44 Ca	5,069.	5,069.	ppb	0.89	200000.	
51 V	0.0332	0.0332	ppb	538.23	1000.	
52 Cr	-0.0028	-0.0028	ppb	262.61	2000.	
53 Cr	-1.877	-1.877	ppb	27.97	#VALUE!	
55 Mn	0.4853	0.4853	ppb	1.95	2000.	
56 Fe	-7.403	-7.403	ppb	20.80	#VALUE!	
57 Fe	39.18	39.18	ppb	3.99	100000.	
59 Co	0.0636	0.0636	ppb	10.64	1000.	
60 Ni	0.3623	0.3623	ppb	7.76	1000.	
63 Cu	0.3853	0.3853	ppb	3.33	#VALUE!	
65 Cu	0.3277	0.3277	ppb	15.63	2000.	
66 Zn	0.7175	0.7175	ppb	19.09	2000.	
68 Zn	-1.235	-1.235	ppb	12.62	#VALUE!	
75 As	0.402	0.402	ppb	60.57	1000.	
82 Se	0.3585	0.3585	ppb	114.98	1000.	
88 Sr	23.48	23.48	ppb	1.39	2000.	
98 Mo	0.0746	0.0746	ppb	6.72	1000.	
107 Ag	-0.005	-0.005	ppb	51.92	100.	
109 Ag	0.0015	0.0015	ppb	347.09	#VALUE!	
111 Cd	-0.0439	-0.0439	ppb	72.12	#VALUE!	
114 Cd	0.0048	0.0048	ppb	108.01	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0096	0.0096	ppb	122.30	1000.	
120 Sn	0.0355	0.0355	ppb	49.75	#VALUE!	
121 Sb	0.023	0.023	ppb	25.39	#VALUE!	
123 Sb	0.0127	0.0127	ppb	41.57	1000.	
135 Ba	3.859	3.859	ppb	3.33	2000.	
137 Ba	3.837	3.837	ppb	1.94	#VALUE!	
182 W	0.3973	0.3973	ppb	15.62	1000.	
203 Tl	0.0062	0.0062	ppb	25.83	1000.	
205 Tl	0.0029	0.0029	ppb	23.91	#VALUE!	
208 Pb	0.0107	0.0107	ppb	67.33	2000.	
232 Th	0.0135	0.0135	ppb	20.21	1000.	
238 U	0.0106	0.0106	ppb	11.19	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8774977.00	2.80	8477054.00	103.5	69.5 - 120	
45 Sc	3167664.80	0.97	2909174.30	108.9	69.5 - 120	
89 Y	3360938.00	0.59	3117971.30	107.8	69.5 - 120	
159 Tb	2830043.00	0.55	2784003.50	101.7	69.5 - 120	
209 Bi	1585617.30	0.27	1452804.80	109.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000113

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\075_CCV.D\075_CCV.D#
Date Acquired: Oct 11 2018 11:15 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.8	ppb	2.80	25	99.2	
11 B	24.92	ppb	6.50	25	99.68	
23 Na	4,947.	ppb	1.28	5,000	98.94	
25 Mg	4,891.	ppb	1.02	5,000	97.82	
27 Al	485.2	ppb	2.15	500	97.04	
28 Si	529.3	ppb	5.82	500	105.86	
29 Si	461.4	ppb	18.83	500	92.28	
39 K	5,014.	ppb	1.51	5,000	100.28	
43 Ca	4,912.	ppb	0.79	5,000	98.24	
44 Ca	5,127.	ppb	0.56	5,000	102.54	
51 V	25.31	ppb	3.10	25	101.24	
52 Cr	24.89	ppb	3.01	25	99.56	
53 Cr	19.71	ppb	10.90	25	78.84	
55 Mn	25.14	ppb	2.47	25	100.56	
56 Fe	4,727.	ppb	3.07	5,000	94.54	
57 Fe	4,820.	ppb	3.25	5,000	96.4	
59 Co	24.05	ppb	3.57	25	96.2	
60 Ni	22.77	ppb	3.64	25	91.08	
63 Cu	23.16	ppb	2.64	25	92.64	
65 Cu	23.33	ppb	1.07	25	93.32	
66 Zn	20.98	ppb	1.17	25	83.92	Fail
68 Zn	19.8	ppb	3.34	25	79.2	
75 As	25.55	ppb	0.77	25	102.2	
82 Se	26.16	ppb	1.00	25	104.64	
88 Sr	26.78	ppb	0.54	25	107.12	
98 Mo	23.78	ppb	2.44	25	95.12	
107 Ag	23.78	ppb	2.43	25	95.12	
109 Ag	23.87	ppb	2.39	25	95.48	
111 Cd	23.82	ppb	1.58	25	95.28	
114 Cd	23.59	ppb	1.66	25	94.36	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.96	ppb	0.96	25	99.84	
120 Sn	24.84	ppb	1.29	25	99.36	
121 Sb	25.31	ppb	0.92	25	101.24	
123 Sb	25.27	ppb	1.78	25	101.08	
135 Ba	25.19	ppb	0.55	25	100.76	
137 Ba	25.56	ppb	2.30	25	102.24	
182 W	25.11	ppb	1.12	25	100.44	
203 Tl	24.66	ppb	2.25	25	98.64	
205 Tl	24.44	ppb	2.66	25	97.76	
208 Pb	24.28	ppb	2.23	25	97.12	
232 Th	26.4	ppb	0.81	25	105.6	
238 U	27.36	ppb	2.90	25	109.44	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8841054.00	5.48	8477054.00	104.3	80 - 120.4	
45 Sc	3047364.00	2.38	2909174.30	104.8	80 - 120.4	
89 Y	3225884.50	0.61	3117971.30	103.5	80 - 120.4	
159 Tb	2735026.30	1.31	2784003.50	98.2	80 - 120.4	
209 Bi	1483197.40	1.01	1452804.80	102.1	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000114

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\076_CCB.D\076_CCB.D#
Date Acquired: Oct 11 2018 11:19 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.003	ppb	33.56	1.00	
11 B	0.4241	ppb	49.75	1.00	
23 Na	-4.007	ppb	11.27	1.00	
25 Mg	0.033	ppb	158.40	1.00	
27 Al	0.2671	ppb	10.93	1.00	
28 Si	53.29	ppb	40.85	1.00	
29 Si	-5.922	ppb	889.56	1.00	
39 K	3.462	ppb	36.02	1.00	
43 Ca	-2.604	ppb	155.80	1.00	
44 Ca	-11.37	ppb	3.22	1.00	
51 V	-0.0561	ppb	108.52	1.00	
52 Cr	-0.2436	ppb	23.00	1.00	
53 Cr	-9.021	ppb	1.37	1.00	
55 Mn	-0.0063	ppb	33.52	1.00	
56 Fe	-6.254	ppb	15.10	1.00	
57 Fe	2.55	ppb	49.96	1.00	
59 Co	-0.0011	ppb	171.43	1.00	
60 Ni	-0.0003	ppb	1954.20	1.00	
63 Cu	0.0088	ppb	221.20	1.00	
65 Cu	-0.0028	ppb	449.02	1.00	
66 Zn	-0.0479	ppb	48.92	1.00	
68 Zn	-1.915	ppb	8.18	1.00	
75 As	0.0396	ppb	1010.40	1.00	
82 Se	0.6757	ppb	208.67	1.00	
88 Sr	-0.0004	ppb	500.93	1.00	
98 Mo	0.0072	ppb	30.57	1.00	
107 Ag	0.0032	ppb	158.38	1.00	
109 Ag	-0.0012	ppb	263.32	1.00	
111 Cd	-0.0186	ppb	282.48	1.00	
114 Cd	-0.0056	ppb	184.48	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0338	ppb	53.48	1.00	
120 Sn	0.0164	ppb	53.66	1.00	
121 Sb	0.0118	ppb	25.20	1.00	
123 Sb	0.0138	ppb	43.68	1.00	
135 Ba	-0.0058	ppb	166.03	1.00	
137 Ba	-0.0059	ppb	236.60	1.00	
182 W	0.0593	ppb	14.76	1.00	
203 Tl	0.0066	ppb	25.79	1.00	
205 Tl	0.003	ppb	53.56	1.00	
208 Pb	0.0053	ppb	138.16	1.00	
232 Th	0.2283	ppb	6.49	1.00	Fail
238 U	0.0008	ppb	102.75	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8950254.00	4.39	8477054.00	105.6	79.5 - 120	
45 Sc	3059164.00	1.02	2909174.30	105.2	79.5 - 120	
89 Y	3265801.80	1.07	3117971.30	104.7	79.5 - 120	
159 Tb	2754470.50	1.40	2784003.50	98.9	79.5 - 120	
209 Bi	1521782.60	0.36	1452804.80	104.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000115

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\077SMPL.D\077SMPL.D#
Date Acquired: Oct 11 2018 11:23 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9693-002
Misc Info:
Vial Number: 2405
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0074	0.0074	ppb	17.54	100.	
11 B	3.811	3.811	ppb	3.46	1000.	
23 Na	1,387.	1,387.	ppb	1.99	200000.	
25 Mg	782.	782.	ppb	1.76	200000.	
27 Al	36.51	36.51	ppb	0.98	200000.	
28 Si	4,236.	4,236.	ppb	2.80	#VALUE!	
29 Si	3,726.	3,726.	ppb	4.53	10000.	
39 K	399.8	399.8	ppb	2.38	200000.	
43 Ca	3,297.	3,297.	ppb	2.59	#VALUE!	
44 Ca	3,427.	3,427.	ppb	1.26	200000.	
51 V	-0.015	-0.015	ppb	552.07	1000.	
52 Cr	-0.0118	-0.0118	ppb	152.67	2000.	
53 Cr	-4.106	-4.106	ppb	21.82	#VALUE!	
55 Mn	0.5756	0.5756	ppb	4.11	2000.	
56 Fe	-0.004	-0.004	ppb	68712.00	#VALUE!	
57 Fe	35.66	35.66	ppb	5.74	100000.	
59 Co	0.0683	0.0683	ppb	15.69	1000.	
60 Ni	0.3578	0.3578	ppb	6.96	1000.	
63 Cu	0.3762	0.3762	ppb	3.34	#VALUE!	
65 Cu	0.3492	0.3492	ppb	3.86	2000.	
66 Zn	0.2761	0.2761	ppb	28.11	2000.	
68 Zn	-1.03	-1.03	ppb	25.02	#VALUE!	
75 As	0.0424	0.0424	ppb	609.34	1000.	
82 Se	0.3655	0.3655	ppb	136.09	1000.	
88 Sr	16.86	16.86	ppb	0.79	2000.	
98 Mo	0.0519	0.0519	ppb	3.91	1000.	
107 Ag	-0.0022	-0.0022	ppb	369.62	100.	
109 Ag	0.0016	0.0016	ppb	688.83	#VALUE!	
111 Cd	-0.0489	-0.0489	ppb	122.13	#VALUE!	
114 Cd	0.0069	0.0069	ppb	60.33	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0367	0.0367	ppb	27.53	1000.	
120 Sn	0.036	0.036	ppb	38.78	#VALUE!	
121 Sb	0.0224	0.0224	ppb	32.64	#VALUE!	
123 Sb	0.0236	0.0236	ppb	8.58	1000.	
135 Ba	2.638	2.638	ppb	6.35	2000.	
137 Ba	2.632	2.632	ppb	2.75	#VALUE!	
182 W	0.0455	0.0455	ppb	14.51	1000.	
203 Tl	0.0089	0.0089	ppb	34.99	1000.	
205 Tl	0.0059	0.0059	ppb	15.96	#VALUE!	
208 Pb	0.0235	0.0235	ppb	28.65	2000.	
232 Th	0.1195	0.1195	ppb	9.53	1000.	
238 U	0.0102	0.0102	ppb	5.80	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9125844.00	1.78	8477054.00	107.7	69.5 - 120	
45 Sc	3109330.00	1.54	2909174.30	106.9	69.5 - 120	
89 Y	3243381.50	0.83	3117971.30	104.0	69.5 - 120	
159 Tb	2745299.80	0.72	2784003.50	98.6	69.5 - 120	
209 Bi	1482659.40	0.09	1452804.80	102.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000116

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\078SMPL.D\078SMPL.D#
Date Acquired: Oct 11 2018 11:27 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9693-003
Misc Info:
Vial Number: 2406
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0086	0.0086	ppb	4.98	100.	
11 B	3.659	3.659	ppb	5.22	1000.	
23 Na	1,349.	1,349.	ppb	2.32	200000.	
25 Mg	763.3	763.3	ppb	1.29	200000.	
27 Al	99.12	99.12	ppb	1.47	200000.	
28 Si	4,068.	4,068.	ppb	0.84	#VALUE!	
29 Si	3,639.	3,639.	ppb	1.72	10000.	
39 K	388.3	388.3	ppb	1.59	200000.	
43 Ca	3,075.	3,075.	ppb	1.99	#VALUE!	
44 Ca	3,210.	3,210.	ppb	0.74	200000.	
51 V	0.1529	0.1529	ppb	102.42	1000.	
52 Cr	0.114	0.114	ppb	16.40	2000.	
53 Cr	-2.093	-2.093	ppb	30.90	#VALUE!	
55 Mn	1.393	1.393	ppb	1.48	2000.	
56 Fe	28.41	28.41	ppb	9.43	#VALUE!	
57 Fe	62.63	62.63	ppb	12.33	100000.	
59 Co	0.0962	0.0962	ppb	9.59	1000.	
60 Ni	0.4153	0.4153	ppb	6.49	1000.	
63 Cu	0.4217	0.4217	ppb	2.78	#VALUE!	
65 Cu	0.4309	0.4309	ppb	1.94	2000.	
66 Zn	0.3147	0.3147	ppb	3.66	2000.	
68 Zn	-0.8512	-0.8512	ppb	23.90	#VALUE!	
75 As	0.2788	0.2788	ppb	109.58	1000.	
82 Se	1.076	1.076	ppb	69.94	1000.	
88 Sr	15.87	15.87	ppb	1.46	2000.	
98 Mo	0.0596	0.0596	ppb	15.88	1000.	
107 Ag	-0.0049	-0.0049	ppb	132.43	100.	
109 Ag	0.0017	0.0017	ppb	676.05	#VALUE!	
111 Cd	-0.0223	-0.0223	ppb	253.61	#VALUE!	
114 Cd	0.0115	0.0115	ppb	62.29	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0213	0.0213	ppb	25.75	1000.	
120 Sn	0.0193	0.0193	ppb	77.89	#VALUE!	
121 Sb	0.028	0.028	ppb	19.26	#VALUE!	
123 Sb	0.0248	0.0248	ppb	35.31	1000.	
135 Ba	2.636	2.636	ppb	2.30	2000.	
137 Ba	2.608	2.608	ppb	3.21	#VALUE!	
182 W	0.0334	0.0334	ppb	13.96	1000.	
203 Tl	0.0107	0.0107	ppb	90.88	1000.	
205 Tl	0.0068	0.0068	ppb	45.90	#VALUE!	
208 Pb	0.0257	0.0257	ppb	10.77	2000.	
232 Th	0.0577	0.0577	ppb	4.38	1000.	
238 U	0.0134	0.0134	ppb	3.47	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9121652.00	2.49	8477054.00	107.6	69.5 - 120	
45 Sc	3098682.30	0.72	2909174.30	106.5	69.5 - 120	
89 Y	3258398.00	0.87	3117971.30	104.5	69.5 - 120	
159 Tb	2766628.00	0.65	2784003.50	99.4	69.5 - 120	
209 Bi	1501270.10	0.56	1452804.80	103.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000117

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\079SMPL.D\079SMPL.D#
Date Acquired: Oct 11 2018 11:31 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9693-004
Misc Info:
Vial Number: 2407
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0062	0.0062	ppb	26.67	100.	
11 B	3.496	3.496	ppb	3.66	1000.	
23 Na	1,252.	1,252.	ppb	1.53	200000.	
25 Mg	717.1	717.1	ppb	0.95	200000.	
27 Al	53.	53.	ppb	0.81	200000.	
28 Si	3,399.	3,399.	ppb	0.39	#VALUE!	
29 Si	3,006.	3,006.	ppb	0.88	10000.	
39 K	365.1	365.1	ppb	0.54	200000.	
43 Ca	2,703.	2,703.	ppb	3.40	#VALUE!	
44 Ca	2,817.	2,817.	ppb	0.76	200000.	
51 V	0.1417	0.1417	ppb	89.56	1000.	
52 Cr	0.0679	0.0679	ppb	51.59	2000.	
53 Cr	-3.128	-3.128	ppb	15.66	#VALUE!	
55 Mn	1.018	1.018	ppb	1.63	2000.	
56 Fe	7.154	7.154	ppb	29.34	#VALUE!	
57 Fe	34.66	34.66	ppb	3.36	100000.	
59 Co	0.0767	0.0767	ppb	21.70	1000.	
60 Ni	0.2913	0.2913	ppb	3.67	1000.	
63 Cu	2.313	2.313	ppb	2.80	#VALUE!	
65 Cu	2.275	2.275	ppb	4.34	2000.	
66 Zn	0.2554	0.2554	ppb	40.06	2000.	
68 Zn	-0.8451	-0.8451	ppb	31.29	#VALUE!	
75 As	0.2312	0.2312	ppb	63.88	1000.	
82 Se	-0.0183	-0.0183	ppb	1859.30	1000.	
88 Sr	13.56	13.56	ppb	1.66	2000.	
98 Mo	0.0745	0.0745	ppb	6.38	1000.	
107 Ag	0.0063	0.0063	ppb	51.63	100.	
109 Ag	0.0007	0.0007	ppb	312.44	#VALUE!	
111 Cd	-0.022	-0.022	ppb	565.20	#VALUE!	
114 Cd	0.0111	0.0111	ppb	192.60	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0671	0.0671	ppb	11.59	1000.	
120 Sn	0.0516	0.0516	ppb	12.42	#VALUE!	
121 Sb	0.0233	0.0233	ppb	27.41	#VALUE!	
123 Sb	0.0151	0.0151	ppb	18.97	1000.	
135 Ba	2.16	2.16	ppb	6.88	2000.	
137 Ba	2.168	2.168	ppb	2.05	#VALUE!	
182 W	0.0342	0.0342	ppb	30.84	1000.	
203 Tl	0.0092	0.0092	ppb	0.96	1000.	
205 Tl	0.0047	0.0047	ppb	36.46	#VALUE!	
208 Pb	0.0175	0.0175	ppb	52.69	2000.	
232 Th	0.0371	0.0371	ppb	17.90	1000.	
238 U	0.0111	0.0111	ppb	23.27	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9187770.00	2.52	8477054.00	108.4	69.5 - 120	
45 Sc	3102400.50	0.90	2909174.30	106.6	69.5 - 120	
89 Y	3294661.50	0.24	3117971.30	105.7	69.5 - 120	
159 Tb	2770890.50	0.83	2784003.50	99.5	69.5 - 120	
209 Bi	1506636.50	0.66	1452804.80	103.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000118

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\080SMPL.D\080SMPL.D#
Date Acquired: Oct 11 2018 11:35 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9693-004L
Misc Info:
Vial Number: 2408
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0081	0.0016	ppb	33.58	100.	
11 B	4.482	0.8964	ppb	25.87	1000.	
23 Na	1,261.5	252.3	ppb	1.49	200000.	
25 Mg	688.	137.6	ppb	1.26	200000.	
27 Al	53.9	10.78	ppb	2.95	200000.	
28 Si	3,637.5	727.5	ppb	2.94	#VALUE!	
29 Si	2,860.5	572.1	ppb	6.95	10000.	
39 K	382.45	76.49	ppb	3.13	200000.	
43 Ca	2,570.	514.	ppb	7.57	#VALUE!	
44 Ca	2,885.5	577.1	ppb	1.40	200000.	
51 V	0.5155	0.1031	ppb	47.94	1000.	
52 Cr	-0.2995	-0.0599	ppb	54.07	2000.	
53 Cr	-19.97	-3.994	ppb	2.25	#VALUE!	
55 Mn	1.1165	0.2233	ppb	4.72	2000.	
56 Fe	7.615	1.523	ppb	33.15	#VALUE!	
57 Fe	51.25	10.25	ppb	3.61	100000.	
59 Co	0.0476	0.0095	ppb	32.31	1000.	
60 Ni	0.3192	0.0638	ppb	43.93	1000.	
63 Cu	0.5725	0.1145	ppb	23.48	#VALUE!	
65 Cu	0.4599	0.092	ppb	18.27	2000.	
66 Zn	0.6065	0.1213	ppb	58.84	2000.	
68 Zn	-5.815	-1.163	ppb	15.67	#VALUE!	
75 As	0.2318	0.0464	ppb	347.50	1000.	
82 Se	0.5175	0.1035	ppb	477.29	1000.	
88 Sr	13.605	2.721	ppb	4.15	2000.	
98 Mo	0.1166	0.0233	ppb	35.68	1000.	
107 Ag	0.0047	0.0009	ppb	395.94	100.	
109 Ag	-0.0042	-0.0008	ppb	762.22	#VALUE!	
111 Cd	0.013	0.0026	ppb	1967.20	#VALUE!	
114 Cd	0.0124	0.0025	ppb	543.03	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.1039	0.0208	ppb	94.95	1000.	
120 Sn	0.0211	0.0042	ppb	311.89	#VALUE!	
121 Sb	0.0297	0.0059	ppb	43.80	#VALUE!	
123 Sb	0.0598	0.012	ppb	21.20	1000.	
135 Ba	2.31	0.462	ppb	0.90	2000.	
137 Ba	2.2585	0.4517	ppb	1.40	#VALUE!	
182 W	0.0738	0.0148	ppb	44.86	1000.	
203 Tl	0.022	0.0044	ppb	86.44	1000.	
205 Tl	0.0066	0.0013	ppb	183.92	#VALUE!	
208 Pb	0.0776	0.0155	ppb	17.55	2000.	
232 Th	0.1131	0.0226	ppb	3.58	1000.	
238 U	0.0088	0.0018	ppb	120.72	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9108850.00	4.12	8477054.00	107.5	69.5 - 120	
45 Sc	3088672.00	1.73	2909174.30	106.2	69.5 - 120	
89 Y	3243214.50	1.56	3117971.30	104.0	69.5 - 120	
159 Tb	2739893.30	1.63	2784003.50	98.4	69.5 - 120	
209 Bi	1488009.80	1.27	1452804.80	102.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000119

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\081SMPL.D\081SMPL.D#
Date Acquired: Oct 11 2018 11:39 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9693-004S
Misc Info:
Vial Number: 2409
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	51.5	10.3	ppb	0.38	100.	
11 B	481.15	96.23	ppb	0.99	1000.	
23 Na	9,105.	1,821.	ppb	1.10	200000.	
25 Mg	6,030.	1,206.	ppb	0.36	200000.	
27 Al	2,162.	432.4	ppb	1.66	200000.	
28 Si	5,000.	1,000.	ppb	2.69	#VALUE!	
29 Si	4,259.5	851.9	ppb	6.30	10000.	
39 K	10,865.	2,173.	ppb	1.43	200000.	
43 Ca	5,895.	1,179.	ppb	1.16	#VALUE!	
44 Ca	5,875.	1,175.	ppb	2.94	200000.	
51 V	512.5	102.5	ppb	0.89	1000.	
52 Cr	206.6	41.32	ppb	2.64	2000.	
53 Cr	198.1	39.62	ppb	5.55	#VALUE!	
55 Mn	509.	101.8	ppb	1.69	2000.	
56 Fe	1,004.5	200.9	ppb	2.86	#VALUE!	
57 Fe	1,099.5	219.9	ppb	2.87	100000.	
59 Co	500.5	100.1	ppb	0.42	1000.	
60 Ni	479.1	95.82	ppb	2.71	1000.	
63 Cu	243.2	48.64	ppb	4.85	#VALUE!	
65 Cu	247.1	49.42	ppb	2.90	2000.	
66 Zn	432.55	86.51	ppb	3.44	2000.	
68 Zn	555.5	111.1	ppb	3.26	#VALUE!	
75 As	104.4	20.88	ppb	2.30	1000.	
82 Se	105.95	21.19	ppb	2.11	1000.	
88 Sr	526.5	105.3	ppb	0.95	2000.	
98 Mo	93.4	18.68	ppb	2.20	1000.	
107 Ag	50.1	10.02	ppb	3.79	100.	
109 Ag	50.05	10.01	ppb	3.91	#VALUE!	
111 Cd	241.75	48.35	ppb	3.72	#VALUE!	
114 Cd	240.8	48.16	ppb	3.35	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	500.5	100.1	ppb	3.41	1000.	
120 Sn	497.8	99.56	ppb	3.58	#VALUE!	
121 Sb	100.95	20.19	ppb	3.45	#VALUE!	
123 Sb	101.7	20.34	ppb	3.29	1000.	
135 Ba	2,108.5	421.7	ppb	2.97	2000.	
137 Ba	2,050.5	410.1	ppb	1.26	#VALUE!	
182 W	97.95	19.59	ppb	3.79	1000.	
203 Tl	98.4	19.68	ppb	2.10	1000.	
205 Tl	98.15	19.63	ppb	4.39	#VALUE!	
208 Pb	98.45	19.69	ppb	4.12	2000.	
232 Th	99.25	19.85	ppb	0.69	1000.	
238 U	107.6	21.52	ppb	4.20	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9179757.00	1.09	8477054.00	108.3	69.5 - 120	
45 Sc	3069276.00	1.43	2909174.30	105.5	69.5 - 120	
89 Y	3241437.80	1.02	3117971.30	104.0	69.5 - 120	
159 Tb	2750519.30	0.95	2784003.50	98.8	69.5 - 120	
209 Bi	1478959.90	1.39	1452804.80	101.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000120

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\082SMPL.D\082SMPL.D#
Date Acquired: Oct 11 2018 11:43 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9693-004P
Misc Info:
Vial Number: 2410
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	48.835	9.767	ppb	1.74	100.	
11 B	468.25	93.65	ppb	3.52	1000.	
23 Na	9,185.	1,837.	ppb	1.81	200000.	
25 Mg	6,070.	1,214.	ppb	0.42	200000.	
27 Al	2,206.5	441.3	ppb	0.04	200000.	
28 Si	5,115.	1,023.	ppb	2.93	#VALUE!	
29 Si	4,323.	864.6	ppb	7.55	10000.	
39 K	10,945.	2,189.	ppb	1.11	200000.	
43 Ca	5,860.	1,172.	ppb	0.36	#VALUE!	
44 Ca	5,875.	1,175.	ppb	1.10	200000.	
51 V	516.5	103.3	ppb	0.89	1000.	
52 Cr	207.8	41.56	ppb	1.78	2000.	
53 Cr	193.75	38.75	ppb	2.11	#VALUE!	
55 Mn	514.	102.8	ppb	1.03	2000.	
56 Fe	1,019.5	203.9	ppb	2.13	#VALUE!	
57 Fe	1,149.	229.8	ppb	4.91	100000.	
59 Co	510.5	102.1	ppb	1.59	1000.	
60 Ni	478.6	95.72	ppb	2.57	1000.	
63 Cu	243.15	48.63	ppb	2.54	#VALUE!	
65 Cu	248.25	49.65	ppb	1.27	2000.	
66 Zn	433.	86.6	ppb	1.74	2000.	
68 Zn	551.5	110.3	ppb	1.72	#VALUE!	
75 As	102.85	20.57	ppb	1.22	1000.	
82 Se	104.2	20.84	ppb	3.42	1000.	
88 Sr	528.5	105.7	ppb	0.65	2000.	
98 Mo	94.95	18.99	ppb	1.97	1000.	
107 Ag	50.3	10.06	ppb	2.07	100.	
109 Ag	50.15	10.03	ppb	2.14	#VALUE!	
111 Cd	242.85	48.57	ppb	2.48	#VALUE!	
114 Cd	240.5	48.1	ppb	1.77	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	503.	100.6	ppb	1.93	1000.	
120 Sn	498.8	99.76	ppb	1.60	#VALUE!	
121 Sb	101.	20.2	ppb	1.71	#VALUE!	
123 Sb	101.45	20.29	ppb	3.03	1000.	
135 Ba	2,112.	422.4	ppb	1.64	2000.	
137 Ba	2,073.	414.6	ppb	0.32	#VALUE!	
182 W	98.95	19.79	ppb	2.18	1000.	
203 Tl	98.8	19.76	ppb	2.56	1000.	
205 Tl	97.65	19.53	ppb	2.71	#VALUE!	
208 Pb	98.55	19.71	ppb	2.62	2000.	
232 Th	102.55	20.51	ppb	0.61	1000.	
238 U	108.75	21.75	ppb	2.44	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9507213.00	2.97	8477054.00	112.2	69.5 - 120	
45 Sc	3043570.80	1.80	2909174.30	104.6	69.5 - 120	
89 Y	3219734.80	1.04	3117971.30	103.3	69.5 - 120	
159 Tb	2731809.00	1.16	2784003.50	98.1	69.5 - 120	
209 Bi	1460573.40	0.24	1452804.80	100.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000121

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\083SMPL.D\083SMPL.D#
Date Acquired: Oct 11 2018 11:47 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9729-001
Misc Info:
Vial Number: 2411
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0179	0.0179	ppb	35.37	100.	
11 B	6.958	6.958	ppb	5.23	1000.	
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	2,673.	2,673.	ppb	0.87	200000.	
27 Al	26.04	26.04	ppb	1.80	200000.	
28 Si	3,252.	3,252.	ppb	0.77	#VALUE!	
29 Si	2,713.	2,713.	ppb	2.47	10000.	
39 K	3,549.	3,549.	ppb	6.29	200000.	
43 Ca	18,970.	18,970.	ppb	1.01	#VALUE!	
44 Ca	18,940.	18,940.	ppb	0.50	200000.	
51 V	1.188	1.188	ppb	16.52	1000.	
52 Cr	31.99	31.99	ppb	2.63	2000.	
53 Cr	18.09	18.09	ppb	6.76	#VALUE!	
55 Mn	12.26	12.26	ppb	2.32	2000.	
56 Fe	251.8	251.8	ppb	1.74	#VALUE!	
57 Fe	382.5	382.5	ppb	1.77	100000.	
59 Co	0.9206	0.9206	ppb	2.13	1000.	
60 Ni	31.99	31.99	ppb	1.80	1000.	
63 Cu	392.7	392.7	ppb	16.08	#VALUE!	
65 Cu	27.1	27.1	ppb	3.39	2000.	
66 Zn	31.61	31.61	ppb	1.95	2000.	
68 Zn	22.05	22.05	ppb	1.68	#VALUE!	
75 As	0.0044	0.0044	ppb	6501.80	1000.	
82 Se	-3.966	-3.966	ppb	32.93	1000.	LOW
88 Sr	187.3	187.3	ppb	0.51	2000.	
98 Mo	4.7	4.7	ppb	1.23	1000.	
107 Ag	0.0043	0.0043	ppb	142.93	100.	
109 Ag	0.0042	0.0042	ppb	197.03	#VALUE!	
111 Cd	-0.3386	-0.3386	ppb	29.77	#VALUE!	
114 Cd	0.0371	0.0371	ppb	35.78	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.9568	0.9568	ppb	3.42	1000.	
120 Sn	0.8974	0.8974	ppb	4.25	#VALUE!	
121 Sb	5.773	5.773	ppb	2.77	#VALUE!	
123 Sb	5.71	5.71	ppb	0.98	1000.	
135 Ba	10.2	10.2	ppb	2.01	2000.	
137 Ba	10.36	10.36	ppb	1.55	#VALUE!	
182 W	0.8463	0.8463	ppb	10.12	1000.	
203 Tl	0.0206	0.0206	ppb	11.75	1000.	
205 Tl	0.0133	0.0133	ppb	18.92	#VALUE!	
208 Pb	0.6802	0.6802	ppb	4.08	2000.	
232 Th	1.076	1.076	ppb	62.98	1000.	
238 U	0.7644	0.7644	ppb	1.30	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3341682.80	1.01	8477054.00	39.4	69.5 - 120	IS Fai
45 Sc	2217652.80	1.02	2909174.30	76.2	69.5 - 120	
89 Y	2385691.00	2.28	3117971.30	76.5	69.5 - 120	
159 Tb	2131737.80	2.69	2784003.50	76.6	69.5 - 120	
209 Bi	1084266.90	1.88	1452804.80	74.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4000122

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\084SMPL.D\084SMPL.D#
Date Acquired: Oct 11 2018 11:51 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2412
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0022	0.0022	ppb	51.28	100.	
11 B	1.033	1.033	ppb	19.49	1000.	
23 Na	406.3	406.3	ppb	13.86	200000.	
25 Mg	0.7182	0.7182	ppb	13.62	200000.	
27 Al	0.6315	0.6315	ppb	6.08	200000.	
28 Si	-11.12	-11.12	ppb	399.19	#VALUE!	
29 Si	-301.9	-301.9	ppb	29.37	10000.	LOW
39 K	1.225	1.225	ppb	203.76	200000.	
43 Ca	-0.5857	-0.5857	ppb	1059.60	#VALUE!	
44 Ca	-2.022	-2.022	ppb	28.26	200000.	
51 V	-0.1207	-0.1207	ppb	16.47	1000.	
52 Cr	-0.257	-0.257	ppb	3.82	2000.	
53 Cr	-10.91	-10.91	ppb	1.64	#VALUE!	
55 Mn	0.034	0.034	ppb	7.38	2000.	
56 Fe	-2.37	-2.37	ppb	83.54	#VALUE!	
57 Fe	-1.923	-1.923	ppb	38.22	100000.	
59 Co	0.0019	0.0019	ppb	128.24	1000.	
60 Ni	0.237	0.237	ppb	9.17	1000.	
63 Cu	3.049	3.049	ppb	2.18	#VALUE!	
65 Cu	1.437	1.437	ppb	16.63	2000.	
66 Zn	2.205	2.205	ppb	24.33	2000.	
68 Zn	2.809	2.809	ppb	21.76	#VALUE!	
75 As	0.3321	0.3321	ppb	83.35	1000.	
82 Se	1.092	1.092	ppb	75.53	1000.	
88 Sr	0.0129	0.0129	ppb	40.84	2000.	
98 Mo	0.0101	0.0101	ppb	21.36	1000.	
107 Ag	0.0009	0.0009	ppb	403.49	100.	
109 Ag	-0.0019	-0.0019	ppb	113.54	#VALUE!	
111 Cd	-0.2117	-0.2117	ppb	37.88	#VALUE!	
114 Cd	0.0019	0.0019	ppb	545.97	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0498	0.0498	ppb	28.81	1000.	
120 Sn	0.0616	0.0616	ppb	25.26	#VALUE!	
121 Sb	0.0069	0.0069	ppb	95.01	#VALUE!	
123 Sb	0.0116	0.0116	ppb	38.17	1000.	
135 Ba	0.0062	0.0062	ppb	192.76	2000.	
137 Ba	0.0099	0.0099	ppb	91.91	#VALUE!	
182 W	0.047	0.047	ppb	18.87	1000.	
203 Tl	0.003	0.003	ppb	82.21	1000.	
205 Tl	0.0004	0.0004	ppb	643.22	#VALUE!	
208 Pb	0.0043	0.0043	ppb	50.66	2000.	
232 Th	0.0144	0.0144	ppb	33.09	1000.	
238 U	-0.0001	-0.0001	ppb	794.83	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8500037.00	4.89	8477054.00	100.3	69.5 - 120	
45 Sc	3197632.00	2.46	2909174.30	109.9	69.5 - 120	
89 Y	3415256.50	1.88	3117971.30	109.5	69.5 - 120	
159 Tb	2783855.30	1.56	2784003.50	100.0	69.5 - 120	
209 Bi	1576369.50	0.70	1452804.80	108.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000123

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\085SMPL.D\085SMPL.D#
Date Acquired: Oct 11 2018 11:55 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: PBSLJ10IMS1
Misc Info:
Vial Number: 2501
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.01	0.002	ppb	119.71	100.	
11 B	5.57	1.114	ppb	9.72	1000.	
23 Na	1,281.	256.2	ppb	4.77	200000.	
25 Mg	13.545	2.709	ppb	2.38	200000.	
27 Al	15.755	3.151	ppb	1.25	200000.	
28 Si	12.87	2.574	ppb	1068.80	#VALUE!	
29 Si	-1,059.	-211.8	ppb	28.88	10000.	LOW
39 K	49.75	9.95	ppb	13.32	200000.	
43 Ca	40.565	8.113	ppb	65.38	#VALUE!	
44 Ca	14.41	2.882	ppb	43.65	200000.	
51 V	0.432	0.0864	ppb	171.78	1000.	
52 Cr	3.52	0.704	ppb	3.65	2000.	
53 Cr	105.2	21.04	ppb	1.98	#VALUE!	
55 Mn	0.6415	0.1283	ppb	15.95	2000.	
56 Fe	40.235	8.047	ppb	3.76	#VALUE!	
57 Fe	28.885	5.777	ppb	33.51	100000.	
59 Co	0.0331	0.0066	ppb	50.06	1000.	
60 Ni	3.673	0.7346	ppb	2.11	1000.	
63 Cu	9.05	1.81	ppb	4.84	#VALUE!	
65 Cu	3.739	0.7478	ppb	5.07	2000.	
66 Zn	4.5205	0.9041	ppb	7.61	2000.	
68 Zn	14.56	2.912	ppb	11.88	#VALUE!	
75 As	-0.0526	-0.0105	ppb	1389.70	1000.	
82 Se	-1.024	-0.2048	ppb	80.76	1000.	
88 Sr	0.2338	0.0468	ppb	9.73	2000.	
98 Mo	0.1682	0.0336	ppb	13.18	1000.	
107 Ag	0.0135	0.0027	ppb	71.77	100.	
109 Ag	0.0002	0.	ppb	12443.00	#VALUE!	
111 Cd	-0.2561	-0.0512	ppb	47.55	#VALUE!	
114 Cd	0.0666	0.0133	ppb	85.51	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	35.55	7.11	ppb	2.52	1000.	
120 Sn	35.47	7.094	ppb	2.26	#VALUE!	
121 Sb	0.0538	0.0108	ppb	48.41	#VALUE!	
123 Sb	0.0986	0.0197	ppb	11.95	1000.	
135 Ba	0.2112	0.0422	ppb	9.27	2000.	
137 Ba	0.1699	0.034	ppb	24.02	#VALUE!	
182 W	0.2749	0.055	ppb	14.73	1000.	
203 Tl	0.0198	0.004	ppb	58.63	1000.	
205 Tl	-0.0004	-0.0001	ppb	1419.60	#VALUE!	
208 Pb	0.1267	0.0253	ppb	36.25	2000.	
232 Th	0.3312	0.0662	ppb	9.24	1000.	
238 U	0.0117	0.0023	ppb	11.95	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8846208.00	2.62	8477054.00	104.4	69.5 - 120	
45 Sc	3178129.00	1.69	2909174.30	109.2	69.5 - 120	
89 Y	3333879.80	0.85	3117971.30	106.9	69.5 - 120	
159 Tb	2743729.30	1.69	2784003.50	98.6	69.5 - 120	
209 Bi	1476132.90	1.11	1452804.80	101.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000124

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\086SMPL.D\086SMPL.D#
Date Acquired: Oct 11 2018 11:59 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: LCSOLJ10IMS1
Misc Info:
Vial Number: 2502
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	51.4	10.28	ppb	1.61	100.	
11 B	493.8	98.76	ppb	0.62	1000.	
23 Na	8,305.	1,661.	ppb	0.84	200000.	
25 Mg	5,200.	1,040.	ppb	1.17	200000.	
27 Al	2,111.	422.2	ppb	0.47	200000.	
28 Si	1,021.5	204.3	ppb	6.28	#VALUE!	
29 Si	-91.2	-18.24	ppb	172.26	10000.	
39 K	10,330.	2,066.	ppb	0.59	200000.	
43 Ca	3,253.5	650.7	ppb	1.87	#VALUE!	
44 Ca	2,930.5	586.1	ppb	1.44	200000.	
51 V	515.5	103.1	ppb	0.53	1000.	
52 Cr	215.55	43.11	ppb	1.80	2000.	
53 Cr	336.65	67.33	ppb	1.05	#VALUE!	
55 Mn	518.5	103.7	ppb	1.11	2000.	
56 Fe	1,087.5	217.5	ppb	3.36	#VALUE!	
57 Fe	1,131.5	226.3	ppb	2.83	100000.	
59 Co	508.	101.6	ppb	1.15	1000.	
60 Ni	487.05	97.41	ppb	1.57	1000.	
63 Cu	251.15	50.23	ppb	2.06	#VALUE!	
65 Cu	249.4	49.88	ppb	2.74	2000.	
66 Zn	417.1	83.42	ppb	2.69	2000.	
68 Zn	561.	112.2	ppb	1.56	#VALUE!	
75 As	99.45	19.89	ppb	2.09	1000.	
82 Se	95.05	19.01	ppb	2.81	1000.	
88 Sr	521.5	104.3	ppb	0.21	2000.	
98 Mo	96.05	19.21	ppb	1.39	1000.	
107 Ag	51.15	10.23	ppb	2.27	100.	
109 Ag	51.5	10.3	ppb	3.19	#VALUE!	
111 Cd	238.65	47.73	ppb	2.53	#VALUE!	
114 Cd	239.05	47.81	ppb	2.14	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	552.	110.4	ppb	1.68	1000.	
120 Sn	549.	109.8	ppb	2.19	#VALUE!	
121 Sb	102.4	20.48	ppb	1.18	#VALUE!	
123 Sb	101.95	20.39	ppb	2.61	1000.	
135 Ba	2,143.5	428.7	ppb	1.98	2000.	
137 Ba	2,090.5	418.1	ppb	0.77	#VALUE!	
182 W	100.1	20.02	ppb	1.35	1000.	
203 Tl	99.2	19.84	ppb	3.59	1000.	
205 Tl	98.45	19.69	ppb	2.73	#VALUE!	
208 Pb	99.8	19.96	ppb	2.24	2000.	
232 Th	100.	20.	ppb	1.25	1000.	
238 U	112.35	22.47	ppb	2.45	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9274597.00	2.38	8477054.00	109.4	69.5 - 120	
45 Sc	3174404.00	1.35	2909174.30	109.1	69.5 - 120	
89 Y	3283257.00	0.65	3117971.30	105.3	69.5 - 120	
159 Tb	2733602.50	0.91	2784003.50	98.2	69.5 - 120	
209 Bi	1430777.10	0.33	1452804.80	98.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000125

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\087_CCV.D\087_CCV.D#
Date Acquired: Oct 12 2018 12:04 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	26.68	ppb	0.58	25	106.72	
11 B	27.06	ppb	3.70	25	108.24	
23 Na	4,921.	ppb	1.58	5,000	98.42	
25 Mg	4,805.	ppb	0.27	5,000	96.1	
27 Al	484.9	ppb	0.53	500	96.98	
28 Si	528.4	ppb	2.42	500	105.68	
29 Si	321.2	ppb	11.36	500	64.24	Fail
39 K	4,979.	ppb	0.56	5,000	99.58	
43 Ca	4,896.	ppb	2.52	5,000	97.92	
44 Ca	5,104.	ppb	1.00	5,000	102.08	
51 V	25.13	ppb	1.80	25	100.52	
52 Cr	24.97	ppb	2.16	25	99.88	
53 Cr	19.88	ppb	4.37	25	79.52	
55 Mn	25.23	ppb	2.87	25	100.92	
56 Fe	4,800.	ppb	2.02	5,000	96	
57 Fe	4,897.	ppb	1.83	5,000	97.94	
59 Co	23.99	ppb	3.01	25	95.96	
60 Ni	22.85	ppb	2.98	25	91.4	
63 Cu	23.54	ppb	2.82	25	94.16	
65 Cu	23.29	ppb	2.91	25	93.16	
66 Zn	20.55	ppb	2.73	25	82.2	Fail
68 Zn	24.18	ppb	2.75	25	96.72	
75 As	24.75	ppb	0.23	25	99	
82 Se	24.95	ppb	2.01	25	99.8	
88 Sr	26.45	ppb	0.88	25	105.8	
98 Mo	23.84	ppb	2.53	25	95.36	
107 Ag	23.65	ppb	1.83	25	94.6	
109 Ag	23.73	ppb	1.73	25	94.92	
111 Cd	23.58	ppb	2.36	25	94.32	
114 Cd	23.56	ppb	2.18	25	94.24	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.09	ppb	1.25	25	100.36	
120 Sn	24.86	ppb	2.57	25	99.44	
121 Sb	24.99	ppb	2.07	25	99.96	
123 Sb	25.31	ppb	1.27	25	101.24	
135 Ba	25.07	ppb	2.64	25	100.28	
137 Ba	25.49	ppb	2.14	25	101.96	
182 W	24.22	ppb	1.46	25	96.88	
203 Tl	24.08	ppb	2.99	25	96.32	
205 Tl	23.6	ppb	1.95	25	94.4	
208 Pb	23.98	ppb	1.65	25	95.92	
232 Th	25.91	ppb	1.71	25	103.64	
238 U	26.79	ppb	1.46	25	107.16	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8159435.50	3.04	8477054.00	96.3	80 - 120.4	
45 Sc	3141163.00	0.75	2909174.30	108.0	80 - 120.4	
89 Y	3308869.50	0.65	3117971.30	106.1	80 - 120.4	
159 Tb	2775872.00	0.36	2784003.50	99.7	80 - 120.4	
209 Bi	1478615.10	0.75	1452804.80	101.8	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000126

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\088_CCB.D\088_CCB.D#
Date Acquired: Oct 12 2018 12:08 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0015	ppb	89.78	1.00	
11 B	0.7223	ppb	23.91	1.00	
23 Na	48.29	ppb	3.55	1.00	
25 Mg	-0.0277	ppb	47.48	1.00	
27 Al	0.2862	ppb	16.28	1.00	
28 Si	83.37	ppb	45.20	1.00	
29 Si	-48.63	ppb	193.19	1.00	
39 K	4.651	ppb	41.45	1.00	
43 Ca	-1.876	ppb	197.28	1.00	
44 Ca	-7.051	ppb	17.57	1.00	
51 V	-0.0131	ppb	260.81	1.00	
52 Cr	-0.1524	ppb	20.39	1.00	
53 Cr	-8.459	ppb	4.36	1.00	
55 Mn	0.0037	ppb	144.06	1.00	
56 Fe	1.37	ppb	15.10	1.00	
57 Fe	2.391	ppb	67.09	1.00	
59 Co	0.0027	ppb	231.65	1.00	
60 Ni	0.2942	ppb	13.93	1.00	
63 Cu	0.4098	ppb	5.95	1.00	
65 Cu	0.2853	ppb	8.11	1.00	
66 Zn	0.187	ppb	21.02	1.00	
68 Zn	3.355	ppb	7.97	1.00	
75 As	0.0788	ppb	112.25	1.00	
82 Se	-0.1424	ppb	181.32	1.00	
88 Sr	-0.0004	ppb	246.72	1.00	
98 Mo	0.0143	ppb	6.29	1.00	
107 Ag	0.0039	ppb	169.88	1.00	
109 Ag	-0.0009	ppb	41.50	1.00	
111 Cd	-0.0966	ppb	59.00	1.00	
114 Cd	0.016	ppb	58.30	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0454	ppb	24.85	1.00	
120 Sn	0.0389	ppb	21.08	1.00	
121 Sb	0.0122	ppb	10.05	1.00	
123 Sb	0.0164	ppb	35.78	1.00	
135 Ba	0.0068	ppb	156.37	1.00	
137 Ba	-0.0033	ppb	87.86	1.00	
182 W	0.0561	ppb	17.67	1.00	
203 Tl	0.0157	ppb	103.38	1.00	
205 Tl	0.0099	ppb	76.63	1.00	
208 Pb	0.0022	ppb	191.51	1.00	
232 Th	0.3467	ppb	18.30	1.00	Fail
238 U	0.0015	ppb	132.59	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8314823.00	5.32	8477054.00	98.1	79.5 - 120	
45 Sc	3090766.50	3.00	2909174.30	106.2	79.5 - 120	
89 Y	3257222.80	1.50	3117971.30	104.5	79.5 - 120	
159 Tb	2743195.30	2.47	2784003.50	98.5	79.5 - 120	
209 Bi	1495520.00	1.09	1452804.80	102.9	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000127

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\089SMPL.D\089SMPL.D#
Date Acquired: Oct 12 2018 12:12 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9803-001
Misc Info:
Vial Number: 2503
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	1.189	0.2378	ppb	4.15	100.	
11 B	37.16	7.432	ppb	2.38	1000.	
23 Na	4,838.5	967.7	ppb	1.25	200000.	
25 Mg	9,260.	1,852.	ppb	0.58	200000.	
27 Al	22,615.	4,523.	ppb	0.34	200000.	
28 Si	2,905.5	581.1	ppb	1.41	#VALUE!	
29 Si	2,418.	483.6	ppb	3.45	10000.	
39 K	10,350.	2,070.	ppb	0.90	200000.	
43 Ca	54,800.	10,960.	ppb	0.62	#VALUE!	
44 Ca	55,550.	11,110.	ppb	0.41	200000.	
51 V	29.895	5.979	ppb	2.99	1000.	
52 Cr	115.55	23.11	ppb	1.25	2000.	
53 Cr	224.2	44.84	ppb	3.92	#VALUE!	
55 Mn	3,518.	703.6	ppb	2.01	2000.	
56 Fe	79,150.	15,830.	ppb	1.82	#VALUE!	
57 Fe	77,500.	15,500.	ppb	1.70	100000.	
59 Co	23.3	4.66	ppb	3.38	1000.	
60 Ni	87.15	17.43	ppb	3.93	1000.	
63 Cu	2,264.5	452.9	ppb	0.52	#VALUE!	
65 Cu	2,313.5	462.7	ppb	0.44	2000.	
66 Zn	4,343.5	868.7	ppb	0.40	2000.	
68 Zn	4,120.	824.	ppb	0.70	#VALUE!	
75 As	46.81	9.362	ppb	1.49	1000.	
82 Se	23.955	4.791	ppb	15.48	1000.	
88 Sr	304.7	60.94	ppb	1.34	2000.	
98 Mo	53.25	10.65	ppb	0.66	1000.	
107 Ag	35.26	7.052	ppb	2.57	100.	
109 Ag	35.16	7.032	ppb	1.41	#VALUE!	
111 Cd	20.185	4.037	ppb	3.84	#VALUE!	
114 Cd	20.11	4.022	ppb	2.63	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	151.55	30.31	ppb	1.06	1000.	
120 Sn	149.5	29.9	ppb	1.83	#VALUE!	
121 Sb	8.845	1.769	ppb	3.66	#VALUE!	
123 Sb	8.97	1.794	ppb	2.42	1000.	
135 Ba	777.	155.4	ppb	1.98	2000.	
137 Ba	778.	155.6	ppb	1.65	#VALUE!	
182 W	6.82	1.364	ppb	2.20	1000.	
203 Tl	0.4015	0.0803	ppb	3.91	1000.	
205 Tl	0.3548	0.071	ppb	5.03	#VALUE!	
208 Pb	60.7	12.14	ppb	1.49	2000.	
232 Th	2.8265	0.5653	ppb	48.35	1000.	
238 U	10.325	2.065	ppb	2.37	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8800453.00	0.77	8477054.00	103.8	69.5 - 120	
45 Sc	3148046.80	0.16	2909174.30	108.2	69.5 - 120	
89 Y	3315860.30	0.75	3117971.30	106.3	69.5 - 120	
159 Tb	2735222.30	0.57	2784003.50	98.2	69.5 - 120	
209 Bi	1644969.00	1.01	1452804.80	113.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000128

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\090SMPL.D\090SMPL.D#
Date Acquired: Oct 12 2018 12:16 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2504
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0049	0.0049	ppb	22.41	100.	
11 B	0.7427	0.7427	ppb	23.36	1000.	
23 Na	32.68	32.68	ppb	1.90	200000.	
25 Mg	0.1241	0.1241	ppb	20.73	200000.	
27 Al	0.7271	0.7271	ppb	20.04	200000.	
28 Si	46.55	46.55	ppb	26.21	#VALUE!	
29 Si	-81.5	-81.5	ppb	53.55	10000.	
39 K	2.832	2.832	ppb	47.74	200000.	
43 Ca	-3.825	-3.825	ppb	38.72	#VALUE!	
44 Ca	-9.422	-9.422	ppb	21.55	200000.	
51 V	-0.0655	-0.0655	ppb	158.42	1000.	
52 Cr	-0.156	-0.156	ppb	16.09	2000.	
53 Cr	-7.922	-7.922	ppb	7.24	#VALUE!	
55 Mn	0.0101	0.0101	ppb	92.17	2000.	
56 Fe	-2.472	-2.472	ppb	77.83	#VALUE!	
57 Fe	0.8097	0.8097	ppb	142.27	100000.	
59 Co	0.0039	0.0039	ppb	33.01	1000.	
60 Ni	0.239	0.239	ppb	7.90	1000.	
63 Cu	0.3773	0.3773	ppb	8.99	#VALUE!	
65 Cu	0.2962	0.2962	ppb	5.30	2000.	
66 Zn	0.1541	0.1541	ppb	27.98	2000.	
68 Zn	1.287	1.287	ppb	11.65	#VALUE!	
75 As	0.0643	0.0643	ppb	251.48	1000.	
82 Se	0.6354	0.6354	ppb	115.82	1000.	
88 Sr	0.0085	0.0085	ppb	39.06	2000.	
98 Mo	0.0026	0.0026	ppb	119.03	1000.	
107 Ag	0.0028	0.0028	ppb	143.23	100.	
109 Ag	0.0018	0.0018	ppb	323.77	#VALUE!	
111 Cd	-0.0012	-0.0012	ppb	3126.60	#VALUE!	
114 Cd	0.0073	0.0073	ppb	62.08	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0325	0.0325	ppb	35.38	1000.	
120 Sn	0.0193	0.0193	ppb	61.97	#VALUE!	
121 Sb	0.0037	0.0037	ppb	177.70	#VALUE!	
123 Sb	0.0006	0.0006	ppb	638.03	1000.	
135 Ba	-0.0016	-0.0016	ppb	456.34	2000.	
137 Ba	0.0009	0.0009	ppb	165.58	#VALUE!	
182 W	0.0224	0.0224	ppb	18.08	1000.	
203 Tl	0.0066	0.0066	ppb	70.10	1000.	
205 Tl	0.0017	0.0017	ppb	115.38	#VALUE!	
208 Pb	0.011	0.011	ppb	60.64	2000.	
232 Th	0.0314	0.0314	ppb	9.74	1000.	
238 U	-0.0001	-0.0001	ppb	907.68	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8208100.50	4.08	8477054.00	96.8	69.5 - 120	
45 Sc	3116101.00	1.63	2909174.30	107.1	69.5 - 120	
89 Y	3324480.30	1.60	3117971.30	106.6	69.5 - 120	
159 Tb	2789741.50	1.75	2784003.50	100.2	69.5 - 120	
209 Bi	1528439.30	1.29	1452804.80	105.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000129

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\091SMPL.D\091SMPL.D#
Date Acquired: Oct 12 2018 12:20 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: PBWLJ11IMW2
Misc Info:
Vial Number: 2505
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0029	0.0029	ppb	50.61	100.	
11 B	8.372	8.372	ppb	4.11	1000.	
23 Na	38.11	38.11	ppb	1.17	200000.	
25 Mg	4.096	4.096	ppb	3.57	200000.	
27 Al	3.549	3.549	ppb	3.91	200000.	
28 Si	76.39	76.39	ppb	23.14	#VALUE!	
29 Si	-74.48	-74.48	ppb	44.62	10000.	
39 K	3.459	3.459	ppb	32.78	200000.	
43 Ca	2.221	2.221	ppb	278.25	#VALUE!	
44 Ca	-3.974	-3.974	ppb	65.63	200000.	
51 V	-0.1153	-0.1153	ppb	66.55	1000.	
52 Cr	-0.1237	-0.1237	ppb	17.50	2000.	
53 Cr	-7.288	-7.288	ppb	6.17	#VALUE!	
55 Mn	0.0782	0.0782	ppb	11.83	2000.	
56 Fe	0.2554	0.2554	ppb	411.90	#VALUE!	
57 Fe	4.819	4.819	ppb	52.15	100000.	
59 Co	0.0043	0.0043	ppb	110.95	1000.	
60 Ni	0.243	0.243	ppb	10.82	1000.	
63 Cu	0.3499	0.3499	ppb	8.98	#VALUE!	
65 Cu	0.3059	0.3059	ppb	0.60	2000.	
66 Zn	0.3332	0.3332	ppb	14.93	2000.	
68 Zn	0.9649	0.9649	ppb	24.13	#VALUE!	
75 As	-0.1094	-0.1094	ppb	129.98	1000.	
82 Se	-0.826	-0.826	ppb	130.99	1000.	
88 Sr	0.0265	0.0265	ppb	21.78	2000.	
98 Mo	0.0051	0.0051	ppb	41.41	1000.	
107 Ag	0.0028	0.0028	ppb	263.26	100.	
109 Ag	-0.0036	-0.0036	ppb	125.73	#VALUE!	
111 Cd	-0.0269	-0.0269	ppb	21.43	#VALUE!	
114 Cd	0.0128	0.0128	ppb	40.10	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0056	0.0056	ppb	69.90	1000.	
120 Sn	0.0172	0.0172	ppb	16.63	#VALUE!	
121 Sb	0.0033	0.0033	ppb	68.25	#VALUE!	
123 Sb	0.0021	0.0021	ppb	162.02	1000.	
135 Ba	0.3239	0.3239	ppb	17.76	2000.	
137 Ba	0.3758	0.3758	ppb	11.27	#VALUE!	
182 W	0.0127	0.0127	ppb	59.99	1000.	
203 Tl	0.0034	0.0034	ppb	87.87	1000.	
205 Tl	0.0026	0.0026	ppb	27.00	#VALUE!	
208 Pb	0.0067	0.0067	ppb	51.65	2000.	
232 Th	0.0249	0.0249	ppb	36.74	1000.	
238 U	-0.0006	-0.0006	ppb	74.44	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8513905.00	2.21	8477054.00	100.4	69.5 - 120	
45 Sc	3114941.50	1.50	2909174.30	107.1	69.5 - 120	
89 Y	3280349.00	0.95	3117971.30	105.2	69.5 - 120	
159 Tb	2769123.00	1.10	2784003.50	99.5	69.5 - 120	
209 Bi	1477668.40	1.58	1452804.80	101.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000130

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\092SMPL.D\092SMPL.D#
Date Acquired: Oct 12 2018 12:24 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: LCSWLJ11IMW2
Misc Info:
Vial Number: 2506
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	54.	10.8	ppb	2.20	100.	
11 B	503.5	100.7	ppb	2.86	1000.	
23 Na	7,935.	1,587.	ppb	1.51	200000.	
25 Mg	5,370.	1,074.	ppb	1.30	200000.	
27 Al	2,183.	436.6	ppb	0.80	200000.	
28 Si	1,178.5	235.7	ppb	3.84	#VALUE!	
29 Si	409.55	81.91	ppb	42.73	10000.	
39 K	10,800.	2,160.	ppb	0.58	200000.	
43 Ca	3,315.	663.	ppb	6.23	#VALUE!	
44 Ca	2,982.	596.4	ppb	2.25	200000.	
51 V	530.5	106.1	ppb	0.91	1000.	
52 Cr	213.1	42.62	ppb	1.87	2000.	
53 Cr	193.8	38.76	ppb	3.82	#VALUE!	
55 Mn	529.	105.8	ppb	1.39	2000.	
56 Fe	1,058.5	211.7	ppb	2.58	#VALUE!	
57 Fe	1,117.5	223.5	ppb	5.12	100000.	
59 Co	525.	105.	ppb	1.41	1000.	
60 Ni	500.	100.	ppb	3.08	1000.	
63 Cu	253.95	50.79	ppb	2.65	#VALUE!	
65 Cu	254.55	50.91	ppb	3.65	2000.	
66 Zn	445.1	89.02	ppb	3.17	2000.	
68 Zn	570.5	114.1	ppb	2.34	#VALUE!	
75 As	102.75	20.55	ppb	1.79	1000.	
82 Se	101.3	20.26	ppb	2.68	1000.	
88 Sr	512.5	102.5	ppb	0.38	2000.	
98 Mo	94.3	18.86	ppb	3.08	1000.	
107 Ag	51.5	10.3	ppb	2.20	100.	
109 Ag	51.85	10.37	ppb	2.38	#VALUE!	
111 Cd	250.15	50.03	ppb	2.35	#VALUE!	
114 Cd	250.25	50.05	ppb	2.63	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	503.5	100.7	ppb	2.38	1000.	
120 Sn	499.05	99.81	ppb	2.34	#VALUE!	
121 Sb	104.9	20.98	ppb	3.17	#VALUE!	
123 Sb	105.	21.	ppb	1.95	1000.	
135 Ba	2,173.5	434.7	ppb	2.31	2000.	
137 Ba	2,116.5	423.3	ppb	0.33	#VALUE!	
182 W	96.8	19.36	ppb	0.99	1000.	
203 Tl	100.9	20.18	ppb	2.75	1000.	
205 Tl	99.6	19.92	ppb	3.09	#VALUE!	
208 Pb	101.15	20.23	ppb	3.08	2000.	
232 Th	94.8	18.96	ppb	1.87	1000.	
238 U	108.5	21.7	ppb	3.37	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8710479.00	3.07	8477054.00	102.8	69.5 - 120	
45 Sc	3095039.30	0.75	2909174.30	106.4	69.5 - 120	
89 Y	3245290.30	0.42	3117971.30	104.1	69.5 - 120	
159 Tb	2757045.50	0.78	2784003.50	99.0	69.5 - 120	
209 Bi	1457423.50	0.83	1452804.80	100.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000131

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\093SMPL.D\093SMPL.D#
Date Acquired: Oct 12 2018 12:28 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9868-001
Misc Info:
Vial Number: 2507
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0756	0.0756	ppb	8.77	100.	
11 B	2,797.	2,797.	ppb	4.54	1000.	>LDR
23 Na	69,870.	69,870.	ppb	2.29	200000.	
25 Mg	1,298.	1,298.	ppb	1.42	200000.	
27 Al	3,173.	3,173.	ppb	1.24	200000.	
28 Si	7,258.	7,258.	ppb	0.94	#VALUE!	
29 Si	6,615.	6,615.	ppb	1.76	10000.	
39 K	41,420.	41,420.	ppb	0.30	200000.	
43 Ca	6,987.	6,987.	ppb	1.43	#VALUE!	
44 Ca	7,053.	7,053.	ppb	0.52	200000.	
51 V	6.343	6.343	ppb	6.76	1000.	
52 Cr	11.62	11.62	ppb	2.53	2000.	
53 Cr	4.426	4.426	ppb	12.08	#VALUE!	
55 Mn	26.5	26.5	ppb	3.47	2000.	
56 Fe	2,949.	2,949.	ppb	3.09	#VALUE!	
57 Fe	3,082.	3,082.	ppb	3.14	100000.	
59 Co	0.3912	0.3912	ppb	3.70	1000.	
60 Ni	5.804	5.804	ppb	6.71	1000.	
63 Cu	27.34	27.34	ppb	2.25	#VALUE!	
65 Cu	26.03	26.03	ppb	0.35	2000.	
66 Zn	100.3	100.3	ppb	1.62	2000.	
68 Zn	96.44	96.44	ppb	0.69	#VALUE!	
75 As	11.48	11.48	ppb	0.64	1000.	
82 Se	49.05	49.05	ppb	0.72	1000.	
88 Sr	58.83	58.83	ppb	0.64	2000.	
98 Mo	1.434	1.434	ppb	0.53	1000.	
107 Ag	117.5	117.5	ppb	0.98	100.	>LDR
109 Ag	118.6	118.6	ppb	0.52	#VALUE!	
111 Cd	0.1423	0.1423	ppb	110.40	#VALUE!	
114 Cd	0.1095	0.1095	ppb	38.19	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.5998	0.5998	ppb	1.52	1000.	
120 Sn	0.585	0.585	ppb	5.49	#VALUE!	
121 Sb	3.208	3.208	ppb	2.80	#VALUE!	
123 Sb	3.159	3.159	ppb	2.63	1000.	
135 Ba	16.92	16.92	ppb	1.93	2000.	
137 Ba	17.06	17.06	ppb	1.67	#VALUE!	
182 W	2.583	2.583	ppb	1.78	1000.	
203 Tl	0.0326	0.0326	ppb	25.68	1000.	
205 Tl	0.0213	0.0213	ppb	12.16	#VALUE!	
208 Pb	8.711	8.711	ppb	0.49	2000.	
232 Th	0.8677	0.8677	ppb	48.51	1000.	
238 U	0.1256	0.1256	ppb	4.33	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8017966.50	4.28	8477054.00	94.6	69.5 - 120	
45 Sc	3057873.30	0.46	2909174.30	105.1	69.5 - 120	
89 Y	3211930.00	0.64	3117971.30	103.0	69.5 - 120	
159 Tb	2691039.80	0.49	2784003.50	96.7	69.5 - 120	
209 Bi	1350772.80	3.25	1452804.80	93.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000132

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\094SMPL.D\094SMPL.D#
Date Acquired: Oct 12 2018 12:32 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9870-001
Misc Info:
Vial Number: 2508
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0873	0.0873	ppb	1.57	100.	
11 B	609.	609.	ppb	2.68	1000.	
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	16,310.	16,310.	ppb	1.64	200000.	
27 Al	1,805.	1,805.	ppb	2.95	200000.	
28 Si	20,900.	20,900.	ppb	3.47	#VALUE!	
29 Si	19,310.	19,310.	ppb	2.17	10000.	>LDR
39 K	40,780.	40,780.	ppb	1.15	200000.	
43 Ca	117,900.	117,900.	ppb	0.44	#VALUE!	
44 Ca	121,200.	121,200.	ppb	0.28	200000.	
51 V	3.728	3.728	ppb	7.68	1000.	
52 Cr	31.13	31.13	ppb	2.84	2000.	
53 Cr	29.67	29.67	ppb	9.14	#VALUE!	
55 Mn	662.7	662.7	ppb	2.60	2000.	
56 Fe	2,287.	2,287.	ppb	2.86	#VALUE!	
57 Fe	3,036.	3,036.	ppb	3.94	100000.	
59 Co	3.056	3.056	ppb	3.84	1000.	
60 Ni	9.583	9.583	ppb	6.35	1000.	
63 Cu	72.36	72.36	ppb	0.35	#VALUE!	
65 Cu	53.27	53.27	ppb	0.66	2000.	
66 Zn	239.8	239.8	ppb	0.69	2000.	
68 Zn	246.2	246.2	ppb	2.05	#VALUE!	
75 As	12.14	12.14	ppb	2.11	1000.	
82 Se	12.27	12.27	ppb	3.58	1000.	
88 Sr	961.7	961.7	ppb	0.37	2000.	
98 Mo	16.06	16.06	ppb	1.89	1000.	
107 Ag	0.3068	0.3068	ppb	3.91	100.	
109 Ag	0.3027	0.3027	ppb	3.92	#VALUE!	
111 Cd	0.1273	0.1273	ppb	49.00	#VALUE!	
114 Cd	0.2693	0.2693	ppb	8.67	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.766	2.766	ppb	3.96	1000.	
120 Sn	2.74	2.74	ppb	1.18	#VALUE!	
121 Sb	2.424	2.424	ppb	1.29	#VALUE!	
123 Sb	2.401	2.401	ppb	2.20	1000.	
135 Ba	248.6	248.6	ppb	1.04	2000.	
137 Ba	248.8	248.8	ppb	0.94	#VALUE!	
182 W	0.2744	0.2744	ppb	14.78	1000.	
203 Tl	0.0978	0.0978	ppb	16.04	1000.	
205 Tl	0.0765	0.0765	ppb	7.16	#VALUE!	
208 Pb	6.059	6.059	ppb	1.15	2000.	
232 Th	0.3039	0.3039	ppb	28.34	1000.	
238 U	1.49	1.49	ppb	1.97	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	6508604.50	1.94	8477054.00	76.8	69.5 - 120	
45 Sc	2886556.80	0.54	2909174.30	99.2	69.5 - 120	
89 Y	2992442.30	1.83	3117971.30	96.0	69.5 - 120	
159 Tb	2413672.30	1.29	2784003.50	86.7	69.5 - 120	
209 Bi	1197407.50	2.97	1452804.80	82.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000133

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\095SMPL.D\095SMPL.D#
Date Acquired: Oct 12 2018 12:36 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9870-003
Misc Info:
Vial Number: 2509
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0238	0.0238	ppb	14.37	100.	
11 B	757.2	757.2	ppb	0.82	1000.	
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	20,130.	20,130.	ppb	0.74	200000.	
27 Al	476.4	476.4	ppb	2.05	200000.	
28 Si	25,570.	25,570.	ppb	2.20	#VALUE!	
29 Si	23,570.	23,570.	ppb	2.14	10000.	>LDR
39 K	52,870.	52,870.	ppb	0.29	200000.	
43 Ca	136,300.	136,300.	ppb	1.13	#VALUE!	
44 Ca	142,100.	142,100.	ppb	0.72	200000.	
51 V	3.694	3.694	ppb	9.12	1000.	
52 Cr	15.39	15.39	ppb	3.67	2000.	
53 Cr	16.16	16.16	ppb	11.46	#VALUE!	
55 Mn	221.3	221.3	ppb	2.39	2000.	
56 Fe	389.2	389.2	ppb	2.69	#VALUE!	
57 Fe	1,435.	1,435.	ppb	7.85	100000.	
59 Co	2.046	2.046	ppb	2.22	1000.	
60 Ni	11.43	11.43	ppb	4.12	1000.	
63 Cu	78.87	78.87	ppb	0.48	#VALUE!	
65 Cu	50.08	50.08	ppb	0.93	2000.	
66 Zn	180.2	180.2	ppb	1.22	2000.	
68 Zn	186.6	186.6	ppb	0.51	#VALUE!	
75 As	14.14	14.14	ppb	1.77	1000.	
82 Se	15.81	15.81	ppb	3.75	1000.	
88 Sr	1,123.	1,123.	ppb	1.16	2000.	
98 Mo	19.99	19.99	ppb	3.20	1000.	
107 Ag	0.1736	0.1736	ppb	9.00	100.	
109 Ag	0.1684	0.1684	ppb	4.84	#VALUE!	
111 Cd	0.2193	0.2193	ppb	40.68	#VALUE!	
114 Cd	0.3626	0.3626	ppb	1.26	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.035	1.035	ppb	2.78	1000.	
120 Sn	1.023	1.023	ppb	3.53	#VALUE!	
121 Sb	3.108	3.108	ppb	0.42	#VALUE!	
123 Sb	3.055	3.055	ppb	4.83	1000.	
135 Ba	147.	147.	ppb	0.84	2000.	
137 Ba	148.	148.	ppb	0.70	#VALUE!	
182 W	0.1885	0.1885	ppb	5.54	1000.	
203 Tl	0.1053	0.1053	ppb	7.25	1000.	
205 Tl	0.1069	0.1069	ppb	9.70	#VALUE!	
208 Pb	1.34	1.34	ppb	2.15	2000.	
232 Th	0.2157	0.2157	ppb	17.68	1000.	
238 U	0.4746	0.4746	ppb	4.65	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	6496816.50	0.52	8477054.00	76.6	69.5 - 120	
45 Sc	3002039.80	0.75	2909174.30	103.2	69.5 - 120	
89 Y	3071535.30	1.93	3117971.30	98.5	69.5 - 120	
159 Tb	2466640.30	0.73	2784003.50	88.6	69.5 - 120	
209 Bi	1214114.00	2.10	1452804.80	83.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000134

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\096SMPL.D\096SMPL.D#
Date Acquired: Oct 12 2018 12:41 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9873-001
Misc Info:
Vial Number: 2510
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.3358	0.3358	ppb	2.45	100.	
11 B	17.95	17.95	ppb	2.76	1000.	
23 Na	1,655.	1,655.	ppb	0.44	200000.	
25 Mg	1,179.	1,179.	ppb	1.71	200000.	
27 Al	2,977.	2,977.	ppb	1.10	200000.	
28 Si	5,847.	5,847.	ppb	1.03	#VALUE!	
29 Si	5,195.	5,195.	ppb	0.25	10000.	
39 K	596.2	596.2	ppb	1.55	200000.	
43 Ca	4,042.	4,042.	ppb	2.05	#VALUE!	
44 Ca	4,136.	4,136.	ppb	0.93	200000.	
51 V	3.671	3.671	ppb	1.04	1000.	
52 Cr	5.757	5.757	ppb	3.60	2000.	
53 Cr	-1.114	-1.114	ppb	114.81	#VALUE!	
55 Mn	341.6	341.6	ppb	2.66	2000.	
56 Fe	3,672.	3,672.	ppb	3.58	#VALUE!	
57 Fe	3,759.	3,759.	ppb	3.40	100000.	
59 Co	27.64	27.64	ppb	4.21	1000.	
60 Ni	8.793	8.793	ppb	2.77	1000.	
63 Cu	29.99	29.99	ppb	4.31	#VALUE!	
65 Cu	29.65	29.65	ppb	3.39	2000.	
66 Zn	30.25	30.25	ppb	2.09	2000.	
68 Zn	32.27	32.27	ppb	1.54	#VALUE!	
75 As	8.108	8.108	ppb	4.43	1000.	
82 Se	0.3875	0.3875	ppb	68.36	1000.	
88 Sr	30.63	30.63	ppb	1.28	2000.	
98 Mo	0.3152	0.3152	ppb	3.36	1000.	
107 Ag	0.1308	0.1308	ppb	3.63	100.	
109 Ag	0.1194	0.1194	ppb	0.48	#VALUE!	
111 Cd	6.123	6.123	ppb	5.56	#VALUE!	
114 Cd	6.257	6.257	ppb	3.97	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.9744	0.9744	ppb	14.64	1000.	
120 Sn	0.9318	0.9318	ppb	1.11	#VALUE!	
121 Sb	1.367	1.367	ppb	3.92	#VALUE!	
123 Sb	1.425	1.425	ppb	4.20	1000.	
135 Ba	10.13	10.13	ppb	0.89	2000.	
137 Ba	10.07	10.07	ppb	4.23	#VALUE!	
182 W	2.377	2.377	ppb	0.70	1000.	
203 Tl	0.0378	0.0378	ppb	27.43	1000.	
205 Tl	0.03	0.03	ppb	13.32	#VALUE!	
208 Pb	30.42	30.42	ppb	2.12	2000.	
232 Th	1.039	1.039	ppb	5.11	1000.	
238 U	1.507	1.507	ppb	0.74	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8815796.00	4.77	8477054.00	104.0	69.5 - 120	
45 Sc	3333090.30	1.55	2909174.30	114.6	69.5 - 120	
89 Y	3452380.30	1.03	3117971.30	110.7	69.5 - 120	
159 Tb	2840193.50	0.65	2784003.50	102.0	69.5 - 120	
209 Bi	1509543.90	1.20	1452804.80	103.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000135

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\097SMPL.D\097SMPL.D#
Date Acquired: Oct 12 2018 12:45 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9873-002
Misc Info:
Vial Number: 2511
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.1479	0.1479	ppb	8.37	100.	
11 B	11.71	11.71	ppb	2.65	1000.	
23 Na	1,530.	1,530.	ppb	1.86	200000.	
25 Mg	607.	607.	ppb	1.84	200000.	
27 Al	206.7	206.7	ppb	1.23	200000.	
28 Si	3,586.	3,586.	ppb	0.11	#VALUE!	
29 Si	3,107.	3,107.	ppb	1.53	10000.	
39 K	220.9	220.9	ppb	1.26	200000.	
43 Ca	1,031.	1,031.	ppb	4.86	#VALUE!	
44 Ca	1,168.	1,168.	ppb	1.77	200000.	
51 V	0.043	0.043	ppb	102.00	1000.	
52 Cr	0.3788	0.3788	ppb	8.48	2000.	
53 Cr	-3.207	-3.207	ppb	11.11	#VALUE!	
55 Mn	142.2	142.2	ppb	2.43	2000.	
56 Fe	186.4	186.4	ppb	3.62	#VALUE!	
57 Fe	206.5	206.5	ppb	4.16	100000.	
59 Co	19.2	19.2	ppb	2.93	1000.	
60 Ni	4.227	4.227	ppb	3.20	1000.	
63 Cu	2.864	2.864	ppb	4.83	#VALUE!	
65 Cu	2.585	2.585	ppb	5.29	2000.	
66 Zn	8.152	8.152	ppb	4.43	2000.	
68 Zn	11.16	11.16	ppb	2.97	#VALUE!	
75 As	0.2952	0.2952	ppb	67.07	1000.	
82 Se	-0.2571	-0.2571	ppb	131.54	1000.	
88 Sr	15.53	15.53	ppb	1.02	2000.	
98 Mo	0.0171	0.0171	ppb	10.67	1000.	
107 Ag	0.0068	0.0068	ppb	35.23	100.	
109 Ag	0.0061	0.0061	ppb	89.36	#VALUE!	
111 Cd	0.1748	0.1748	ppb	71.34	#VALUE!	
114 Cd	0.1831	0.1831	ppb	13.50	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0039	0.0039	ppb	183.15	1000.	
120 Sn	0.023	0.023	ppb	37.73	#VALUE!	
121 Sb	0.0376	0.0376	ppb	24.57	#VALUE!	
123 Sb	0.0337	0.0337	ppb	21.05	1000.	
135 Ba	9.89	9.89	ppb	1.52	2000.	
137 Ba	9.775	9.775	ppb	3.50	#VALUE!	
182 W	0.0881	0.0881	ppb	7.25	1000.	
203 Tl	0.0176	0.0176	ppb	34.77	1000.	
205 Tl	0.0155	0.0155	ppb	18.92	#VALUE!	
208 Pb	0.5667	0.5667	ppb	6.45	2000.	
232 Th	0.0948	0.0948	ppb	8.99	1000.	
238 U	0.0441	0.0441	ppb	10.02	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8992683.00	1.77	8477054.00	106.1	69.5 - 120	
45 Sc	3310033.50	1.25	2909174.30	113.8	69.5 - 120	
89 Y	3417994.80	0.21	3117971.30	109.6	69.5 - 120	
159 Tb	2849370.00	1.02	2784003.50	102.3	69.5 - 120	
209 Bi	1507236.90	0.29	1452804.80	103.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000136

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\098SMPL.D\098SMPL.D#
Date Acquired: Oct 12 2018 12:49 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9873-003
Misc Info:
Vial Number: 2512
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0357	0.0357	ppb	12.93	100.	
11 B	39.78	39.78	ppb	4.17	1000.	
23 Na	12,510.	12,510.	ppb	0.24	200000.	
25 Mg	1,599.	1,599.	ppb	0.65	200000.	
27 Al	343.1	343.1	ppb	2.16	200000.	
28 Si	3,889.	3,889.	ppb	0.45	#VALUE!	
29 Si	3,354.	3,354.	ppb	1.21	10000.	
39 K	942.1	942.1	ppb	1.82	200000.	
43 Ca	6,173.	6,173.	ppb	1.37	#VALUE!	
44 Ca	6,281.	6,281.	ppb	0.39	200000.	
51 V	0.4306	0.4306	ppb	14.22	1000.	
52 Cr	0.6801	0.6801	ppb	4.39	2000.	
53 Cr	-2.21	-2.21	ppb	40.13	#VALUE!	
55 Mn	16.67	16.67	ppb	2.18	2000.	
56 Fe	502.5	502.5	ppb	1.95	#VALUE!	
57 Fe	611.8	611.8	ppb	3.54	100000.	
59 Co	0.4293	0.4293	ppb	3.89	1000.	
60 Ni	1.464	1.464	ppb	4.15	1000.	
63 Cu	1.888	1.888	ppb	2.33	#VALUE!	
65 Cu	1.401	1.401	ppb	2.49	2000.	
66 Zn	3.297	3.297	ppb	6.85	2000.	
68 Zn	6.741	6.741	ppb	2.45	#VALUE!	
75 As	0.451	0.451	ppb	26.03	1000.	
82 Se	0.1106	0.1106	ppb	490.33	1000.	
88 Sr	47.98	47.98	ppb	0.87	2000.	
98 Mo	0.0176	0.0176	ppb	23.50	1000.	
107 Ag	0.0433	0.0433	ppb	21.07	100.	
109 Ag	0.035	0.035	ppb	12.49	#VALUE!	
111 Cd	0.29	0.29	ppb	23.48	#VALUE!	
114 Cd	0.2804	0.2804	ppb	4.96	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0699	0.0699	ppb	20.18	1000.	
120 Sn	0.0791	0.0791	ppb	16.28	#VALUE!	
121 Sb	0.0535	0.0535	ppb	18.31	#VALUE!	
123 Sb	0.0496	0.0496	ppb	17.00	1000.	
135 Ba	5.057	5.057	ppb	2.30	2000.	
137 Ba	5.087	5.087	ppb	4.76	#VALUE!	
182 W	0.2048	0.2048	ppb	12.52	1000.	
203 Tl	0.011	0.011	ppb	25.17	1000.	
205 Tl	0.0079	0.0079	ppb	48.15	#VALUE!	
208 Pb	0.6343	0.6343	ppb	2.98	2000.	
232 Th	0.113	0.113	ppb	3.47	1000.	
238 U	0.0291	0.0291	ppb	17.51	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8779027.00	4.89	8477054.00	103.6	69.5 - 120	
45 Sc	3313424.00	1.02	2909174.30	113.9	69.5 - 120	
89 Y	3412297.50	0.73	3117971.30	109.4	69.5 - 120	
159 Tb	2830403.80	0.26	2784003.50	101.7	69.5 - 120	
209 Bi	1473700.50	1.19	1452804.80	101.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000137

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\099_CCV.D\099_CCV.D#
Date Acquired: Oct 12 2018 12:53 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	26.91	ppb	3.14	25	107.64	
11 B	28.38	ppb	3.06	25	113.52	Fail
23 Na	4,934.	ppb	0.81	5,000	98.68	
25 Mg	4,914.	ppb	1.59	5,000	98.28	
27 Al	491.8	ppb	1.65	500	98.36	
28 Si	561.6	ppb	4.99	500	112.32	
29 Si	386.1	ppb	19.49	500	77.22	Fail
39 K	5,022.	ppb	0.82	5,000	100.44	
43 Ca	4,977.	ppb	0.21	5,000	99.54	
44 Ca	5,134.	ppb	0.84	5,000	102.68	
51 V	25.85	ppb	5.15	25	103.4	
52 Cr	25.76	ppb	4.04	25	103.04	
53 Cr	21.6	ppb	9.82	25	86.4	
55 Mn	26.16	ppb	4.23	25	104.64	
56 Fe	4,994.	ppb	3.68	5,000	99.88	
57 Fe	5,069.	ppb	4.32	5,000	101.38	
59 Co	25.31	ppb	4.88	25	101.24	
60 Ni	23.74	ppb	5.83	25	94.96	
63 Cu	23.87	ppb	3.32	25	95.48	
65 Cu	23.52	ppb	3.41	25	94.08	
66 Zn	20.85	ppb	4.09	25	83.4	Fail
68 Zn	24.	ppb	3.27	25	96	
75 As	24.46	ppb	1.88	25	97.84	
82 Se	24.53	ppb	1.61	25	98.12	
88 Sr	26.45	ppb	2.24	25	105.8	
98 Mo	24.28	ppb	3.36	25	97.12	
107 Ag	24.3	ppb	3.15	25	97.2	
109 Ag	24.25	ppb	2.75	25	97	
111 Cd	24.24	ppb	4.10	25	96.96	
114 Cd	23.92	ppb	3.14	25	95.68	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.61	ppb	0.76	25	102.44	
120 Sn	25.15	ppb	1.41	25	100.6	
121 Sb	25.78	ppb	0.92	25	103.12	
123 Sb	25.7	ppb	0.79	25	102.8	
135 Ba	25.7	ppb	3.37	25	102.8	
137 Ba	25.9	ppb	0.62	25	103.6	
182 W	24.51	ppb	1.14	25	98.04	
203 Tl	24.43	ppb	2.66	25	97.72	
205 Tl	24.18	ppb	0.69	25	96.72	
208 Pb	24.24	ppb	1.37	25	96.96	
232 Th	26.17	ppb	1.66	25	104.68	
238 U	27.13	ppb	1.54	25	108.52	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8561339.00	4.09	8477054.00	101.0	80 - 120.4	
45 Sc	3248163.80	1.98	2909174.30	111.7	80 - 120.4	
89 Y	3353331.50	1.18	3117971.30	107.5	80 - 120.4	
159 Tb	2814197.80	1.05	2784003.50	101.1	80 - 120.4	
209 Bi	1477149.60	0.96	1452804.80	101.7	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

3 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000138

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\100_CCB.D\100_CCB.D#
Date Acquired: Oct 12 2018 12:57 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0033	ppb	17.44	1.00	
11 B	1.745	ppb	8.28	1.00	
23 Na	30.38	ppb	3.35	1.00	
25 Mg	0.0297	ppb	35.78	1.00	
27 Al	0.3602	ppb	9.11	1.00	
28 Si	75.34	ppb	41.31	1.00	
29 Si	-63.38	ppb	114.47	1.00	
39 K	5.8	ppb	21.79	1.00	
43 Ca	-5.806	ppb	70.69	1.00	
44 Ca	-9.684	ppb	20.79	1.00	
51 V	-0.1217	ppb	23.21	1.00	
52 Cr	-0.1534	ppb	27.21	1.00	
53 Cr	-7.456	ppb	9.40	1.00	
55 Mn	0.0052	ppb	67.90	1.00	
56 Fe	8.595	ppb	27.47	1.00	
57 Fe	8.725	ppb	25.22	1.00	
59 Co	0.0035	ppb	24.34	1.00	
60 Ni	0.2607	ppb	6.32	1.00	
63 Cu	0.2814	ppb	9.44	1.00	
65 Cu	0.1412	ppb	6.09	1.00	
66 Zn	-0.0234	ppb	172.39	1.00	
68 Zn	3.296	ppb	7.43	1.00	
75 As	-0.0754	ppb	140.22	1.00	
82 Se	-0.2606	ppb	198.47	1.00	
88 Sr	0.0014	ppb	206.05	1.00	
98 Mo	0.0109	ppb	17.90	1.00	
107 Ag	0.003	ppb	287.67	1.00	
109 Ag	0.0011	ppb	404.01	1.00	
111 Cd	0.1101	ppb	89.80	1.00	
114 Cd	0.0037	ppb	356.86	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0283	ppb	43.10	1.00	
120 Sn	0.0313	ppb	9.13	1.00	
121 Sb	0.013	ppb	47.34	1.00	
123 Sb	0.0067	ppb	111.39	1.00	
135 Ba	-0.0107	ppb	88.69	1.00	
137 Ba	0.0052	ppb	91.90	1.00	
182 W	0.0284	ppb	7.43	1.00	
203 Tl	0.0038	ppb	60.16	1.00	
205 Tl	0.0042	ppb	45.74	1.00	
208 Pb	0.0057	ppb	62.80	1.00	
232 Th	0.1939	ppb	17.46	1.00	
238 U	0.0019	ppb	65.67	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9016447.00	5.66	8477054.00	106.4	79.5 - 120	
45 Sc	3254108.50	2.18	2909174.30	111.9	79.5 - 120	
89 Y	3349186.00	1.50	3117971.30	107.4	79.5 - 120	
159 Tb	2803222.80	2.21	2784003.50	100.7	79.5 - 120	
209 Bi	1499594.60	0.47	1452804.80	103.2	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000139

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\101SMPL.D\101SMPL.D#
Date Acquired: Oct 12 2018 01:01 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9873-004
Misc Info:
Vial Number: 3101
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.1238	0.1238	ppb	2.44	100.	
11 B	14.45	14.45	ppb	1.80	1000.	
23 Na	2,268.	2,268.	ppb	1.19	200000.	
25 Mg	630.9	630.9	ppb	0.41	200000.	
27 Al	1,210.	1,210.	ppb	0.78	200000.	
28 Si	3,919.	3,919.	ppb	0.29	#VALUE!	
29 Si	3,494.	3,494.	ppb	0.61	10000.	
39 K	686.2	686.2	ppb	1.02	200000.	
43 Ca	1,392.	1,392.	ppb	1.43	#VALUE!	
44 Ca	1,489.	1,489.	ppb	1.18	200000.	
51 V	1.282	1.282	ppb	15.28	1000.	
52 Cr	2.705	2.705	ppb	5.61	2000.	
53 Cr	-3.169	-3.169	ppb	13.60	#VALUE!	
55 Mn	36.21	36.21	ppb	4.35	2000.	
56 Fe	1,434.	1,434.	ppb	4.09	#VALUE!	
57 Fe	1,571.	1,571.	ppb	5.63	100000.	
59 Co	2.786	2.786	ppb	5.26	1000.	
60 Ni	3.192	3.192	ppb	4.36	1000.	
63 Cu	7.979	7.979	ppb	3.76	#VALUE!	
65 Cu	7.723	7.723	ppb	3.71	2000.	
66 Zn	10.18	10.18	ppb	5.35	2000.	
68 Zn	13.09	13.09	ppb	3.89	#VALUE!	
75 As	1.862	1.862	ppb	6.54	1000.	
82 Se	0.4408	0.4408	ppb	117.72	1000.	
88 Sr	13.28	13.28	ppb	2.18	2000.	
98 Mo	0.1759	0.1759	ppb	8.93	1000.	
107 Ag	0.2332	0.2332	ppb	5.14	100.	
109 Ag	0.235	0.235	ppb	12.29	#VALUE!	
111 Cd	0.7199	0.7199	ppb	16.50	#VALUE!	
114 Cd	0.6836	0.6836	ppb	4.16	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0662	0.0662	ppb	13.03	1000.	
120 Sn	0.066	0.066	ppb	22.34	#VALUE!	
121 Sb	0.1626	0.1626	ppb	3.53	#VALUE!	
123 Sb	0.161	0.161	ppb	8.77	1000.	
135 Ba	9.713	9.713	ppb	4.94	2000.	
137 Ba	9.802	9.802	ppb	2.58	#VALUE!	
182 W	0.1604	0.1604	ppb	2.53	1000.	
203 Tl	0.0144	0.0144	ppb	23.90	1000.	
205 Tl	0.0115	0.0115	ppb	6.93	#VALUE!	
208 Pb	2.834	2.834	ppb	1.96	2000.	
232 Th	0.2108	0.2108	ppb	6.01	1000.	
238 U	0.2256	0.2256	ppb	3.61	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9023112.00	1.58	8477054.00	106.4	69.5 - 120	
45 Sc	3283481.50	1.81	2909174.30	112.9	69.5 - 120	
89 Y	3389397.00	1.30	3117971.30	108.7	69.5 - 120	
159 Tb	2838484.30	0.78	2784003.50	102.0	69.5 - 120	
209 Bi	1486765.80	0.64	1452804.80	102.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000140

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\102SMPL.D\102SMPL.D#
Date Acquired: Oct 12 2018 01:05 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9873-005
Misc Info:
Vial Number: 3102
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0047	0.0047	ppb	46.50	100.	
11 B	156.6	156.6	ppb	3.43	1000.	
23 Na	51,680.	51,680.	ppb	0.82	200000.	
25 Mg	5,622.	5,622.	ppb	1.34	200000.	
27 Al	31.99	31.99	ppb	1.29	200000.	
28 Si	5,476.	5,476.	ppb	1.37	#VALUE!	
29 Si	4,947.	4,947.	ppb	2.02	10000.	
39 K	10,070.	10,070.	ppb	1.17	200000.	
43 Ca	27,830.	27,830.	ppb	0.99	#VALUE!	
44 Ca	27,760.	27,760.	ppb	1.63	200000.	
51 V	-0.0018	-0.0018	ppb	7665.70	1000.	
52 Cr	1.131	1.131	ppb	8.61	2000.	
53 Cr	-4.233	-4.233	ppb	15.26	#VALUE!	
55 Mn	253.8	253.8	ppb	1.15	2000.	
56 Fe	550.3	550.3	ppb	1.18	#VALUE!	
57 Fe	825.9	825.9	ppb	4.32	100000.	
59 Co	0.6886	0.6886	ppb	5.34	1000.	
60 Ni	2.924	2.924	ppb	5.25	1000.	
63 Cu	8.666	8.666	ppb	0.95	#VALUE!	
65 Cu	7.438	7.438	ppb	2.93	2000.	
66 Zn	14.13	14.13	ppb	3.00	2000.	
68 Zn	17.38	17.38	ppb	3.74	#VALUE!	
75 As	1.888	1.888	ppb	3.27	1000.	
82 Se	0.4076	0.4076	ppb	71.05	1000.	
88 Sr	138.8	138.8	ppb	1.36	2000.	
98 Mo	1.329	1.329	ppb	2.73	1000.	
107 Ag	0.0377	0.0377	ppb	0.52	100.	
109 Ag	0.0386	0.0386	ppb	2.85	#VALUE!	
111 Cd	-0.0136	-0.0136	ppb	532.30	#VALUE!	
114 Cd	0.0207	0.0207	ppb	26.66	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.2392	0.2392	ppb	2.96	1000.	
120 Sn	0.2448	0.2448	ppb	7.93	#VALUE!	
121 Sb	0.1128	0.1128	ppb	4.89	#VALUE!	
123 Sb	0.1247	0.1247	ppb	3.68	1000.	
135 Ba	8.479	8.479	ppb	2.32	2000.	
137 Ba	8.411	8.411	ppb	1.41	#VALUE!	
182 W	0.0362	0.0362	ppb	17.27	1000.	
203 Tl	0.0068	0.0068	ppb	47.76	1000.	
205 Tl	0.0028	0.0028	ppb	58.33	#VALUE!	
208 Pb	0.3155	0.3155	ppb	3.45	2000.	
232 Th	0.1187	0.1187	ppb	7.04	1000.	
238 U	0.0438	0.0438	ppb	2.67	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8220855.00	1.91	8477054.00	97.0	69.5 - 120	
45 Sc	3245488.50	1.84	2909174.30	111.6	69.5 - 120	
89 Y	3373823.80	0.77	3117971.30	108.2	69.5 - 120	
159 Tb	2820477.30	0.81	2784003.50	101.3	69.5 - 120	
209 Bi	1436657.40	1.28	1452804.80	98.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000141

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\103SMPL.D\103SMPL.D#
Date Acquired: Oct 12 2018 01:09 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9874-001
Misc Info:
Vial Number: 3103
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0358	0.0358	ppb	19.72	100.	
11 B	9.42	9.42	ppb	5.87	1000.	
23 Na	2,110.	2,110.	ppb	0.70	200000.	
25 Mg	473.9	473.9	ppb	4.50	200000.	
27 Al	19.22	19.22	ppb	4.40	200000.	
28 Si	454.6	454.6	ppb	4.08	#VALUE!	
29 Si	253.1	253.1	ppb	22.66	10000.	
39 K	395.1	395.1	ppb	1.30	200000.	
43 Ca	2,088.	2,088.	ppb	1.97	#VALUE!	
44 Ca	2,154.	2,154.	ppb	0.86	200000.	
51 V	-0.0061	-0.0061	ppb	1654.90	1000.	
52 Cr	0.0178	0.0178	ppb	106.24	2000.	
53 Cr	-4.582	-4.582	ppb	12.33	#VALUE!	
55 Mn	4.668	4.668	ppb	1.64	2000.	
56 Fe	20.72	20.72	ppb	0.53	#VALUE!	
57 Fe	38.83	38.83	ppb	2.82	100000.	
59 Co	0.0199	0.0199	ppb	9.95	1000.	
60 Ni	0.3248	0.3248	ppb	1.14	1000.	
63 Cu	0.8144	0.8144	ppb	0.50	#VALUE!	
65 Cu	0.6316	0.6316	ppb	7.05	2000.	
66 Zn	1.139	1.139	ppb	4.62	2000.	
68 Zn	4.039	4.039	ppb	2.03	#VALUE!	
75 As	0.1777	0.1777	ppb	134.21	1000.	
82 Se	0.4085	0.4085	ppb	235.20	1000.	
88 Sr	10.79	10.79	ppb	2.04	2000.	
98 Mo	0.2432	0.2432	ppb	3.23	1000.	
107 Ag	-0.0021	-0.0021	ppb	178.96	100.	
109 Ag	-0.0017	-0.0017	ppb	501.77	#VALUE!	
111 Cd	0.0248	0.0248	ppb	241.34	#VALUE!	
114 Cd	0.0137	0.0137	ppb	135.83	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0055	0.0055	ppb	433.89	1000.	
120 Sn	0.0162	0.0162	ppb	111.21	#VALUE!	
121 Sb	0.0423	0.0423	ppb	28.54	#VALUE!	
123 Sb	0.038	0.038	ppb	19.48	1000.	
135 Ba	1.743	1.743	ppb	8.19	2000.	
137 Ba	1.719	1.719	ppb	2.35	#VALUE!	
182 W	0.0225	0.0225	ppb	36.68	1000.	
203 Tl	0.0108	0.0108	ppb	20.79	1000.	
205 Tl	0.0059	0.0059	ppb	17.10	#VALUE!	
208 Pb	0.0393	0.0393	ppb	7.59	2000.	
232 Th	0.0631	0.0631	ppb	13.83	1000.	
238 U	0.153	0.153	ppb	5.05	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8711793.00	4.87	8477054.00	102.8	69.5 - 120	
45 Sc	3303645.30	1.67	2909174.30	113.6	69.5 - 120	
89 Y	3477677.50	0.69	3117971.30	111.5	69.5 - 120	
159 Tb	2908027.30	1.15	2784003.50	104.5	69.5 - 120	
209 Bi	1544386.10	0.34	1452804.80	106.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000142

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\104SMPL.D\104SMPL.D#
Date Acquired: Oct 12 2018 01:14 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9874-001L
Misc Info:
Vial Number: 3104
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0378	0.0076	ppb	15.43	100.	
11 B	12.91	2.582	ppb	9.66	1000.	
23 Na	2,201.5	440.3	ppb	0.93	200000.	
25 Mg	467.6	93.52	ppb	0.92	200000.	
27 Al	22.655	4.531	ppb	2.45	200000.	
28 Si	756.	151.2	ppb	21.57	#VALUE!	
29 Si	-25.34	-5.068	ppb	1544.40	10000.	
39 K	415.15	83.03	ppb	2.30	200000.	
43 Ca	2,218.5	443.7	ppb	3.32	#VALUE!	
44 Ca	2,201.5	440.3	ppb	0.94	200000.	
51 V	-1.1105	-0.2221	ppb	40.10	1000.	
52 Cr	-0.3683	-0.0737	ppb	21.07	2000.	
53 Cr	-22.475	-4.495	ppb	5.68	#VALUE!	
55 Mn	4.758	0.9516	ppb	3.79	2000.	
56 Fe	30.525	6.105	ppb	30.76	#VALUE!	
57 Fe	55.3	11.06	ppb	15.16	100000.	
59 Co	0.0313	0.0063	ppb	3.99	1000.	
60 Ni	1.104	0.2208	ppb	14.64	1000.	
63 Cu	1.7905	0.3581	ppb	7.64	#VALUE!	
65 Cu	1.113	0.2226	ppb	17.77	2000.	
66 Zn	4.6125	0.9225	ppb	1.74	2000.	
68 Zn	14.42	2.884	ppb	10.33	#VALUE!	
75 As	-0.4963	-0.0993	ppb	138.53	1000.	
82 Se	-1.4235	-0.2847	ppb	214.40	1000.	
88 Sr	10.83	2.166	ppb	1.53	2000.	
98 Mo	0.2531	0.0506	ppb	33.51	1000.	
107 Ag	0.0207	0.0041	ppb	66.10	100.	
109 Ag	0.0061	0.0012	ppb	214.57	#VALUE!	
111 Cd	0.3198	0.064	ppb	84.21	#VALUE!	
114 Cd	0.0145	0.0029	ppb	229.75	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0498	0.01	ppb	159.48	1000.	
120 Sn	0.0803	0.0161	ppb	31.25	#VALUE!	
121 Sb	0.0769	0.0154	ppb	40.49	#VALUE!	
123 Sb	0.0576	0.0115	ppb	48.34	1000.	
135 Ba	1.73	0.346	ppb	8.99	2000.	
137 Ba	1.737	0.3474	ppb	17.42	#VALUE!	
182 W	0.0605	0.0121	ppb	55.33	1000.	
203 Tl	0.0287	0.0057	ppb	58.65	1000.	
205 Tl	0.0032	0.0006	ppb	415.69	#VALUE!	
208 Pb	0.0825	0.0165	ppb	50.36	2000.	
232 Th	0.1627	0.0325	ppb	21.51	1000.	
238 U	0.1724	0.0345	ppb	3.87	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9151287.00	2.60	8477054.00	108.0	69.5 - 120	
45 Sc	3294228.00	2.17	2909174.30	113.2	69.5 - 120	
89 Y	3458289.00	1.71	3117971.30	110.9	69.5 - 120	
159 Tb	2860715.30	1.79	2784003.50	102.8	69.5 - 120	
209 Bi	1506089.60	0.66	1452804.80	103.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000143

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\105SMPL.D\105SMPL.D#
Date Acquired: Oct 12 2018 01:18 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9874-001S
Misc Info:
Vial Number: 3105
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	53.15	10.63	ppb	0.56	100.	
11 B	477.95	95.59	ppb	2.60	1000.	
23 Na	10,025.	2,005.	ppb	1.49	200000.	
25 Mg	5,770.	1,154.	ppb	0.51	200000.	
27 Al	2,173.	434.6	ppb	0.67	200000.	
28 Si	1,627.5	325.5	ppb	3.59	#VALUE!	
29 Si	779.	155.8	ppb	6.95	10000.	
39 K	11,020.	2,204.	ppb	0.73	200000.	
43 Ca	5,275.	1,055.	ppb	2.67	#VALUE!	
44 Ca	5,125.	1,025.	ppb	1.48	200000.	
51 V	531.5	106.3	ppb	0.84	1000.	
52 Cr	214.9	42.98	ppb	1.49	2000.	
53 Cr	205.45	41.09	ppb	4.21	#VALUE!	
55 Mn	536.5	107.3	ppb	0.92	2000.	
56 Fe	1,133.	226.6	ppb	1.85	#VALUE!	
57 Fe	1,197.5	239.5	ppb	1.78	100000.	
59 Co	537.	107.4	ppb	1.16	1000.	
60 Ni	508.	101.6	ppb	1.85	1000.	
63 Cu	265.	53.	ppb	1.89	#VALUE!	
65 Cu	264.05	52.81	ppb	1.87	2000.	
66 Zn	440.8	88.16	ppb	2.38	2000.	
68 Zn	565.	113.	ppb	1.83	#VALUE!	
75 As	99.35	19.87	ppb	3.06	1000.	
82 Se	98.45	19.69	ppb	3.07	1000.	
88 Sr	506.	101.2	ppb	0.68	2000.	
98 Mo	93.1	18.62	ppb	2.00	1000.	
107 Ag	51.75	10.35	ppb	3.71	100.	
109 Ag	51.25	10.25	ppb	2.14	#VALUE!	
111 Cd	247.3	49.46	ppb	2.35	#VALUE!	
114 Cd	245.05	49.01	ppb	2.35	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	497.45	99.49	ppb	2.30	1000.	
120 Sn	494.15	98.83	ppb	2.53	#VALUE!	
121 Sb	104.2	20.84	ppb	1.94	#VALUE!	
123 Sb	104.45	20.89	ppb	2.44	1000.	
135 Ba	2,156.	431.2	ppb	2.49	2000.	
137 Ba	2,101.	420.2	ppb	0.41	#VALUE!	
182 W	94.25	18.85	ppb	3.09	1000.	
203 Tl	99.8	19.96	ppb	3.05	1000.	
205 Tl	97.9	19.58	ppb	3.31	#VALUE!	
208 Pb	99.2	19.84	ppb	3.00	2000.	
232 Th	92.7	18.54	ppb	0.38	1000.	
238 U	104.75	20.95	ppb	2.88	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9400397.00	1.15	8477054.00	110.9	69.5 - 120	
45 Sc	3276463.50	0.61	2909174.30	112.6	69.5 - 120	
89 Y	3355299.30	1.11	3117971.30	107.6	69.5 - 120	
159 Tb	2820174.30	0.90	2784003.50	101.3	69.5 - 120	
209 Bi	1473538.00	0.28	1452804.80	101.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000144

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\106SMPL.D\106SMPL.D#
Date Acquired: Oct 12 2018 01:22 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9874-001P
Misc Info:
Vial Number: 3106
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	51.55	10.31	ppb	1.17	100.	
11 B	465.95	93.19	ppb	3.30	1000.	
23 Na	9,840.	1,968.	ppb	2.44	200000.	
25 Mg	5,700.	1,140.	ppb	2.49	200000.	
27 Al	2,197.	439.4	ppb	2.55	200000.	
28 Si	1,590.5	318.1	ppb	7.36	#VALUE!	
29 Si	650.5	130.1	ppb	26.27	10000.	
39 K	10,685.	2,137.	ppb	2.07	200000.	
43 Ca	5,255.	1,051.	ppb	0.91	#VALUE!	
44 Ca	5,075.	1,015.	ppb	1.76	200000.	
51 V	531.	106.2	ppb	0.31	1000.	
52 Cr	212.55	42.51	ppb	2.18	2000.	
53 Cr	199.8	39.96	ppb	7.43	#VALUE!	
55 Mn	533.5	106.7	ppb	1.26	2000.	
56 Fe	1,113.5	222.7	ppb	1.34	#VALUE!	
57 Fe	1,191.5	238.3	ppb	1.34	100000.	
59 Co	531.5	106.3	ppb	2.05	1000.	
60 Ni	502.	100.4	ppb	2.24	1000.	
63 Cu	250.95	50.19	ppb	2.92	#VALUE!	
65 Cu	249.7	49.94	ppb	3.25	2000.	
66 Zn	427.1	85.42	ppb	2.56	2000.	
68 Zn	548.5	109.7	ppb	2.12	#VALUE!	
75 As	99.1	19.82	ppb	1.36	1000.	
82 Se	98.15	19.63	ppb	4.46	1000.	
88 Sr	499.4	99.88	ppb	0.52	2000.	
98 Mo	91.7	18.34	ppb	2.77	1000.	
107 Ag	50.45	10.09	ppb	2.83	100.	
109 Ag	50.75	10.15	ppb	1.85	#VALUE!	
111 Cd	244.15	48.83	ppb	2.17	#VALUE!	
114 Cd	242.5	48.5	ppb	2.10	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	487.4	97.48	ppb	2.28	1000.	
120 Sn	483.9	96.78	ppb	2.34	#VALUE!	
121 Sb	102.6	20.52	ppb	2.85	#VALUE!	
123 Sb	102.25	20.45	ppb	2.80	1000.	
135 Ba	2,114.5	422.9	ppb	2.04	2000.	
137 Ba	2,073.	414.6	ppb	0.19	#VALUE!	
182 W	92.95	18.59	ppb	1.71	1000.	
203 Tl	96.25	19.25	ppb	4.44	1000.	
205 Tl	96.05	19.21	ppb	3.43	#VALUE!	
208 Pb	96.65	19.33	ppb	2.64	2000.	
232 Th	94.3	18.86	ppb	1.57	1000.	
238 U	102.55	20.51	ppb	2.79	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9445767.00	4.24	8477054.00	111.4	69.5 - 120	
45 Sc	3274035.30	1.06	2909174.30	112.5	69.5 - 120	
89 Y	3315515.50	0.56	3117971.30	106.3	69.5 - 120	
159 Tb	2809511.30	0.67	2784003.50	100.9	69.5 - 120	
209 Bi	1469786.50	1.39	1452804.80	101.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000145

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\107SMPL.D\107SMPL.D#
Date Acquired: Oct 12 2018 01:26 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9884-001
Misc Info:
Vial Number: 3107
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.2666	0.2666	ppb	1.51	100.	
11 B	4.624	4.624	ppb	3.67	1000.	
23 Na	2,761.	2,761.	ppb	1.20	200000.	
25 Mg	403.8	403.8	ppb	1.60	200000.	
27 Al	819.6	819.6	ppb	1.78	200000.	
28 Si	4,868.	4,868.	ppb	0.98	#VALUE!	
29 Si	4,343.	4,343.	ppb	0.54	10000.	
39 K	262.2	262.2	ppb	1.14	200000.	
43 Ca	2,154.	2,154.	ppb	1.03	#VALUE!	
44 Ca	2,260.	2,260.	ppb	0.65	200000.	
51 V	1.881	1.881	ppb	9.14	1000.	
52 Cr	0.9633	0.9633	ppb	5.20	2000.	
53 Cr	-4.957	-4.957	ppb	4.55	#VALUE!	
55 Mn	49.68	49.68	ppb	2.76	2000.	
56 Fe	957.3	957.3	ppb	3.25	#VALUE!	
57 Fe	1,036.	1,036.	ppb	4.55	100000.	
59 Co	0.8018	0.8018	ppb	3.82	1000.	
60 Ni	1.273	1.273	ppb	2.31	1000.	
63 Cu	1.416	1.416	ppb	0.70	#VALUE!	
65 Cu	1.187	1.187	ppb	5.26	2000.	
66 Zn	28.12	28.12	ppb	3.30	2000.	
68 Zn	26.76	26.76	ppb	3.30	#VALUE!	
75 As	0.5619	0.5619	ppb	23.05	1000.	
82 Se	0.4785	0.4785	ppb	43.89	1000.	
88 Sr	17.24	17.24	ppb	1.52	2000.	
98 Mo	0.0852	0.0852	ppb	3.59	1000.	
107 Ag	0.0055	0.0055	ppb	110.78	100.	
109 Ag	0.0083	0.0083	ppb	52.45	#VALUE!	
111 Cd	0.1431	0.1431	ppb	40.25	#VALUE!	
114 Cd	0.0727	0.0727	ppb	21.22	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.2384	0.2384	ppb	3.82	1000.	
120 Sn	0.2195	0.2195	ppb	6.12	#VALUE!	
121 Sb	0.0791	0.0791	ppb	13.51	#VALUE!	
123 Sb	0.0815	0.0815	ppb	18.85	1000.	
135 Ba	12.12	12.12	ppb	0.38	2000.	
137 Ba	12.51	12.51	ppb	1.55	#VALUE!	
182 W	0.0626	0.0626	ppb	27.39	1000.	
203 Tl	0.0181	0.0181	ppb	27.67	1000.	
205 Tl	0.0153	0.0153	ppb	11.06	#VALUE!	
208 Pb	2.514	2.514	ppb	1.90	2000.	
232 Th	0.6792	0.6792	ppb	27.50	1000.	
238 U	0.1497	0.1497	ppb	6.11	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9600470.00	4.02	8477054.00	113.3	69.5 - 120	
45 Sc	3283780.30	0.87	2909174.30	112.9	69.5 - 120	
89 Y	3368414.00	1.28	3117971.30	108.0	69.5 - 120	
159 Tb	2804056.80	0.46	2784003.50	100.7	69.5 - 120	
209 Bi	1476081.00	0.95	1452804.80	101.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000146

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\108SMPL.D\108SMPL.D#
Date Acquired: Oct 12 2018 01:30 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9884-002
Misc Info:
Vial Number: 3108
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0504	0.0504	ppb	6.17	100.	
11 B	24.52	24.52	ppb	4.56	1000.	
23 Na	16,140.	16,140.	ppb	0.27	200000.	
25 Mg	3,057.	3,057.	ppb	0.79	200000.	
27 Al	72.4	72.4	ppb	0.99	200000.	
28 Si	5,002.	5,002.	ppb	1.62	#VALUE!	
29 Si	4,488.	4,488.	ppb	1.90	10000.	
39 K	4,422.	4,422.	ppb	1.23	200000.	
43 Ca	10,500.	10,500.	ppb	0.12	#VALUE!	
44 Ca	10,580.	10,580.	ppb	0.88	200000.	
51 V	0.2286	0.2286	ppb	27.37	1000.	
52 Cr	0.2603	0.2603	ppb	21.29	2000.	
53 Cr	-6.236	-6.236	ppb	19.21	#VALUE!	
55 Mn	969.7	969.7	ppb	1.60	2000.	
56 Fe	4,956.	4,956.	ppb	1.75	#VALUE!	
57 Fe	5,087.	5,087.	ppb	1.06	100000.	
59 Co	0.7424	0.7424	ppb	2.68	1000.	
60 Ni	1.17	1.17	ppb	5.79	1000.	
63 Cu	1.463	1.463	ppb	2.21	#VALUE!	
65 Cu	1.018	1.018	ppb	1.34	2000.	
66 Zn	54.07	54.07	ppb	1.48	2000.	
68 Zn	51.83	51.83	ppb	0.09	#VALUE!	
75 As	4.778	4.778	ppb	2.82	1000.	
82 Se	-0.211	-0.211	ppb	219.76	1000.	
88 Sr	59.29	59.29	ppb	0.43	2000.	
98 Mo	0.172	0.172	ppb	9.83	1000.	
107 Ag	0.0084	0.0084	ppb	50.95	100.	
109 Ag	0.0044	0.0044	ppb	86.37	#VALUE!	
111 Cd	0.0734	0.0734	ppb	154.60	#VALUE!	
114 Cd	0.0146	0.0146	ppb	80.54	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0829	0.0829	ppb	3.41	1000.	
120 Sn	0.0596	0.0596	ppb	25.83	#VALUE!	
121 Sb	0.0288	0.0288	ppb	27.04	#VALUE!	
123 Sb	0.0317	0.0317	ppb	20.49	1000.	
135 Ba	24.86	24.86	ppb	1.28	2000.	
137 Ba	25.25	25.25	ppb	0.80	#VALUE!	
182 W	0.0371	0.0371	ppb	5.97	1000.	
203 Tl	0.0114	0.0114	ppb	41.16	1000.	
205 Tl	0.0092	0.0092	ppb	33.48	#VALUE!	
208 Pb	0.1844	0.1844	ppb	11.11	2000.	
232 Th	0.2479	0.2479	ppb	1.99	1000.	
238 U	0.0598	0.0598	ppb	11.69	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9159889.00	3.83	8477054.00	108.1	69.5 - 120	
45 Sc	3230318.80	1.37	2909174.30	111.0	69.5 - 120	
89 Y	3313751.00	0.51	3117971.30	106.3	69.5 - 120	
159 Tb	2788969.80	0.26	2784003.50	100.2	69.5 - 120	
209 Bi	1441763.90	1.47	1452804.80	99.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000147

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\109SMPL.D\109SMPL.D#
Date Acquired: Oct 12 2018 01:34 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9884-003
Misc Info:
Vial Number: 3109
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0837	0.0837	ppb	7.90	100.	
11 B	291.1	291.1	ppb	5.92	1000.	
23 Na	46,360.	46,360.	ppb	1.06	200000.	
25 Mg	40,160.	40,160.	ppb	2.53	200000.	
27 Al	130.3	130.3	ppb	2.32	200000.	
28 Si	6,497.	6,497.	ppb	1.68	#VALUE!	
29 Si	5,930.	5,930.	ppb	1.35	10000.	
39 K	122,500.	122,500.	ppb	0.11	200000.	
43 Ca	76,400.	76,400.	ppb	0.77	#VALUE!	
44 Ca	78,430.	78,430.	ppb	0.49	200000.	
51 V	3.556	3.556	ppb	2.60	1000.	
52 Cr	2.479	2.479	ppb	7.64	2000.	
53 Cr	-6.794	-6.794	ppb	25.86	#VALUE!	
55 Mn	5,298.	5,298.	ppb	2.94	2000.	>LDR
56 Fe	23,900.	23,900.	ppb	2.57	#VALUE!	
57 Fe	23,830.	23,830.	ppb	3.77	100000.	
59 Co	9.676	9.676	ppb	4.53	1000.	
60 Ni	14.43	14.43	ppb	5.06	1000.	
63 Cu	9.153	9.153	ppb	3.14	#VALUE!	
65 Cu	8.582	8.582	ppb	3.33	2000.	
66 Zn	12.93	12.93	ppb	3.30	2000.	
68 Zn	23.37	23.37	ppb	1.74	#VALUE!	
75 As	7.168	7.168	ppb	1.71	1000.	
82 Se	3.137	3.137	ppb	16.74	1000.	
88 Sr	342.2	342.2	ppb	0.18	2000.	
98 Mo	6.88	6.88	ppb	1.91	1000.	
107 Ag	0.0775	0.0775	ppb	5.87	100.	
109 Ag	0.0987	0.0987	ppb	12.08	#VALUE!	
111 Cd	0.2417	0.2417	ppb	34.42	#VALUE!	
114 Cd	0.0047	0.0047	ppb	320.03	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.1444	0.1444	ppb	13.11	1000.	
120 Sn	0.142	0.142	ppb	4.89	#VALUE!	
121 Sb	0.1899	0.1899	ppb	5.95	#VALUE!	
123 Sb	0.193	0.193	ppb	8.81	1000.	
135 Ba	185.5	185.5	ppb	0.56	2000.	
137 Ba	185.7	185.7	ppb	0.78	#VALUE!	
182 W	0.2591	0.2591	ppb	5.31	1000.	
203 Tl	0.0375	0.0375	ppb	36.49	1000.	
205 Tl	0.0411	0.0411	ppb	7.47	#VALUE!	
208 Pb	0.6287	0.6287	ppb	1.99	2000.	
232 Th	0.5176	0.5176	ppb	13.57	1000.	
238 U	6.629	6.629	ppb	0.89	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8416141.00	3.89	8477054.00	99.3	69.5 - 120	
45 Sc	3169281.30	0.58	2909174.30	108.9	69.5 - 120	
89 Y	3226492.00	2.30	3117971.30	103.5	69.5 - 120	
159 Tb	2674054.80	0.61	2784003.50	96.1	69.5 - 120	
209 Bi	1309239.80	2.28	1452804.80	90.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000148

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\110SMPL.D\110SMPL.D#
Date Acquired: Oct 12 2018 01:38 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9884-004
Misc Info:
Vial Number: 3110
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0739	0.0739	ppb	6.74	100.	
11 B	147.9	147.9	ppb	2.27	1000.	
23 Na	29,930.	29,930.	ppb	0.96	200000.	
25 Mg	31,490.	31,490.	ppb	0.60	200000.	
27 Al	63.9	63.9	ppb	1.01	200000.	
28 Si	5,956.	5,956.	ppb	0.27	#VALUE!	
29 Si	5,340.	5,340.	ppb	0.41	10000.	
39 K	57,420.	57,420.	ppb	1.04	200000.	
43 Ca	68,590.	68,590.	ppb	0.86	#VALUE!	
44 Ca	69,570.	69,570.	ppb	0.29	200000.	
51 V	0.8586	0.8586	ppb	21.02	1000.	
52 Cr	0.6948	0.6948	ppb	6.96	2000.	
53 Cr	-8.951	-8.951	ppb	10.96	#VALUE!	
55 Mn	7,408.	7,408.	ppb	3.39	2000.	>LDR
56 Fe	14,860.	14,860.	ppb	3.55	#VALUE!	
57 Fe	14,940.	14,940.	ppb	2.82	100000.	
59 Co	10.27	10.27	ppb	3.84	1000.	
60 Ni	6.896	6.896	ppb	6.27	1000.	
63 Cu	3.979	3.979	ppb	4.86	#VALUE!	
65 Cu	3.61	3.61	ppb	2.45	2000.	
66 Zn	9.65	9.65	ppb	1.13	2000.	
68 Zn	17.84	17.84	ppb	2.24	#VALUE!	
75 As	2.868	2.868	ppb	9.33	1000.	
82 Se	2.183	2.183	ppb	55.52	1000.	
88 Sr	402.7	402.7	ppb	0.60	2000.	
98 Mo	1.049	1.049	ppb	2.65	1000.	
107 Ag	0.0244	0.0244	ppb	52.26	100.	
109 Ag	0.0213	0.0213	ppb	23.67	#VALUE!	
111 Cd	0.3215	0.3215	ppb	32.54	#VALUE!	
114 Cd	0.2461	0.2461	ppb	4.89	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0635	0.0635	ppb	5.62	1000.	
120 Sn	0.0571	0.0571	ppb	17.11	#VALUE!	
121 Sb	0.0749	0.0749	ppb	13.95	#VALUE!	
123 Sb	0.0945	0.0945	ppb	4.76	1000.	
135 Ba	148.7	148.7	ppb	1.49	2000.	
137 Ba	150.5	150.5	ppb	1.12	#VALUE!	
182 W	0.0665	0.0665	ppb	10.15	1000.	
203 Tl	0.2215	0.2215	ppb	8.89	1000.	
205 Tl	0.236	0.236	ppb	3.12	#VALUE!	
208 Pb	0.1373	0.1373	ppb	6.61	2000.	
232 Th	0.2902	0.2902	ppb	2.76	1000.	
238 U	3.198	3.198	ppb	0.92	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	8740695.00	2.18	8477054.00	103.1	69.5 - 120	
45 Sc	3256157.80	0.89	2909174.30	111.9	69.5 - 120	
89 Y	3313796.00	1.43	3117971.30	106.3	69.5 - 120	
159 Tb	2738347.00	0.09	2784003.50	98.4	69.5 - 120	
209 Bi	1347689.60	2.48	1452804.80	92.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000149

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\111_CCV.D\111_CCV.D#
Date Acquired: Oct 12 2018 01:43 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.07	ppb	1.61	25	100.28	
11 B	25.32	ppb	3.26	25	101.28	
23 Na	4,993.	ppb	0.51	5,000	99.86	
25 Mg	4,928.	ppb	0.68	5,000	98.56	
27 Al	503.	ppb	0.68	500	100.6	
28 Si	582.4	ppb	6.67	500	116.48	
29 Si	400.9	ppb	26.79	500	80.18	Fail
39 K	5,099.	ppb	0.81	5,000	101.98	
43 Ca	4,862.	ppb	1.39	5,000	97.24	
44 Ca	5,137.	ppb	1.22	5,000	102.74	
51 V	26.21	ppb	2.87	25	104.84	
52 Cr	26.	ppb	2.25	25	104	
53 Cr	19.88	ppb	9.01	25	79.52	
55 Mn	26.45	ppb	2.64	25	105.8	
56 Fe	4,995.	ppb	1.59	5,000	99.9	
57 Fe	5,090.	ppb	1.70	5,000	101.8	
59 Co	25.51	ppb	3.50	25	102.04	
60 Ni	23.76	ppb	3.70	25	95.04	
63 Cu	23.74	ppb	3.39	25	94.96	
65 Cu	23.36	ppb	1.79	25	93.44	
66 Zn	20.08	ppb	1.55	25	80.32	Fail
68 Zn	19.15	ppb	3.44	25	76.6	
75 As	23.8	ppb	1.76	25	95.2	
82 Se	24.42	ppb	1.76	25	97.68	
88 Sr	26.31	ppb	1.27	25	105.24	
98 Mo	24.36	ppb	2.20	25	97.44	
107 Ag	24.18	ppb	1.43	25	96.72	
109 Ag	24.07	ppb	2.62	25	96.28	
111 Cd	24.17	ppb	2.10	25	96.68	
114 Cd	24.	ppb	2.32	25	96	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.43	ppb	0.93	25	101.72	
120 Sn	25.39	ppb	1.65	25	101.56	
121 Sb	25.75	ppb	1.47	25	103	
123 Sb	25.81	ppb	1.55	25	103.24	
135 Ba	26.04	ppb	1.66	25	104.16	
137 Ba	25.91	ppb	2.19	25	103.64	
182 W	24.64	ppb	1.91	25	98.56	
203 Tl	24.58	ppb	1.17	25	98.32	
205 Tl	24.29	ppb	0.77	25	97.16	
208 Pb	24.12	ppb	2.01	25	96.48	
232 Th	26.36	ppb	1.52	25	105.44	
238 U	26.93	ppb	1.36	25	107.72	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9265861.00	3.89	8477054.00	109.3	80 - 120.4	
45 Sc	3242675.80	2.62	2909174.30	111.5	80 - 120.4	
89 Y	3326110.00	1.01	3117971.30	106.7	80 - 120.4	
159 Tb	2768181.00	1.58	2784003.50	99.4	80 - 120.4	
209 Bi	1449484.50	0.75	1452804.80	99.8	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000150

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\112_CCB.D\112_CCB.D#
Date Acquired: Oct 12 2018 01:47 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0015	ppb	109.27	1.00	
11 B	0.7597	ppb	17.97	1.00	
23 Na	11.89	ppb	7.41	1.00	
25 Mg	0.0526	ppb	18.06	1.00	
27 Al	-0.0231	ppb	155.39	1.00	
28 Si	74.83	ppb	39.57	1.00	
29 Si	-68.33	ppb	101.29	1.00	
39 K	11.01	ppb	15.19	1.00	
43 Ca	-1.905	ppb	158.74	1.00	
44 Ca	-11.91	ppb	21.84	1.00	
51 V	-0.1569	ppb	77.06	1.00	
52 Cr	-0.1711	ppb	24.57	1.00	
53 Cr	-8.538	ppb	4.11	1.00	
55 Mn	0.1042	ppb	5.82	1.00	
56 Fe	7.104	ppb	23.13	1.00	
57 Fe	11.45	ppb	22.94	1.00	
59 Co	0.0037	ppb	99.56	1.00	
60 Ni	0.1329	ppb	15.83	1.00	
63 Cu	0.1769	ppb	10.03	1.00	
65 Cu	0.0813	ppb	33.02	1.00	
66 Zn	0.0609	ppb	43.14	1.00	
68 Zn	-1.728	ppb	25.50	1.00	
75 As	-0.0356	ppb	375.00	1.00	
82 Se	0.0635	ppb	398.90	1.00	
88 Sr	0.0026	ppb	169.12	1.00	
98 Mo	0.0093	ppb	39.73	1.00	
107 Ag	-0.0006	ppb	798.48	1.00	
109 Ag	0.0037	ppb	120.24	1.00	
111 Cd	0.1072	ppb	123.60	1.00	
114 Cd	0.0046	ppb	121.27	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0374	ppb	35.29	1.00	
120 Sn	0.0232	ppb	94.70	1.00	
121 Sb	0.0082	ppb	58.36	1.00	
123 Sb	0.008	ppb	53.83	1.00	
135 Ba	0.0065	ppb	201.77	1.00	
137 Ba	-0.0033	ppb	202.97	1.00	
182 W	0.035	ppb	21.31	1.00	
203 Tl	0.004	ppb	86.25	1.00	
205 Tl	0.0037	ppb	53.61	1.00	
208 Pb	0.005	ppb	194.56	1.00	
232 Th	0.1509	ppb	11.23	1.00	
238 U	0.0004	ppb	256.07	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9741359.00	4.90	8477054.00	114.9	79.5 - 120	
45 Sc	3214146.30	2.62	2909174.30	110.5	79.5 - 120	
89 Y	3261053.30	1.05	3117971.30	104.6	79.5 - 120	
159 Tb	2747519.30	1.27	2784003.50	98.7	79.5 - 120	
209 Bi	1463661.80	0.65	1452804.80	100.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000151

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\113SMPL.D\113SMPL.D#
Date Acquired: Oct 12 2018 01:51 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: PBWLJ11IMW1
Misc Info:
Vial Number: 3111
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.008	0.0016	ppb	66.92	100.	
11 B	11.555	2.311	ppb	11.45	1000.	
23 Na	116.55	23.31	ppb	2.75	200000.	
25 Mg	6.935	1.387	ppb	9.63	200000.	
27 Al	7.345	1.469	ppb	1.62	200000.	
28 Si	441.7	88.34	ppb	29.87	#VALUE!	
29 Si	-372.55	-74.51	ppb	120.49	10000.	
39 K	59.35	11.87	ppb	19.34	200000.	
43 Ca	6.35	1.27	ppb	213.46	#VALUE!	
44 Ca	-36.345	-7.269	ppb	10.15	200000.	
51 V	-0.6245	-0.1249	ppb	69.54	1000.	
52 Cr	1.342	0.2684	ppb	10.97	2000.	
53 Cr	68.15	13.63	ppb	0.92	#VALUE!	
55 Mn	2.2675	0.4535	ppb	5.62	2000.	
56 Fe	43.62	8.724	ppb	13.47	#VALUE!	
57 Fe	60.35	12.07	ppb	23.48	100000.	
59 Co	0.0142	0.0028	ppb	123.61	1000.	
60 Ni	1.0425	0.2085	ppb	10.38	1000.	
63 Cu	6.99	1.398	ppb	2.58	#VALUE!	
65 Cu	6.05	1.21	ppb	3.60	2000.	
66 Zn	0.7815	0.1563	ppb	29.30	2000.	
68 Zn	-12.715	-2.543	ppb	9.76	#VALUE!	
75 As	-0.756	-0.1512	ppb	173.21	1000.	
82 Se	-0.578	-0.1156	ppb	599.57	1000.	
88 Sr	0.0713	0.0143	ppb	28.17	2000.	
98 Mo	0.0281	0.0056	ppb	56.32	1000.	
107 Ag	0.0128	0.0026	ppb	187.88	100.	
109 Ag	0.0092	0.0018	ppb	195.05	#VALUE!	
111 Cd	0.2788	0.0558	ppb	83.05	#VALUE!	
114 Cd	0.0243	0.0049	ppb	218.25	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.436	0.0872	ppb	12.43	1000.	
120 Sn	0.4689	0.0938	ppb	5.10	#VALUE!	
121 Sb	0.0564	0.0113	ppb	16.76	#VALUE!	
123 Sb	0.088	0.0176	ppb	22.30	1000.	
135 Ba	0.035	0.007	ppb	94.13	2000.	
137 Ba	0.0311	0.0062	ppb	78.62	#VALUE!	
182 W	0.1274	0.0255	ppb	48.14	1000.	
203 Tl	0.0157	0.0031	ppb	76.70	1000.	
205 Tl	0.0002	0.	ppb	2201.00	#VALUE!	
208 Pb	0.0956	0.0191	ppb	54.08	2000.	
232 Th	1.1265	0.2253	ppb	25.90	1000.	
238 U	0.0049	0.001	ppb	83.39	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9530611.00	5.25	8477054.00	112.4	69.5 - 120	
45 Sc	3164930.80	2.81	2909174.30	108.8	69.5 - 120	
89 Y	3227419.80	1.97	3117971.30	103.5	69.5 - 120	
159 Tb	2709390.80	1.73	2784003.50	97.3	69.5 - 120	
209 Bi	1437837.10	0.91	1452804.80	99.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000152

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\114SMPL.D\114SMPL.D#
Date Acquired: Oct 12 2018 01:55 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: LCSWLJ11IMW1
Misc Info:
Vial Number: 3112
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	47.405	9.481	ppb	6.00	100.	
11 B	457.8	91.56	ppb	4.51	1000.	
23 Na	7,780.	1,556.	ppb	1.77	200000.	
25 Mg	5,295.	1,059.	ppb	2.17	200000.	
27 Al	2,156.	431.2	ppb	1.04	200000.	
28 Si	1,347.	269.4	ppb	9.96	#VALUE!	
29 Si	442.5	88.5	ppb	71.03	10000.	
39 K	10,450.	2,090.	ppb	0.70	200000.	
43 Ca	3,284.	656.8	ppb	5.05	#VALUE!	
44 Ca	2,910.	582.	ppb	1.06	200000.	
51 V	527.5	105.5	ppb	1.27	1000.	
52 Cr	215.6	43.12	ppb	3.11	2000.	
53 Cr	305.7	61.14	ppb	5.71	#VALUE!	
55 Mn	531.	106.2	ppb	1.18	2000.	
56 Fe	1,109.5	221.9	ppb	1.40	#VALUE!	
57 Fe	1,179.	235.8	ppb	6.25	100000.	
59 Co	528.	105.6	ppb	2.97	1000.	
60 Ni	498.35	99.67	ppb	5.41	1000.	
63 Cu	252.35	50.47	ppb	3.68	#VALUE!	
65 Cu	248.1	49.62	ppb	2.59	2000.	
66 Zn	413.35	82.67	ppb	2.39	2000.	
68 Zn	514.	102.8	ppb	2.15	#VALUE!	
75 As	94.8	18.96	ppb	1.88	1000.	
82 Se	90.45	18.09	ppb	5.74	1000.	
88 Sr	518.5	103.7	ppb	0.53	2000.	
98 Mo	96.9	19.38	ppb	3.62	1000.	
107 Ag	50.7	10.14	ppb	1.96	100.	
109 Ag	50.6	10.12	ppb	2.96	#VALUE!	
111 Cd	236.95	47.39	ppb	2.79	#VALUE!	
114 Cd	235.55	47.11	ppb	2.25	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	519.	103.8	ppb	1.42	1000.	
120 Sn	516.5	103.3	ppb	1.40	#VALUE!	
121 Sb	99.3	19.86	ppb	2.20	#VALUE!	
123 Sb	100.45	20.09	ppb	1.04	1000.	
135 Ba	2,139.	427.8	ppb	1.71	2000.	
137 Ba	2,099.	419.8	ppb	0.26	#VALUE!	
182 W	100.2	20.04	ppb	1.20	1000.	
203 Tl	98.05	19.61	ppb	1.71	1000.	
205 Tl	96.8	19.36	ppb	0.94	#VALUE!	
208 Pb	97.3	19.46	ppb	1.35	2000.	
232 Th	104.75	20.95	ppb	1.73	1000.	
238 U	110.25	22.05	ppb	1.63	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	10120593.00	5.62	8477054.00	119.4	69.5 - 120	
45 Sc	3115275.30	2.06	2909174.30	107.1	69.5 - 120	
89 Y	3168160.00	0.72	3117971.30	101.6	69.5 - 120	
159 Tb	2657810.30	1.42	2784003.50	95.5	69.5 - 120	
209 Bi	1385202.00	0.37	1452804.80	95.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000153

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\115SMPL.D\115SMPL.D#
Date Acquired: Oct 12 2018 01:59 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9848-001
Misc Info:
Vial Number: 3201
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	5.575	1.115	ppb	0.27	100.	
11 B	4,056.	811.2	ppb	0.85	1000.	
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	778,000.	155,600.	ppb	0.90	200000.	
27 Al	70,150.	14,030.	ppb	0.84	200000.	
28 Si	34,560.	6,912.	ppb	11.34	#VALUE!	
29 Si	30,185.	6,037.	ppb	9.84	10000.	
39 K	255,900.	51,180.	ppb	0.37	200000.	
43 Ca	288,150.	57,630.	ppb	0.57	#VALUE!	
44 Ca	289,650.	57,930.	ppb	0.30	200000.	
51 V	185.9	37.18	ppb	2.63	1000.	
52 Cr	1,472.5	294.5	ppb	0.76	2000.	
53 Cr	1,761.	352.2	ppb	2.28	#VALUE!	
55 Mn	2,461.	492.2	ppb	1.75	2000.	
56 Fe	335,950.	67,190.	ppb	1.85	#VALUE!	
57 Fe	327,550.	65,510.	ppb	1.67	100000.	
59 Co	62.15	12.43	ppb	2.09	1000.	
60 Ni	701.	140.2	ppb	2.41	1000.	
63 Cu	356.45	71.29	ppb	0.47	#VALUE!	
65 Cu	219.	43.8	ppb	1.57	2000.	
66 Zn	4,161.	832.2	ppb	0.47	2000.	
68 Zn	3,949.5	789.9	ppb	1.44	#VALUE!	
75 As	47.235	9.447	ppb	5.31	1000.	
82 Se	26.93	5.386	ppb	12.21	1000.	
88 Sr	4,804.5	960.9	ppb	0.59	2000.	
98 Mo	31.065	6.213	ppb	1.68	1000.	
107 Ag	11.105	2.221	ppb	2.44	100.	
109 Ag	11.165	2.233	ppb	2.35	#VALUE!	
111 Cd	3.1665	0.6333	ppb	4.61	#VALUE!	
114 Cd	3.2455	0.6491	ppb	2.60	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	19.11	3.822	ppb	1.62	1000.	
120 Sn	19.19	3.838	ppb	1.68	#VALUE!	
121 Sb	2.1385	0.4277	ppb	3.58	#VALUE!	
123 Sb	2.282	0.4564	ppb	1.19	1000.	
135 Ba	206.95	41.39	ppb	1.54	2000.	
137 Ba	208.2	41.64	ppb	0.20	#VALUE!	
182 W	3.42	0.684	ppb	3.61	1000.	
203 Tl	1.0915	0.2183	ppb	1.21	1000.	
205 Tl	0.98	0.196	ppb	6.47	#VALUE!	
208 Pb	189.3	37.86	ppb	1.10	2000.	
232 Th	37.865	7.573	ppb	4.05	1000.	
238 U	12.685	2.537	ppb	1.95	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	6701119.00	0.86	8477054.00	79.1	69.5 - 120	
45 Sc	2788747.80	0.70	2909174.30	95.9	69.5 - 120	
89 Y	2969451.30	1.39	3117971.30	95.2	69.5 - 120	
159 Tb	2230145.00	0.33	2784003.50	80.1	69.5 - 120	
209 Bi	1081423.80	0.97	1452804.80	74.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000154

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\116SMPL.D\116SMPL.D#
Date Acquired: Oct 12 2018 02:03 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9848-002
Misc Info:
Vial Number: 3202
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0267	0.0053	ppb	46.19	100.	
11 B	4,103.5	820.7	ppb	1.92	1000.	
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	755,500.	151,100.	ppb	1.34	200000.	
27 Al	30.7	6.14	ppb	3.43	200000.	
28 Si	3,248.5	649.7	ppb	1.48	#VALUE!	
29 Si	2,669.5	533.9	ppb	10.13	10000.	
39 K	258,250.	51,650.	ppb	1.29	200000.	
43 Ca	276,600.	55,320.	ppb	0.62	#VALUE!	
44 Ca	277,550.	55,510.	ppb	0.52	200000.	
51 V	0.837	0.1674	ppb	154.42	1000.	
52 Cr	1.9695	0.3939	ppb	15.74	2000.	
53 Cr	108.15	21.63	ppb	4.90	#VALUE!	
55 Mn	60.3	12.06	ppb	1.68	2000.	
56 Fe	313.8	62.76	ppb	2.87	#VALUE!	
57 Fe	2,553.	510.6	ppb	7.97	100000.	
59 Co	1.421	0.2842	ppb	3.47	1000.	
60 Ni	12.885	2.577	ppb	1.81	1000.	
63 Cu	172.05	34.41	ppb	1.62	#VALUE!	
65 Cu	2.178	0.4356	ppb	19.40	2000.	
66 Zn	22.89	4.578	ppb	4.00	2000.	
68 Zn	14.34	2.868	ppb	16.67	#VALUE!	
75 As	4.9225	0.9845	ppb	15.17	1000.	
82 Se	-1.8415	-0.3683	ppb	114.63	1000.	
88 Sr	4,873.	974.6	ppb	0.31	2000.	
98 Mo	11.07	2.214	ppb	2.83	1000.	
107 Ag	0.0193	0.0039	ppb	22.12	100.	
109 Ag	-0.0264	-0.0053	ppb	26.14	#VALUE!	
111 Cd	-0.0309	-0.0062	ppb	1258.20	#VALUE!	
114 Cd	0.106	0.0212	ppb	17.00	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.4437	0.0887	ppb	20.33	1000.	
120 Sn	0.5195	0.1039	ppb	19.01	#VALUE!	
121 Sb	0.5745	0.1149	ppb	10.00	#VALUE!	
123 Sb	0.705	0.141	ppb	5.00	1000.	
135 Ba	19.75	3.95	ppb	2.08	2000.	
137 Ba	19.67	3.934	ppb	4.25	#VALUE!	
182 W	0.2228	0.0446	ppb	6.41	1000.	
203 Tl	0.0282	0.0056	ppb	56.81	1000.	
205 Tl	0.0108	0.0022	ppb	76.20	#VALUE!	
208 Pb	0.2748	0.055	ppb	12.27	2000.	
232 Th	1.046	0.2092	ppb	18.31	1000.	
238 U	2.599	0.5198	ppb	1.76	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	6755259.00	0.71	8477054.00	79.7	69.5 - 120	
45 Sc	2910421.00	3.25	2909174.30	100.0	69.5 - 120	
89 Y	3004846.30	3.24	3117971.30	96.4	69.5 - 120	
159 Tb	2348776.50	2.69	2784003.50	84.4	69.5 - 120	
209 Bi	1136424.00	2.62	1452804.80	78.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000155

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\117SMPL.D\117SMPL.D#
Date Acquired: Oct 12 2018 02:08 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9848-003
Misc Info:
Vial Number: 3203
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.4141	0.0828	ppb	6.51	100.	
11 B	3,653.	730.6	ppb	0.59	1000.	
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	698,500.	139,700.	ppb	0.79	200000.	
27 Al	5,245.	1,049.	ppb	0.91	200000.	
28 Si	12,175.	2,435.	ppb	0.71	#VALUE!	
29 Si	11,280.	2,256.	ppb	2.47	10000.	
39 K	239,750.	47,950.	ppb	0.64	200000.	
43 Ca	276,150.	55,230.	ppb	0.36	#VALUE!	
44 Ca	276,200.	55,240.	ppb	0.09	200000.	
51 V	2,398.5	479.7	ppb	3.76	1000.	
52 Cr	65,100.	13,020.	ppb	0.26	2000.	>LDR
53 Cr	69,000.	13,800.	ppb	0.78	#VALUE!	
55 Mn	1,936.	387.2	ppb	0.43	2000.	
56 Fe	95,350.	19,070.	ppb	0.83	#VALUE!	
57 Fe	94,450.	18,890.	ppb	1.29	100000.	
59 Co	142.9	28.58	ppb	2.96	1000.	
60 Ni	15,335.	3,067.	ppb	0.98	1000.	>LDR
63 Cu	1,114.	222.8	ppb	0.78	#VALUE!	
65 Cu	963.	192.6	ppb	1.60	2000.	
66 Zn	5,315.	1,063.	ppb	0.88	2000.	
68 Zn	5,080.	1,016.	ppb	0.80	#VALUE!	
75 As	15.155	3.031	ppb	6.01	1000.	
82 Se	0.0417	0.0083	ppb	3178.10	1000.	
88 Sr	4,792.5	958.5	ppb	0.03	2000.	
98 Mo	972.	194.4	ppb	0.88	1000.	
107 Ag	3.319	0.6638	ppb	5.09	100.	
109 Ag	3.286	0.6572	ppb	0.67	#VALUE!	
111 Cd	2.42	0.484	ppb	15.16	#VALUE!	
114 Cd	1.278	0.2556	ppb	5.14	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.8	10.36	ppb	0.75	1000.	
120 Sn	51.8	10.36	ppb	0.82	#VALUE!	
121 Sb	5.255	1.051	ppb	4.20	#VALUE!	
123 Sb	5.495	1.099	ppb	1.12	1000.	
135 Ba	51.95	10.39	ppb	3.56	2000.	
137 Ba	52.65	10.53	ppb	2.65	#VALUE!	
182 W	88.35	17.67	ppb	0.82	1000.	
203 Tl	0.2524	0.0505	ppb	13.15	1000.	
205 Tl	0.2449	0.049	ppb	10.55	#VALUE!	
208 Pb	18.065	3.613	ppb	1.60	2000.	
232 Th	5.725	1.145	ppb	1.10	1000.	
238 U	3.7015	0.7403	ppb	3.76	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	6702860.50	0.69	8477054.00	79.1	69.5 - 120	
45 Sc	2781651.80	0.35	2909174.30	95.6	69.5 - 120	
89 Y	2789579.00	0.25	3117971.30	89.5	69.5 - 120	
159 Tb	2220776.00	0.27	2784003.50	79.8	69.5 - 120	
209 Bi	1061383.30	0.65	1452804.80	73.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

3 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000156

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\118SMPL.D\118SMPL.D#
Date Acquired: Oct 12 2018 02:12 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9848-004
Misc Info:
Vial Number: 3204
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0383	0.0077	ppb	8.35	100.	
11 B	3,936.	787.2	ppb	2.86	1000.	
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	691,000.	138,200.	ppb	1.14	200000.	
27 Al	212.95	42.59	ppb	3.68	200000.	
28 Si	4,487.	897.4	ppb	0.88	#VALUE!	
29 Si	3,684.	736.8	ppb	9.40	10000.	
39 K	238,650.	47,730.	ppb	1.23	200000.	
43 Ca	260,450.	52,090.	ppb	1.06	#VALUE!	
44 Ca	258,100.	51,620.	ppb	0.61	200000.	
51 V	6.37	1.274	ppb	27.22	1000.	
52 Cr	363.2	72.64	ppb	2.25	2000.	
53 Cr	523.5	104.7	ppb	3.91	#VALUE!	
55 Mn	239.3	47.86	ppb	1.46	2000.	
56 Fe	5,470.	1,094.	ppb	1.38	#VALUE!	
57 Fe	8,030.	1,606.	ppb	5.12	100000.	
59 Co	8.885	1.777	ppb	2.13	1000.	
60 Ni	1,039.5	207.9	ppb	2.72	1000.	
63 Cu	199.35	39.87	ppb	3.78	#VALUE!	
65 Cu	6.755	1.351	ppb	5.99	2000.	
66 Zn	76.3	15.26	ppb	2.07	2000.	
68 Zn	82.2	16.44	ppb	5.27	#VALUE!	
75 As	1.3545	0.2709	ppb	172.46	1000.	
82 Se	-10.265	-2.053	ppb	32.88	1000.	LOW
88 Sr	4,414.	882.8	ppb	0.49	2000.	
98 Mo	23.36	4.672	ppb	2.50	1000.	
107 Ag	0.334	0.0668	ppb	10.15	100.	
109 Ag	0.3313	0.0663	ppb	9.75	#VALUE!	
111 Cd	0.4424	0.0885	ppb	67.02	#VALUE!	
114 Cd	0.2787	0.0557	ppb	38.49	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	4.768	0.9536	ppb	5.08	1000.	
120 Sn	4.914	0.9828	ppb	2.41	#VALUE!	
121 Sb	0.827	0.1654	ppb	13.61	#VALUE!	
123 Sb	0.9005	0.1801	ppb	14.00	1000.	
135 Ba	24.09	4.818	ppb	4.28	2000.	
137 Ba	23.76	4.752	ppb	3.16	#VALUE!	
182 W	0.4981	0.0996	ppb	4.62	1000.	
203 Tl	0.0676	0.0135	ppb	18.55	1000.	
205 Tl	0.0536	0.0107	ppb	19.83	#VALUE!	
208 Pb	0.6635	0.1327	ppb	7.06	2000.	
232 Th	0.5825	0.1165	ppb	11.85	1000.	
238 U	1.563	0.3126	ppb	3.96	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	6801065.00	0.34	8477054.00	80.2	69.5 - 120	
45 Sc	2960988.00	3.66	2909174.30	101.8	69.5 - 120	
89 Y	3019934.80	3.77	3117971.30	96.9	69.5 - 120	
159 Tb	2363894.50	2.75	2784003.50	84.9	69.5 - 120	
209 Bi	1141083.80	4.17	1452804.80	78.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000157

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\119SMPL.D\119SMPL.D#
Date Acquired: Oct 12 2018 02:16 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9848-005
Misc Info:
Vial Number: 3205
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0269	0.0054	ppb	35.92	100.	
11 B	4,215.5	843.1	ppb	3.23	1000.	
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	793,000.	158,600.	ppb	1.73	200000.	
27 Al	23.99	4.798	ppb	2.38	200000.	
28 Si	2,958.5	591.7	ppb	1.63	#VALUE!	
29 Si	2,141.	428.2	ppb	6.89	10000.	
39 K	266,600.	53,320.	ppb	0.71	200000.	
43 Ca	283,450.	56,690.	ppb	0.61	#VALUE!	
44 Ca	284,700.	56,940.	ppb	0.11	200000.	
51 V	1.9745	0.3949	ppb	50.98	1000.	
52 Cr	2.947	0.5894	ppb	24.50	2000.	
53 Cr	139.85	27.97	ppb	9.90	#VALUE!	
55 Mn	3.5385	0.7077	ppb	2.21	2000.	
56 Fe	259.25	51.85	ppb	4.76	#VALUE!	
57 Fe	2,677.5	535.5	ppb	4.07	100000.	
59 Co	1.338	0.2676	ppb	3.01	1000.	
60 Ni	15.19	3.038	ppb	3.52	1000.	
63 Cu	230.55	46.11	ppb	0.94	#VALUE!	
65 Cu	4.5025	0.9005	ppb	8.68	2000.	
66 Zn	27.785	5.557	ppb	2.74	2000.	
68 Zn	48.425	9.685	ppb	4.44	#VALUE!	
75 As	1.003	0.2006	ppb	180.01	1000.	
82 Se	-18.465	-3.693	ppb	15.22	1000.	LOW
88 Sr	5,090.	1,018.	ppb	0.45	2000.	
98 Mo	8.185	1.637	ppb	3.81	1000.	
107 Ag	0.2633	0.0527	ppb	13.88	100.	
109 Ag	0.2395	0.0479	ppb	11.40	#VALUE!	
111 Cd	0.6695	0.1339	ppb	45.41	#VALUE!	
114 Cd	0.752	0.1504	ppb	12.97	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.4678	0.0936	ppb	23.38	1000.	
120 Sn	0.4621	0.0924	ppb	5.01	#VALUE!	
121 Sb	1.435	0.287	ppb	6.18	#VALUE!	
123 Sb	1.467	0.2934	ppb	4.93	1000.	
135 Ba	15.07	3.014	ppb	2.31	2000.	
137 Ba	14.85	2.97	ppb	2.32	#VALUE!	
182 W	0.1144	0.0229	ppb	31.53	1000.	
203 Tl	0.0484	0.0097	ppb	35.15	1000.	
205 Tl	0.0123	0.0025	ppb	85.34	#VALUE!	
208 Pb	0.187	0.0374	ppb	2.21	2000.	
232 Th	0.3765	0.0753	ppb	14.58	1000.	
238 U	3.015	0.603	ppb	2.63	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	6911778.00	1.93	8477054.00	81.5	69.5 - 120	
45 Sc	3083610.50	2.00	2909174.30	106.0	69.5 - 120	
89 Y	3102292.50	3.33	3117971.30	99.5	69.5 - 120	
159 Tb	2388045.80	2.10	2784003.50	85.8	69.5 - 120	
209 Bi	1131522.40	2.88	1452804.80	77.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000158

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\120SMPL.D\120SMPL.D#
Date Acquired: Oct 12 2018 02:20 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9848-006
Misc Info:
Vial Number: 3206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0237	0.0047	ppb	34.94	100.	
11 B	4,420.	884.	ppb	1.57	1000.	
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	816,000.	163,200.	ppb	0.72	200000.	
27 Al	16.16	3.232	ppb	3.93	200000.	
28 Si	3,054.5	610.9	ppb	1.45	#VALUE!	
29 Si	2,157.5	431.5	ppb	6.25	10000.	
39 K	275,900.	55,180.	ppb	0.82	200000.	
43 Ca	293,650.	58,730.	ppb	0.68	#VALUE!	
44 Ca	294,100.	58,820.	ppb	0.21	200000.	
51 V	1.1645	0.2329	ppb	102.19	1000.	
52 Cr	6.435	1.287	ppb	5.39	2000.	
53 Cr	141.4	28.28	ppb	3.86	#VALUE!	
55 Mn	2.931	0.5862	ppb	3.05	2000.	
56 Fe	242.05	48.41	ppb	8.29	#VALUE!	
57 Fe	2,597.5	519.5	ppb	5.38	100000.	
59 Co	1.388	0.2776	ppb	10.29	1000.	
60 Ni	14.89	2.978	ppb	5.68	1000.	
63 Cu	235.	47.	ppb	0.74	#VALUE!	
65 Cu	3.6765	0.7353	ppb	5.70	2000.	
66 Zn	14.71	2.942	ppb	7.85	2000.	
68 Zn	37.42	7.484	ppb	6.75	#VALUE!	
75 As	1.8	0.36	ppb	91.94	1000.	
82 Se	-13.9	-2.78	ppb	33.84	1000.	LOW
88 Sr	5,265.	1,053.	ppb	0.28	2000.	
98 Mo	8.375	1.675	ppb	1.51	1000.	
107 Ag	0.0121	0.0024	ppb	177.22	100.	
109 Ag	-0.0408	-0.0082	ppb	48.26	#VALUE!	
111 Cd	0.1025	0.0205	ppb	375.27	#VALUE!	
114 Cd	0.132	0.0264	ppb	33.02	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.5825	0.1165	ppb	11.61	1000.	
120 Sn	0.54	0.108	ppb	14.36	#VALUE!	
121 Sb	1.4265	0.2853	ppb	5.67	#VALUE!	
123 Sb	1.5855	0.3171	ppb	8.63	1000.	
135 Ba	16.185	3.237	ppb	1.54	2000.	
137 Ba	15.88	3.176	ppb	1.84	#VALUE!	
182 W	0.2604	0.0521	ppb	15.59	1000.	
203 Tl	0.0693	0.0139	ppb	4.70	1000.	
205 Tl	0.0259	0.0052	ppb	41.55	#VALUE!	
208 Pb	0.1323	0.0265	ppb	15.50	2000.	
232 Th	0.323	0.0646	ppb	9.56	1000.	
238 U	3.0765	0.6153	ppb	2.73	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	6849553.00	1.28	8477054.00	80.8	69.5 - 120	
45 Sc	3099836.00	1.49	2909174.30	106.6	69.5 - 120	
89 Y	3163959.00	2.54	3117971.30	101.5	69.5 - 120	
159 Tb	2430044.00	1.56	2784003.50	87.3	69.5 - 120	
209 Bi	1156607.40	2.59	1452804.80	79.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000159

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\121SMPL.D\121SMPL.D#
Date Acquired: Oct 12 2018 02:24 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9848-007
Misc Info:
Vial Number: 3207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.537	0.1074	ppb	0.65	100.	
11 B	4,906.	981.2	ppb	0.83	1000.	
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	867,500.	173,500.	ppb	0.99	200000.	
27 Al	4,279.	855.8	ppb	1.42	200000.	
28 Si	13,965.	2,793.	ppb	1.18	#VALUE!	
29 Si	11,590.	2,318.	ppb	3.55	10000.	
39 K	295,050.	59,010.	ppb	0.82	200000.	
43 Ca	321,450.	64,290.	ppb	0.26	#VALUE!	
44 Ca	322,200.	64,440.	ppb	0.26	200000.	
51 V	22.275	4.455	ppb	4.40	1000.	
52 Cr	47.62	9.524	ppb	2.09	2000.	
53 Cr	178.65	35.73	ppb	3.73	#VALUE!	
55 Mn	1,014.5	202.9	ppb	0.68	2000.	
56 Fe	12,055.	2,411.	ppb	0.62	#VALUE!	
57 Fe	14,250.	2,850.	ppb	0.58	100000.	
59 Co	5.22	1.044	ppb	1.18	1000.	
60 Ni	41.84	8.368	ppb	2.36	1000.	
63 Cu	291.25	58.25	ppb	3.91	#VALUE!	
65 Cu	38.13	7.626	ppb	3.65	2000.	
66 Zn	196.9	39.38	ppb	1.52	2000.	
68 Zn	204.65	40.93	ppb	3.58	#VALUE!	
75 As	9.295	1.859	ppb	3.62	1000.	
82 Se	-10.31	-2.062	ppb	15.62	1000.	LOW
88 Sr	5,765.	1,153.	ppb	0.06	2000.	
98 Mo	12.94	2.588	ppb	2.10	1000.	
107 Ag	0.3723	0.0745	ppb	4.01	100.	
109 Ag	0.3807	0.0761	ppb	12.02	#VALUE!	
111 Cd	0.3881	0.0776	ppb	62.56	#VALUE!	
114 Cd	0.6635	0.1327	ppb	6.93	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	4.0515	0.8103	ppb	2.08	1000.	
120 Sn	4.152	0.8304	ppb	5.35	#VALUE!	
121 Sb	1.281	0.2562	ppb	5.17	#VALUE!	
123 Sb	1.426	0.2852	ppb	2.69	1000.	
135 Ba	43.835	8.767	ppb	2.84	2000.	
137 Ba	44.47	8.894	ppb	0.81	#VALUE!	
182 W	1.0785	0.2157	ppb	9.98	1000.	
203 Tl	0.1691	0.0338	ppb	14.00	1000.	
205 Tl	0.1164	0.0233	ppb	14.98	#VALUE!	
208 Pb	27.155	5.431	ppb	2.15	2000.	
232 Th	3.2405	0.6481	ppb	7.52	1000.	
238 U	5.145	1.029	ppb	1.47	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	6609484.50	1.82	8477054.00	78.0	69.5 - 120	
45 Sc	3075401.80	1.56	2909174.30	105.7	69.5 - 120	
89 Y	3148500.00	1.38	3117971.30	101.0	69.5 - 120	
159 Tb	2415319.30	1.14	2784003.50	86.8	69.5 - 120	
209 Bi	1156738.10	2.02	1452804.80	79.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000160

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\122SMPL.D\122SMPL.D#
Date Acquired: Oct 12 2018 02:28 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9848-008
Misc Info:
Vial Number: 3208
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.2137	0.0427	ppb	7.65	100.	
11 B	4,929.	985.8	ppb	1.95	1000.	
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	839,000.	167,800.	ppb	0.31	200000.	
27 Al	1,571.	314.2	ppb	1.41	200000.	
28 Si	11,190.	2,238.	ppb	0.52	#VALUE!	
29 Si	9,295.	1,859.	ppb	1.49	10000.	
39 K	282,150.	56,430.	ppb	0.10	200000.	
43 Ca	309,400.	61,880.	ppb	0.47	#VALUE!	
44 Ca	310,550.	62,110.	ppb	0.40	200000.	
51 V	11.82	2.364	ppb	5.88	1000.	
52 Cr	19.325	3.865	ppb	3.35	2000.	
53 Cr	139.7	27.94	ppb	5.98	#VALUE!	
55 Mn	819.5	163.9	ppb	1.98	2000.	
56 Fe	4,574.	914.8	ppb	2.21	#VALUE!	
57 Fe	7,245.	1,449.	ppb	3.69	100000.	
59 Co	2.6955	0.5391	ppb	2.22	1000.	
60 Ni	23.175	4.635	ppb	4.50	1000.	
63 Cu	258.25	51.65	ppb	0.97	#VALUE!	
65 Cu	13.495	2.699	ppb	7.75	2000.	
66 Zn	83.3	16.66	ppb	1.21	2000.	
68 Zn	93.4	18.68	ppb	1.55	#VALUE!	
75 As	10.395	2.079	ppb	32.02	1000.	
82 Se	-8.88	-1.776	ppb	16.80	1000.	LOW
88 Sr	5,580.	1,116.	ppb	0.22	2000.	
98 Mo	4.346	0.8692	ppb	0.97	1000.	
107 Ag	0.057	0.0114	ppb	47.18	100.	
109 Ag	0.1248	0.025	ppb	20.53	#VALUE!	
111 Cd	-0.2949	-0.059	ppb	13.77	#VALUE!	
114 Cd	0.1797	0.0359	ppb	30.11	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.1005	0.4201	ppb	9.86	1000.	
120 Sn	1.9015	0.3803	ppb	6.79	#VALUE!	
121 Sb	0.7965	0.1593	ppb	9.08	#VALUE!	
123 Sb	0.9165	0.1833	ppb	14.60	1000.	
135 Ba	32.9	6.58	ppb	2.14	2000.	
137 Ba	33.865	6.773	ppb	2.11	#VALUE!	
182 W	0.9315	0.1863	ppb	7.25	1000.	
203 Tl	0.0934	0.0187	ppb	3.15	1000.	
205 Tl	0.0424	0.0085	ppb	64.57	#VALUE!	
208 Pb	10.255	2.051	ppb	4.53	2000.	
232 Th	1.346	0.2692	ppb	5.21	1000.	
238 U	3.487	0.6974	ppb	4.44	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	6622233.00	0.75	8477054.00	78.1	69.5 - 120	
45 Sc	3102474.00	0.87	2909174.30	106.6	69.5 - 120	
89 Y	3179138.30	2.10	3117971.30	102.0	69.5 - 120	
159 Tb	2448039.00	1.55	2784003.50	87.9	69.5 - 120	
209 Bi	1173530.00	2.58	1452804.80	80.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000161

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\123_CCV.D\123_CCV.D#
Date Acquired: Oct 12 2018 02:33 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	26.68	ppb	1.10	25	106.72	
11 B	30.6	ppb	0.36	25	122.4	Fail
23 Na	4,978.	ppb	0.98	5,000	99.56	
25 Mg	4,909.	ppb	0.57	5,000	98.18	
27 Al	492.5	ppb	0.28	500	98.5	
28 Si	598.4	ppb	2.29	500	119.68	
29 Si	304.2	ppb	14.20	500	60.84	Fail
39 K	5,059.	ppb	0.82	5,000	101.18	
43 Ca	4,840.	ppb	1.08	5,000	96.8	
44 Ca	5,091.	ppb	0.34	5,000	101.82	
51 V	26.23	ppb	1.57	25	104.92	
52 Cr	26.05	ppb	1.70	25	104.2	
53 Cr	21.65	ppb	8.01	25	86.6	
55 Mn	26.47	ppb	3.48	25	105.88	
56 Fe	5,076.	ppb	2.05	5,000	101.52	
57 Fe	5,134.	ppb	1.80	5,000	102.68	
59 Co	25.63	ppb	2.52	25	102.52	
60 Ni	24.08	ppb	3.52	25	96.32	
63 Cu	24.51	ppb	3.63	25	98.04	
65 Cu	23.05	ppb	3.18	25	92.2	
66 Zn	19.57	ppb	2.31	25	78.28	Fail
68 Zn	20.83	ppb	4.73	25	83.32	
75 As	23.26	ppb	2.32	25	93.04	
82 Se	23.9	ppb	4.14	25	95.6	
88 Sr	26.21	ppb	1.95	25	104.84	
98 Mo	24.2	ppb	3.10	25	96.8	
107 Ag	23.79	ppb	2.95	25	95.16	
109 Ag	23.85	ppb	2.51	25	95.4	
111 Cd	23.54	ppb	3.42	25	94.16	
114 Cd	23.47	ppb	2.86	25	93.88	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.78	ppb	1.95	25	103.12	
120 Sn	25.56	ppb	1.88	25	102.24	
121 Sb	25.94	ppb	2.54	25	103.76	
123 Sb	25.74	ppb	1.29	25	102.96	
135 Ba	25.93	ppb	1.48	25	103.72	
137 Ba	25.86	ppb	0.51	25	103.44	
182 W	24.2	ppb	1.30	25	96.8	
203 Tl	24.43	ppb	1.22	25	97.72	
205 Tl	24.04	ppb	2.61	25	96.16	
208 Pb	23.97	ppb	1.42	25	95.88	
232 Th	26.11	ppb	0.26	25	104.44	
238 U	26.7	ppb	2.10	25	106.8	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9057504.00	2.72	8477054.00	106.8	80 - 120.4	
45 Sc	3406772.80	1.16	2909174.30	117.1	80 - 120.4	
89 Y	3430006.30	0.16	3117971.30	110.0	80 - 120.4	
159 Tb	2804120.50	1.60	2784003.50	100.7	80 - 120.4	
209 Bi	1462200.30	1.54	1452804.80	100.6	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

3 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\124_CCB.D\124_CCB.D#
Date Acquired: Oct 12 2018 02:37 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0031	ppb	68.20	1.00	
11 B	3.478	ppb	3.38	1.00	
23 Na	98.27	ppb	1.96	1.00	
25 Mg	0.5979	ppb	0.81	1.00	
27 Al	0.0074	ppb	746.59	1.00	
28 Si	100.1	ppb	8.21	1.00	
29 Si	-123.3	ppb	22.13	1.00	
39 K	4.269	ppb	15.26	1.00	
43 Ca	-7.429	ppb	41.27	1.00	
44 Ca	-15.61	ppb	22.54	1.00	
51 V	-0.1262	ppb	94.61	1.00	
52 Cr	-0.1941	ppb	9.26	1.00	
53 Cr	-8.413	ppb	4.14	1.00	
55 Mn	-0.0052	ppb	40.07	1.00	
56 Fe	10.14	ppb	15.58	1.00	
57 Fe	8.978	ppb	19.66	1.00	
59 Co	0.005	ppb	63.23	1.00	
60 Ni	0.2592	ppb	5.88	1.00	
63 Cu	0.8113	ppb	4.37	1.00	
65 Cu	0.1483	ppb	13.18	1.00	
66 Zn	0.0313	ppb	54.37	1.00	
68 Zn	0.9403	ppb	14.13	1.00	
75 As	-0.07	ppb	141.59	1.00	
82 Se	-0.3045	ppb	200.07	1.00	
88 Sr	0.0071	ppb	78.80	1.00	
98 Mo	0.0107	ppb	44.89	1.00	
107 Ag	0.0037	ppb	131.43	1.00	
109 Ag	0.0069	ppb	86.59	1.00	
111 Cd	0.1224	ppb	18.27	1.00	
114 Cd	0.01	ppb	39.78	1.00	
115 In	--------	---	--------	---	
118 Sn	0.028	ppb	25.93	1.00	
120 Sn	0.0317	ppb	10.05	1.00	
121 Sb	0.0139	ppb	68.05	1.00	
123 Sb	0.0156	ppb	26.03	1.00	
135 Ba	-0.0019	ppb	413.12	1.00	
137 Ba	0.0087	ppb	125.40	1.00	
182 W	0.0291	ppb	29.54	1.00	
203 Tl	0.0057	ppb	118.32	1.00	
205 Tl	0.0026	ppb	131.52	1.00	
208 Pb	0.0075	ppb	63.17	1.00	
232 Th	0.1408	ppb	18.53	1.00	
238 U	0.0018	ppb	66.28	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9326967.00	1.55	8477054.00	110.0	79.5 - 120	
45 Sc	3391225.50	0.87	2909174.30	116.6	79.5 - 120	
89 Y	3427147.80	0.78	3117971.30	109.9	79.5 - 120	
159 Tb	2821683.30	0.68	2784003.50	101.4	79.5 - 120	
209 Bi	1513112.60	1.00	1452804.80	104.2	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000163

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\125SMPL.D\125SMPL.D#
Date Acquired: Oct 12 2018 02:41 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9848-009
Misc Info:
Vial Number: 3209
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0606	0.0121	ppb	22.36	100.	
11 B	3,013.5	602.7	ppb	2.42	1000.	
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	461,300.	92,260.	ppb	0.54	200000.	
27 Al	229.9	45.98	ppb	6.00	200000.	
28 Si	8,565.	1,713.	ppb	0.56	#VALUE!	
29 Si	7,380.	1,476.	ppb	0.50	10000.	
39 K	183,450.	36,690.	ppb	1.03	200000.	
43 Ca	191,450.	38,290.	ppb	0.61	#VALUE!	
44 Ca	190,650.	38,130.	ppb	0.60	200000.	
51 V	6.57	1.314	ppb	18.22	1000.	
52 Cr	149.4	29.88	ppb	2.44	2000.	
53 Cr	250.7	50.14	ppb	4.69	#VALUE!	
55 Mn	1,924.	384.8	ppb	1.08	2000.	
56 Fe	36,195.	7,239.	ppb	0.65	#VALUE!	
57 Fe	37,045.	7,409.	ppb	0.94	100000.	
59 Co	21.755	4.351	ppb	1.58	1000.	
60 Ni	2,115.5	423.1	ppb	1.65	1000.	
63 Cu	139.4	27.88	ppb	3.21	#VALUE!	
65 Cu	14.81	2.962	ppb	2.96	2000.	
66 Zn	19.095	3.819	ppb	6.82	2000.	
68 Zn	30.685	6.137	ppb	6.61	#VALUE!	
75 As	8.075	1.615	ppb	9.88	1000.	
82 Se	-1.3355	-0.2671	ppb	129.05	1000.	
88 Sr	3,053.5	610.7	ppb	0.50	2000.	
98 Mo	870.	174.	ppb	0.27	1000.	
107 Ag	-0.0058	-0.0012	ppb	615.57	100.	
109 Ag	0.0124	0.0025	ppb	37.90	#VALUE!	
111 Cd	0.5945	0.1189	ppb	62.45	#VALUE!	
114 Cd	0.0297	0.0059	ppb	630.37	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.8275	0.1655	ppb	22.10	1000.	
120 Sn	0.8995	0.1799	ppb	4.70	#VALUE!	
121 Sb	2.8135	0.5627	ppb	3.95	#VALUE!	
123 Sb	2.588	0.5176	ppb	1.43	1000.	
135 Ba	21.79	4.358	ppb	5.24	2000.	
137 Ba	21.735	4.347	ppb	3.35	#VALUE!	
182 W	13.47	2.694	ppb	3.02	1000.	
203 Tl	0.0585	0.0117	ppb	39.70	1000.	
205 Tl	0.0421	0.0084	ppb	22.80	#VALUE!	
208 Pb	1.618	0.3236	ppb	2.76	2000.	
232 Th	1.4135	0.2827	ppb	42.63	1000.	
238 U	4.3605	0.8721	ppb	4.24	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	7326825.00	2.45	8477054.00	86.4	69.5 - 120	
45 Sc	3055556.80	0.23	2909174.30	105.0	69.5 - 120	
89 Y	3072765.00	0.91	3117971.30	98.6	69.5 - 120	
159 Tb	2420939.80	0.78	2784003.50	87.0	69.5 - 120	
209 Bi	1177909.10	1.73	1452804.80	81.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000164

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\126SMPL.D\126SMPL.D#
Date Acquired: Oct 12 2018 02:45 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9848-010
Misc Info:
Vial Number: 3210
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0342	0.0068	ppb	14.61	100.	
11 B	3,115.5	623.1	ppb	0.99	1000.	
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	468,450.	93,690.	ppb	0.50	200000.	
27 Al	26.245	5.249	ppb	2.80	200000.	
28 Si	8,820.	1,764.	ppb	0.76	#VALUE!	
29 Si	7,310.	1,462.	ppb	2.76	10000.	
39 K	186,200.	37,240.	ppb	1.08	200000.	
43 Ca	174,500.	34,900.	ppb	0.91	#VALUE!	
44 Ca	172,950.	34,590.	ppb	0.66	200000.	
51 V	1.2285	0.2457	ppb	55.80	1000.	
52 Cr	6.07	1.214	ppb	2.48	2000.	
53 Cr	116.15	23.23	ppb	3.65	#VALUE!	
55 Mn	199.8	39.96	ppb	1.54	2000.	
56 Fe	604.5	120.9	ppb	0.63	#VALUE!	
57 Fe	2,088.	417.6	ppb	5.74	100000.	
59 Co	1.62	0.324	ppb	2.62	1000.	
60 Ni	134.35	26.87	ppb	3.86	1000.	
63 Cu	130.6	26.12	ppb	0.55	#VALUE!	
65 Cu	3.438	0.6876	ppb	8.29	2000.	
66 Zn	7.82	1.564	ppb	3.07	2000.	
68 Zn	19.38	3.876	ppb	7.48	#VALUE!	
75 As	9.665	1.933	ppb	19.21	1000.	
82 Se	2.686	0.5372	ppb	75.93	1000.	
88 Sr	2,973.5	594.7	ppb	0.36	2000.	
98 Mo	1,064.5	212.9	ppb	0.78	1000.	
107 Ag	-0.0225	-0.0045	ppb	79.36	100.	
109 Ag	-0.0112	-0.0022	ppb	134.04	#VALUE!	
111 Cd	-0.0601	-0.012	ppb	1004.20	#VALUE!	
114 Cd	-0.1145	-0.0229	ppb	77.37	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.6325	0.1265	ppb	31.31	1000.	
120 Sn	0.613	0.1226	ppb	6.96	#VALUE!	
121 Sb	3.1785	0.6357	ppb	2.96	#VALUE!	
123 Sb	3.411	0.6822	ppb	3.47	1000.	
135 Ba	20.095	4.019	ppb	1.55	2000.	
137 Ba	19.33	3.866	ppb	2.11	#VALUE!	
182 W	16.905	3.381	ppb	1.50	1000.	
203 Tl	0.0323	0.0065	ppb	74.32	1000.	
205 Tl	0.0217	0.0043	ppb	32.97	#VALUE!	
208 Pb	0.1477	0.0295	ppb	23.33	2000.	
232 Th	0.3892	0.0778	ppb	24.81	1000.	
238 U	5.22	1.044	ppb	1.30	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	7534969.00	0.73	8477054.00	88.9	69.5 - 120	
45 Sc	3159864.00	1.24	2909174.30	108.6	69.5 - 120	
89 Y	3156182.30	2.13	3117971.30	101.2	69.5 - 120	
159 Tb	2479415.50	1.21	2784003.50	89.1	69.5 - 120	
209 Bi	1198979.40	1.37	1452804.80	82.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000165

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\127SMPL.D\127SMPL.D#
Date Acquired: Oct 12 2018 02:49 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9848-011
Misc Info:
Vial Number: 3211
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0963	0.0193	ppb	4.54	100.	
11 B	2,307.	461.4	ppb	2.96	1000.	
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	287,850.	57,570.	ppb	1.39	200000.	
27 Al	785.5	157.1	ppb	4.87	200000.	
28 Si	16,770.	3,354.	ppb	2.74	#VALUE!	
29 Si	14,485.	2,897.	ppb	1.83	10000.	
39 K	124,250.	24,850.	ppb	0.97	200000.	
43 Ca	133,550.	26,710.	ppb	1.74	#VALUE!	
44 Ca	133,500.	26,700.	ppb	0.61	200000.	
51 V	8.355	1.671	ppb	10.33	1000.	
52 Cr	56.65	11.33	ppb	2.15	2000.	
53 Cr	171.	34.2	ppb	2.06	#VALUE!	
55 Mn	178.65	35.73	ppb	2.92	2000.	
56 Fe	4,359.5	871.9	ppb	1.05	#VALUE!	
57 Fe	5,780.	1,156.	ppb	2.89	100000.	
59 Co	2.454	0.4908	ppb	4.25	1000.	
60 Ni	101.85	20.37	ppb	3.47	1000.	
63 Cu	79.75	15.95	ppb	0.95	#VALUE!	
65 Cu	6.44	1.288	ppb	2.03	2000.	
66 Zn	13.375	2.675	ppb	2.96	2000.	
68 Zn	25.56	5.112	ppb	2.46	#VALUE!	
75 As	9.88	1.976	ppb	5.20	1000.	
82 Se	6.31	1.262	ppb	40.75	1000.	
88 Sr	2,023.5	404.7	ppb	0.55	2000.	
98 Mo	105.45	21.09	ppb	0.76	1000.	
107 Ag	0.0138	0.0028	ppb	106.87	100.	
109 Ag	-0.0069	-0.0014	ppb	338.58	#VALUE!	
111 Cd	-0.1796	-0.0359	ppb	121.80	#VALUE!	
114 Cd	0.122	0.0244	ppb	24.99	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.8625	0.1725	ppb	12.52	1000.	
120 Sn	0.8655	0.1731	ppb	14.34	#VALUE!	
121 Sb	1.596	0.3192	ppb	8.31	#VALUE!	
123 Sb	1.551	0.3102	ppb	2.15	1000.	
135 Ba	28.96	5.792	ppb	0.64	2000.	
137 Ba	29.085	5.817	ppb	3.06	#VALUE!	
182 W	8.485	1.697	ppb	4.61	1000.	
203 Tl	0.0361	0.0072	ppb	48.40	1000.	
205 Tl	0.0151	0.003	ppb	215.81	#VALUE!	
208 Pb	2.1895	0.4379	ppb	2.65	2000.	
232 Th	0.7385	0.1477	ppb	7.39	1000.	
238 U	4.2315	0.8463	ppb	5.12	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	7815530.50	3.31	8477054.00	92.2	69.5 - 120	
45 Sc	3224858.50	1.19	2909174.30	110.9	69.5 - 120	
89 Y	3229724.50	0.90	3117971.30	103.6	69.5 - 120	
159 Tb	2553138.00	1.10	2784003.50	91.7	69.5 - 120	
209 Bi	1239499.00	2.79	1452804.80	85.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000166

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\128SMPL.D\128SMPL.D#
Date Acquired: Oct 12 2018 02:53 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9848-012
Misc Info:
Vial Number: 3212
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0672	0.0134	ppb	18.65	100.	
11 B	2,306.	461.2	ppb	2.79	1000.	
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	314,650.	62,930.	ppb	0.08	200000.	
27 Al	360.45	72.09	ppb	1.58	200000.	
28 Si	13,855.	2,771.	ppb	1.49	#VALUE!	
29 Si	11,890.	2,378.	ppb	2.31	10000.	
39 K	130,200.	26,040.	ppb	0.77	200000.	
43 Ca	144,350.	28,870.	ppb	0.93	#VALUE!	
44 Ca	143,250.	28,650.	ppb	0.22	200000.	
51 V	3.165	0.633	ppb	98.83	1000.	
52 Cr	44.13	8.826	ppb	1.67	2000.	
53 Cr	178.95	35.79	ppb	7.84	#VALUE!	
55 Mn	180.25	36.05	ppb	1.37	2000.	
56 Fe	2,849.5	569.9	ppb	1.46	#VALUE!	
57 Fe	4,267.5	853.5	ppb	1.37	100000.	
59 Co	1.6945	0.3389	ppb	1.23	1000.	
60 Ni	53.95	10.79	ppb	2.69	1000.	
63 Cu	78.1	15.62	ppb	0.58	#VALUE!	
65 Cu	4.4095	0.8819	ppb	9.17	2000.	
66 Zn	11.7	2.34	ppb	1.23	2000.	
68 Zn	20.89	4.178	ppb	12.59	#VALUE!	
75 As	6.86	1.372	ppb	15.79	1000.	
82 Se	6.64	1.328	ppb	46.08	1000.	
88 Sr	2,219.5	443.9	ppb	1.02	2000.	
98 Mo	41.18	8.236	ppb	2.27	1000.	
107 Ag	-0.0179	-0.0036	ppb	147.62	100.	
109 Ag	-0.0074	-0.0015	ppb	47.27	#VALUE!	
111 Cd	0.0415	0.0083	ppb	765.51	#VALUE!	
114 Cd	0.1501	0.03	ppb	21.16	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.631	0.1262	ppb	24.46	1000.	
120 Sn	0.6735	0.1347	ppb	8.68	#VALUE!	
121 Sb	0.8895	0.1779	ppb	12.49	#VALUE!	
123 Sb	0.8545	0.1709	ppb	11.00	1000.	
135 Ba	36.7	7.34	ppb	1.74	2000.	
137 Ba	35.26	7.052	ppb	1.82	#VALUE!	
182 W	6.26	1.252	ppb	2.87	1000.	
203 Tl	0.0158	0.0032	ppb	102.24	1000.	
205 Tl	-0.0032	-0.0006	ppb	226.74	#VALUE!	
208 Pb	1.5695	0.3139	ppb	1.51	2000.	
232 Th	0.4126	0.0825	ppb	7.88	1000.	
238 U	5.42	1.084	ppb	5.00	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	7918580.50	0.53	8477054.00	93.4	69.5 - 120	
45 Sc	3214726.80	0.82	2909174.30	110.5	69.5 - 120	
89 Y	3185326.50	0.99	3117971.30	102.2	69.5 - 120	
159 Tb	2531420.80	0.74	2784003.50	90.9	69.5 - 120	
209 Bi	1233391.50	2.32	1452804.80	84.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000167

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\129SMPL.D\129SMPL.D#
Date Acquired: Oct 12 2018 02:58 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9848-013
Misc Info:
Vial Number: 3301
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.585	1.517	ppb	2.78	100.	
11 B	2,857.	571.4	ppb	3.88	1000.	
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	387,450.	77,490.	ppb	0.61	200000.	
27 Al	67,600.	13,520.	ppb	1.02	200000.	
28 Si	32,190.	6,438.	ppb	7.16	#VALUE!	
29 Si	28,260.	5,652.	ppb	8.17	10000.	
39 K	183,100.	36,620.	ppb	0.85	200000.	
43 Ca	243,400.	48,680.	ppb	0.11	#VALUE!	
44 Ca	243,150.	48,630.	ppb	0.27	200000.	
51 V	266.65	53.33	ppb	0.81	1000.	
52 Cr	921.	184.2	ppb	1.73	2000.	
53 Cr	1,077.	215.4	ppb	2.97	#VALUE!	
55 Mn	1,315.5	263.1	ppb	1.74	2000.	
56 Fe	186,800.	37,360.	ppb	1.51	#VALUE!	
57 Fe	182,450.	36,490.	ppb	1.74	100000.	
59 Co	50.2	10.04	ppb	2.40	1000.	
60 Ni	414.05	82.81	ppb	2.87	1000.	
63 Cu	423.55	84.71	ppb	1.22	#VALUE!	
65 Cu	332.5	66.5	ppb	1.49	2000.	
66 Zn	676.	135.2	ppb	1.42	2000.	
68 Zn	655.	131.	ppb	0.41	#VALUE!	
75 As	67.9	13.58	ppb	3.32	1000.	
82 Se	36.475	7.295	ppb	17.99	1000.	
88 Sr	3,020.5	604.1	ppb	0.25	2000.	
98 Mo	58.05	11.61	ppb	2.56	1000.	
107 Ag	3.2885	0.6577	ppb	3.29	100.	
109 Ag	3.271	0.6542	ppb	8.88	#VALUE!	
111 Cd	8.07	1.614	ppb	3.98	#VALUE!	
114 Cd	8.03	1.606	ppb	2.88	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	32.42	6.484	ppb	1.06	1000.	
120 Sn	31.985	6.397	ppb	1.50	#VALUE!	
121 Sb	3.4955	0.6991	ppb	3.03	#VALUE!	
123 Sb	3.5115	0.7023	ppb	4.94	1000.	
135 Ba	213.45	42.69	ppb	1.97	2000.	
137 Ba	216.9	43.38	ppb	1.33	#VALUE!	
182 W	1.9375	0.3875	ppb	4.59	1000.	
203 Tl	1.6285	0.3257	ppb	12.48	1000.	
205 Tl	1.681	0.3362	ppb	6.78	#VALUE!	
208 Pb	274.15	54.83	ppb	2.87	2000.	
232 Th	41.38	8.276	ppb	1.67	1000.	
238 U	24.4	4.88	ppb	3.15	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	7284516.50	2.73	8477054.00	85.9	69.5 - 120	
45 Sc	3160434.50	1.05	2909174.30	108.6	69.5 - 120	
89 Y	3422152.30	1.66	3117971.30	109.8	69.5 - 120	
159 Tb	2503740.30	1.27	2784003.50	89.9	69.5 - 120	
209 Bi	1223862.50	3.43	1452804.80	84.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000168

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\130SMPL.D\130SMPL.D#
Date Acquired: Oct 12 2018 03:02 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9848-014
Misc Info:
Vial Number: 3302
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.3071	0.0614	ppb	5.45	100.	
11 B	2,669.5	533.9	ppb	1.80	1000.	
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	360,900.	72,180.	ppb	1.00	200000.	
27 Al	2,839.	567.8	ppb	1.10	200000.	
28 Si	16,705.	3,341.	ppb	0.70	#VALUE!	
29 Si	14,290.	2,858.	ppb	1.51	10000.	
39 K	171,800.	34,360.	ppb	0.40	200000.	
43 Ca	177,300.	35,460.	ppb	0.30	#VALUE!	
44 Ca	175,700.	35,140.	ppb	0.31	200000.	
51 V	13.26	2.652	ppb	7.93	1000.	
52 Cr	48.86	9.772	ppb	1.49	2000.	
53 Cr	135.15	27.03	ppb	0.77	#VALUE!	
55 Mn	141.05	28.21	ppb	2.06	2000.	
56 Fe	9,010.	1,802.	ppb	1.71	#VALUE!	
57 Fe	10,210.	2,042.	ppb	2.41	100000.	
59 Co	3.177	0.6354	ppb	5.27	1000.	
60 Ni	45.615	9.123	ppb	3.30	1000.	
63 Cu	117.4	23.48	ppb	0.32	#VALUE!	
65 Cu	17.55	3.51	ppb	2.94	2000.	
66 Zn	34.685	6.937	ppb	0.97	2000.	
68 Zn	41.7	8.34	ppb	5.99	#VALUE!	
75 As	8.93	1.786	ppb	4.79	1000.	
82 Se	3.806	0.7612	ppb	60.65	1000.	
88 Sr	2,701.5	540.3	ppb	0.59	2000.	
98 Mo	24.72	4.944	ppb	3.21	1000.	
107 Ag	0.1018	0.0204	ppb	42.20	100.	
109 Ag	0.0796	0.0159	ppb	23.12	#VALUE!	
111 Cd	0.3146	0.0629	ppb	50.72	#VALUE!	
114 Cd	0.4491	0.0898	ppb	21.68	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.843	0.5686	ppb	1.43	1000.	
120 Sn	2.9425	0.5885	ppb	4.76	#VALUE!	
121 Sb	0.968	0.1936	ppb	3.53	#VALUE!	
123 Sb	0.909	0.1818	ppb	1.80	1000.	
135 Ba	20.775	4.155	ppb	0.59	2000.	
137 Ba	20.665	4.133	ppb	1.04	#VALUE!	
182 W	0.505	0.101	ppb	18.79	1000.	
203 Tl	0.0804	0.0161	ppb	37.75	1000.	
205 Tl	0.08	0.016	ppb	15.31	#VALUE!	
208 Pb	11.29	2.258	ppb	1.39	2000.	
232 Th	2.399	0.4798	ppb	6.30	1000.	
238 U	4.0995	0.8199	ppb	1.66	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	7605739.00	0.79	8477054.00	89.7	69.5 - 120	
45 Sc	3220175.50	0.43	2909174.30	110.7	69.5 - 120	
89 Y	3264817.80	1.53	3117971.30	104.7	69.5 - 120	
159 Tb	2527350.00	1.00	2784003.50	90.8	69.5 - 120	
209 Bi	1249899.00	1.79	1452804.80	86.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000169

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\131SMPL.D\131SMPL.D#
Date Acquired: Oct 12 2018 03:06 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9849-001
Misc Info:
Vial Number: 3303
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0389	0.0078	ppb	33.32	100.	
11 B	45.865	9.173	ppb	3.15	1000.	
23 Na	1,376.5	275.3	ppb	4.69	200000.	
25 Mg	1,250.	250.	ppb	1.00	200000.	
27 Al	562.5	112.5	ppb	0.76	200000.	
28 Si	5,015.	1,003.	ppb	1.33	#VALUE!	
29 Si	3,103.5	620.7	ppb	0.89	10000.	
39 K	5,320.	1,064.	ppb	0.62	200000.	
43 Ca	22,940.	4,588.	ppb	0.54	#VALUE!	
44 Ca	23,680.	4,736.	ppb	0.38	200000.	
51 V	0.5485	0.1097	ppb	232.82	1000.	
52 Cr	2.7885	0.5577	ppb	5.86	2000.	
53 Cr	91.45	18.29	ppb	4.68	#VALUE!	
55 Mn	8.29	1.658	ppb	0.82	2000.	
56 Fe	583.5	116.7	ppb	2.64	#VALUE!	
57 Fe	834.5	166.9	ppb	4.76	100000.	
59 Co	0.4282	0.0856	ppb	7.86	1000.	
60 Ni	3.861	0.7722	ppb	6.93	1000.	
63 Cu	7.88	1.576	ppb	6.33	#VALUE!	
65 Cu	4.352	0.8704	ppb	4.84	2000.	
66 Zn	3.5365	0.7073	ppb	3.21	2000.	
68 Zn	13.605	2.721	ppb	7.03	#VALUE!	
75 As	0.4169	0.0834	ppb	223.43	1000.	
82 Se	-3.6725	-0.7345	ppb	53.37	1000.	
88 Sr	140.45	28.09	ppb	1.27	2000.	
98 Mo	0.3033	0.0607	ppb	16.60	1000.	
107 Ag	0.0066	0.0013	ppb	99.77	100.	
109 Ag	0.0228	0.0046	ppb	129.95	#VALUE!	
111 Cd	0.1418	0.0284	ppb	232.90	#VALUE!	
114 Cd	0.0763	0.0153	ppb	57.60	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.2883	0.0577	ppb	35.46	1000.	
120 Sn	0.4408	0.0882	ppb	13.22	#VALUE!	
121 Sb	0.125	0.025	ppb	46.06	#VALUE!	
123 Sb	0.1806	0.0361	ppb	8.66	1000.	
135 Ba	125.55	25.11	ppb	0.70	2000.	
137 Ba	124.4	24.88	ppb	1.24	#VALUE!	
182 W	0.0719	0.0144	ppb	47.80	1000.	
203 Tl	0.0432	0.0086	ppb	25.56	1000.	
205 Tl	0.0051	0.001	ppb	34.07	#VALUE!	
208 Pb	0.629	0.1258	ppb	3.73	2000.	
232 Th	0.3657	0.0731	ppb	4.62	1000.	
238 U	0.1541	0.0308	ppb	7.67	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9439479.00	3.66	8477054.00	111.4	69.5 - 120	
45 Sc	3509624.50	0.42	2909174.30	120.6	69.5 - 120	IS Fai
89 Y	3541312.80	0.96	3117971.30	113.6	69.5 - 120	
159 Tb	2846301.80	0.71	2784003.50	102.2	69.5 - 120	
209 Bi	1513727.10	0.74	1452804.80	104.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000170

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\132SMPL.D\132SMPL.D#
Date Acquired: Oct 12 2018 03:10 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9849-002
Misc Info:
Vial Number: 3304
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0292	0.0058	ppb	22.63	100.	
11 B	40.535	8.107	ppb	3.92	1000.	
23 Na	1,660.5	332.1	ppb	1.27	200000.	
25 Mg	1,954.	390.8	ppb	1.08	200000.	
27 Al	231.35	46.27	ppb	2.30	200000.	
28 Si	7,655.	1,531.	ppb	1.99	#VALUE!	
29 Si	5,585.	1,117.	ppb	5.09	10000.	
39 K	7,840.	1,568.	ppb	1.71	200000.	
43 Ca	21,370.	4,274.	ppb	1.53	#VALUE!	
44 Ca	22,210.	4,442.	ppb	0.54	200000.	
51 V	1.583	0.3166	ppb	102.65	1000.	
52 Cr	2.3405	0.4681	ppb	3.99	2000.	
53 Cr	97.75	19.55	ppb	3.47	#VALUE!	
55 Mn	3.9065	0.7813	ppb	1.59	2000.	
56 Fe	262.35	52.47	ppb	0.78	#VALUE!	
57 Fe	451.85	90.37	ppb	2.94	100000.	
59 Co	0.2138	0.0428	ppb	15.20	1000.	
60 Ni	3.5975	0.7195	ppb	4.62	1000.	
63 Cu	9.115	1.823	ppb	2.42	#VALUE!	
65 Cu	5.74	1.148	ppb	0.70	2000.	
66 Zn	9.525	1.905	ppb	9.58	2000.	
68 Zn	12.26	2.452	ppb	11.09	#VALUE!	
75 As	0.4411	0.0882	ppb	413.11	1000.	
82 Se	-1.1545	-0.2309	ppb	187.74	1000.	
88 Sr	93.2	18.64	ppb	2.09	2000.	
98 Mo	0.588	0.1176	ppb	8.42	1000.	
107 Ag	-0.0299	-0.006	ppb	129.67	100.	
109 Ag	-0.0142	-0.0028	ppb	136.00	#VALUE!	
111 Cd	0.1439	0.0288	ppb	134.62	#VALUE!	
114 Cd	0.077	0.0154	ppb	54.96	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.3858	0.0772	ppb	15.68	1000.	
120 Sn	0.3336	0.0667	ppb	17.06	#VALUE!	
121 Sb	0.2351	0.047	ppb	11.77	#VALUE!	
123 Sb	0.2778	0.0556	ppb	13.61	1000.	
135 Ba	47.1	9.42	ppb	2.26	2000.	
137 Ba	47.86	9.572	ppb	2.71	#VALUE!	
182 W	0.0589	0.0118	ppb	33.57	1000.	
203 Tl	0.0237	0.0047	ppb	83.70	1000.	
205 Tl	0.0031	0.0006	ppb	356.10	#VALUE!	
208 Pb	1.6475	0.3295	ppb	0.26	2000.	
232 Th	0.1858	0.0372	ppb	12.24	1000.	
238 U	0.1478	0.0296	ppb	18.62	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9649845.00	2.28	8477054.00	113.8	69.5 - 120	
45 Sc	3500607.50	1.60	2909174.30	120.3	69.5 - 120	
89 Y	3505565.80	0.90	3117971.30	112.4	69.5 - 120	
159 Tb	2836283.50	0.58	2784003.50	101.9	69.5 - 120	
209 Bi	1513565.10	0.77	1452804.80	104.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000171

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\133SMPL.D\133SMPL.D#
Date Acquired: Oct 12 2018 03:14 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9849-003
Misc Info:
Vial Number: 3305
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0291	0.0058	ppb	23.15	100.	
11 B	32.96	6.592	ppb	2.44	1000.	
23 Na	3,212.5	642.5	ppb	1.74	200000.	
25 Mg	1,987.	397.4	ppb	2.76	200000.	
27 Al	167.5	33.5	ppb	2.46	200000.	
28 Si	6,315.	1,263.	ppb	0.65	#VALUE!	
29 Si	4,350.	870.	ppb	2.99	10000.	
39 K	5,710.	1,142.	ppb	0.43	200000.	
43 Ca	20,900.	4,180.	ppb	0.53	#VALUE!	
44 Ca	21,690.	4,338.	ppb	0.52	200000.	
51 V	2.8335	0.5667	ppb	34.75	1000.	
52 Cr	2.3525	0.4705	ppb	9.06	2000.	
53 Cr	92.65	18.53	ppb	2.38	#VALUE!	
55 Mn	2.6735	0.5347	ppb	4.60	2000.	
56 Fe	215.05	43.01	ppb	4.41	#VALUE!	
57 Fe	391.2	78.24	ppb	4.25	100000.	
59 Co	0.3072	0.0614	ppb	2.46	1000.	
60 Ni	3.695	0.739	ppb	7.13	1000.	
63 Cu	14.535	2.907	ppb	2.54	#VALUE!	
65 Cu	11.785	2.357	ppb	3.95	2000.	
66 Zn	33.285	6.657	ppb	2.68	2000.	
68 Zn	34.935	6.987	ppb	3.61	#VALUE!	
75 As	0.744	0.1488	ppb	203.29	1000.	
82 Se	-0.1764	-0.0353	ppb	2344.50	1000.	
88 Sr	130.15	26.03	ppb	1.01	2000.	
98 Mo	0.7125	0.1425	ppb	14.28	1000.	
107 Ag	0.0141	0.0028	ppb	170.23	100.	
109 Ag	-0.0234	-0.0047	ppb	146.75	#VALUE!	
111 Cd	0.4846	0.0969	ppb	60.74	#VALUE!	
114 Cd	0.0102	0.002	ppb	52.17	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.3465	0.0693	ppb	16.45	1000.	
120 Sn	0.3495	0.0699	ppb	3.14	#VALUE!	
121 Sb	0.2178	0.0436	ppb	1.45	#VALUE!	
123 Sb	0.269	0.0538	ppb	2.62	1000.	
135 Ba	41.96	8.392	ppb	4.49	2000.	
137 Ba	41.075	8.215	ppb	1.52	#VALUE!	
182 W	0.0532	0.0106	ppb	64.03	1000.	
203 Tl	0.0144	0.0029	ppb	61.48	1000.	
205 Tl	0.0046	0.0009	ppb	284.26	#VALUE!	
208 Pb	1.2595	0.2519	ppb	4.51	2000.	
232 Th	0.1631	0.0326	ppb	10.23	1000.	
238 U	0.0884	0.0177	ppb	9.22	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9573918.00	1.78	8477054.00	112.9	69.5 - 120	
45 Sc	3466065.30	0.50	2909174.30	119.1	69.5 - 120	
89 Y	3443024.50	0.67	3117971.30	110.4	69.5 - 120	
159 Tb	2809733.30	0.11	2784003.50	100.9	69.5 - 120	
209 Bi	1489171.50	0.68	1452804.80	102.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000172

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\134SMPL.D\134SMPL.D#
Date Acquired: Oct 12 2018 03:18 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9849-003L
Misc Info:
Vial Number: 3306
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0759	0.003	ppb	19.56	100.	
11 B	56.6	2.264	ppb	0.26	1000.	
23 Na	4,515.	180.6	ppb	2.00	200000.	
25 Mg	2,080.5	83.22	ppb	1.65	200000.	
27 Al	234.625	9.385	ppb	2.99	200000.	
28 Si	8,737.5	349.5	ppb	3.15	#VALUE!	
29 Si	2,290.	91.6	ppb	55.31	10000.	
39 K	5,767.5	230.7	ppb	0.54	200000.	
43 Ca	21,217.5	848.7	ppb	2.67	#VALUE!	
44 Ca	22,460.	898.4	ppb	1.48	200000.	
51 V	2.505	0.1002	ppb	133.93	1000.	
52 Cr	0.0919	0.0037	ppb	590.04	2000.	
53 Cr	-1.6028	-0.0641	ppb	964.75	#VALUE!	
55 Mn	2.865	0.1146	ppb	11.46	2000.	
56 Fe	483.5	19.34	ppb	7.11	#VALUE!	
57 Fe	640.5	25.62	ppb	12.50	100000.	
59 Co	0.2545	0.0102	ppb	39.87	1000.	
60 Ni	7.9825	0.3193	ppb	14.55	1000.	
63 Cu	29.975	1.199	ppb	0.46	#VALUE!	
65 Cu	14.4725	0.5789	ppb	5.76	2000.	
66 Zn	34.175	1.367	ppb	9.00	2000.	
68 Zn	45.675	1.827	ppb	18.49	#VALUE!	
75 As	-0.3248	-0.013	ppb	2587.40	1000.	
82 Se	-2.9725	-0.1189	ppb	629.69	1000.	
88 Sr	131.875	5.275	ppb	0.81	2000.	
98 Mo	0.6128	0.0245	ppb	38.49	1000.	
107 Ag	0.1786	0.0071	ppb	144.92	100.	
109 Ag	0.0232	0.0009	ppb	387.74	#VALUE!	
111 Cd	3.5175	0.1407	ppb	32.89	#VALUE!	
114 Cd	0.2505	0.01	ppb	47.92	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.4115	0.0165	ppb	47.37	1000.	
120 Sn	0.948	0.0379	ppb	25.08	#VALUE!	
121 Sb	0.3483	0.0139	ppb	21.31	#VALUE!	
123 Sb	0.3458	0.0138	ppb	98.92	1000.	
135 Ba	43.35	1.734	ppb	2.64	2000.	
137 Ba	43.85	1.754	ppb	1.01	#VALUE!	
182 W	0.1558	0.0062	ppb	57.74	1000.	
203 Tl	0.1457	0.0058	ppb	30.46	1000.	
205 Tl	0.0322	0.0013	ppb	207.45	#VALUE!	
208 Pb	1.343	0.0537	ppb	12.75	2000.	
232 Th	0.2402	0.0096	ppb	44.76	1000.	
238 U	0.0991	0.004	ppb	54.97	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9676800.00	1.30	8477054.00	114.2	69.5 - 120	
45 Sc	3440310.00	0.69	2909174.30	118.3	69.5 - 120	
89 Y	3443789.00	0.55	3117971.30	110.4	69.5 - 120	
159 Tb	2806800.30	0.92	2784003.50	100.8	69.5 - 120	
209 Bi	1496653.90	0.54	1452804.80	103.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000173

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\135_CCV.D\135_CCV.D#
Date Acquired: Oct 12 2018 03:22 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	26.21	ppb	0.69	25	104.84	
11 B	25.31	ppb	1.43	25	101.24	
23 Na	4,937.	ppb	0.59	5,000	98.74	
25 Mg	4,911.	ppb	0.73	5,000	98.22	
27 Al	496.5	ppb	0.09	500	99.3	
28 Si	615.5	ppb	2.49	500	123.1	
29 Si	350.7	ppb	7.37	500	70.14	Fail
39 K	5,076.	ppb	0.66	5,000	101.52	
43 Ca	4,799.	ppb	2.09	5,000	95.98	
44 Ca	5,088.	ppb	0.54	5,000	101.76	
51 V	26.52	ppb	1.66	25	106.08	
52 Cr	26.23	ppb	2.14	25	104.92	
53 Cr	20.86	ppb	9.56	25	83.44	
55 Mn	26.82	ppb	1.94	25	107.28	
56 Fe	5,166.	ppb	1.17	5,000	103.32	
57 Fe	5,248.	ppb	1.48	5,000	104.96	
59 Co	25.49	ppb	2.42	25	101.96	
60 Ni	24.21	ppb	2.64	25	96.84	
63 Cu	24.13	ppb	1.40	25	96.52	
65 Cu	22.98	ppb	1.87	25	91.92	
66 Zn	20.24	ppb	2.43	25	80.96	Fail
68 Zn	21.18	ppb	1.56	25	84.72	
75 As	23.47	ppb	0.21	25	93.88	
82 Se	24.05	ppb	1.87	25	96.2	
88 Sr	26.01	ppb	1.17	25	104.04	
98 Mo	24.03	ppb	1.54	25	96.12	
107 Ag	23.85	ppb	2.10	25	95.4	
109 Ag	23.77	ppb	1.90	25	95.08	
111 Cd	23.89	ppb	1.73	25	95.56	
114 Cd	23.71	ppb	1.82	25	94.84	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.4	ppb	2.68	25	101.6	
120 Sn	25.22	ppb	2.67	25	100.88	
121 Sb	25.59	ppb	2.10	25	102.36	
123 Sb	25.71	ppb	2.75	25	102.84	
135 Ba	25.32	ppb	1.06	25	101.28	
137 Ba	25.94	ppb	2.16	25	103.76	
182 W	24.14	ppb	2.07	25	96.56	
203 Tl	23.84	ppb	1.68	25	95.36	
205 Tl	23.57	ppb	2.95	25	94.28	
208 Pb	23.69	ppb	2.78	25	94.76	
232 Th	25.89	ppb	1.27	25	103.56	
238 U	26.64	ppb	3.19	25	106.56	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9390422.00	1.78	8477054.00	110.8	80 - 120.4	
45 Sc	3396753.30	0.95	2909174.30	116.8	80 - 120.4	
89 Y	3363762.80	0.77	3117971.30	107.9	80 - 120.4	
159 Tb	2780084.50	0.48	2784003.50	99.9	80 - 120.4	
209 Bi	1457356.00	0.32	1452804.80	100.3	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000174

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\136_CCB.D\136_CCB.D#
Date Acquired: Oct 12 2018 03:27 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0032	ppb	16.44	1.00	
11 B	0.8751	ppb	2.08	1.00	
23 Na	58.95	ppb	1.30	1.00	
25 Mg	0.3208	ppb	6.61	1.00	
27 Al	0.037	ppb	116.55	1.00	
28 Si	127.9	ppb	18.50	1.00	
29 Si	-100.3	ppb	59.91	1.00	
39 K	4.204	ppb	27.24	1.00	
43 Ca	-7.424	ppb	36.34	1.00	
44 Ca	-12.04	ppb	10.15	1.00	
51 V	-0.116	ppb	82.68	1.00	
52 Cr	-0.2086	ppb	5.07	1.00	
53 Cr	-8.591	ppb	2.57	1.00	
55 Mn	-0.0025	ppb	232.28	1.00	
56 Fe	11.1	ppb	17.51	1.00	
57 Fe	12.71	ppb	25.24	1.00	
59 Co	0.0018	ppb	65.68	1.00	
60 Ni	0.2423	ppb	2.60	1.00	
63 Cu	0.5656	ppb	5.04	1.00	
65 Cu	0.0769	ppb	16.44	1.00	
66 Zn	0.0284	ppb	201.69	1.00	
68 Zn	0.8876	ppb	35.01	1.00	
75 As	-0.1177	ppb	72.84	1.00	
82 Se	-0.3618	ppb	73.91	1.00	
88 Sr	0.0056	ppb	34.42	1.00	
98 Mo	0.0091	ppb	63.76	1.00	
107 Ag	0.0019	ppb	349.11	1.00	
109 Ag	-0.0013	ppb	95.80	1.00	
111 Cd	0.1702	ppb	50.35	1.00	
114 Cd	0.0087	ppb	118.83	1.00	
115 In	--------	---	--------	---	
118 Sn	0.007	ppb	42.72	1.00	
120 Sn	0.032	ppb	53.52	1.00	
121 Sb	0.017	ppb	48.76	1.00	
123 Sb	0.0141	ppb	17.70	1.00	
135 Ba	-0.003	ppb	310.63	1.00	
137 Ba	0.0028	ppb	345.16	1.00	
182 W	0.0323	ppb	18.00	1.00	
203 Tl	0.0054	ppb	43.21	1.00	
205 Tl	0.0017	ppb	19.13	1.00	
208 Pb	0.0027	ppb	185.94	1.00	
232 Th	0.1097	ppb	16.98	1.00	
238 U	0.003	ppb	48.57	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9667737.00	2.13	8477054.00	114.0	79.5 - 120	
45 Sc	3392193.50	1.49	2909174.30	116.6	79.5 - 120	
89 Y	3373636.00	1.25	3117971.30	108.2	79.5 - 120	
159 Tb	2779231.80	0.58	2784003.50	99.8	79.5 - 120	
209 Bi	1486056.00	0.70	1452804.80	102.3	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000175

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\137SMPL.D\137SMPL.D#
Date Acquired: Oct 12 2018 03:31 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9849-003A
Misc Info:
Vial Number: 3307
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	11.44	2.288	ppb	3.10	100.	
11 B	249.9	49.98	ppb	2.84	1000.	
23 Na	13,895.	2,779.	ppb	0.49	200000.	
25 Mg	3,251.5	650.3	ppb	0.72	200000.	
27 Al	1,254.5	250.9	ppb	0.69	200000.	
28 Si	11,505.	2,301.	ppb	0.54	#VALUE!	
29 Si	9,030.	1,806.	ppb	0.53	10000.	
39 K	16,765.	3,353.	ppb	0.58	200000.	
43 Ca	21,635.	4,327.	ppb	0.49	#VALUE!	
44 Ca	22,585.	4,517.	ppb	1.07	200000.	
51 V	58.85	11.77	ppb	2.66	1000.	
52 Cr	60.35	12.07	ppb	1.37	2000.	
53 Cr	139.2	27.84	ppb	0.50	#VALUE!	
55 Mn	25.235	5.047	ppb	2.15	2000.	
56 Fe	1,293.	258.6	ppb	1.77	#VALUE!	
57 Fe	1,612.5	322.5	ppb	5.13	100000.	
59 Co	11.82	2.364	ppb	0.82	1000.	
60 Ni	24.55	4.91	ppb	1.68	1000.	
63 Cu	46.16	9.232	ppb	1.62	#VALUE!	
65 Cu	42.54	8.508	ppb	1.32	2000.	
66 Zn	116.35	23.27	ppb	2.54	2000.	
68 Zn	115.4	23.08	ppb	2.45	#VALUE!	
75 As	49.915	9.983	ppb	1.81	1000.	
82 Se	49.4	9.88	ppb	8.92	1000.	
88 Sr	186.6	37.32	ppb	0.61	2000.	
98 Mo	52.95	10.59	ppb	1.08	1000.	
107 Ag	10.395	2.079	ppb	3.32	100.	
109 Ag	10.33	2.066	ppb	3.44	#VALUE!	
111 Cd	10.22	2.044	ppb	5.15	#VALUE!	
114 Cd	10.19	2.038	ppb	0.42	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	58.45	11.69	ppb	1.03	1000.	
120 Sn	58.	11.6	ppb	0.82	#VALUE!	
121 Sb	11.89	2.378	ppb	2.79	#VALUE!	
123 Sb	11.69	2.338	ppb	2.54	1000.	
135 Ba	63.9	12.78	ppb	0.60	2000.	
137 Ba	65.05	13.01	ppb	0.81	#VALUE!	
182 W	54.55	10.91	ppb	1.51	1000.	
203 Tl	10.72	2.144	ppb	2.50	1000.	
205 Tl	10.625	2.125	ppb	3.35	#VALUE!	
208 Pb	11.41	2.282	ppb	1.93	2000.	
232 Th	12.745	2.549	ppb	6.86	1000.	
238 U	12.	2.4	ppb	0.89	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9676740.00	1.94	8477054.00	114.2	69.5 - 120	
45 Sc	3439132.80	0.15	2909174.30	118.2	69.5 - 120	
89 Y	3414257.30	0.57	3117971.30	109.5	69.5 - 120	
159 Tb	2774609.30	0.14	2784003.50	99.7	69.5 - 120	
209 Bi	1456030.80	0.69	1452804.80	100.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000176

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\138SMPL.D\138SMPL.D#
Date Acquired: Oct 12 2018 03:35 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9849-003S
Misc Info:
Vial Number: 3308
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	52.2	10.44	ppb	2.93	100.	
11 B	506.	101.2	ppb	1.31	1000.	
23 Na	10,550.	2,110.	ppb	0.68	200000.	
25 Mg	7,175.	1,435.	ppb	1.77	200000.	
27 Al	2,349.	469.8	ppb	1.23	200000.	
28 Si	7,295.	1,459.	ppb	0.98	#VALUE!	
29 Si	5,365.	1,073.	ppb	2.39	10000.	
39 K	15,770.	3,154.	ppb	1.70	200000.	
43 Ca	22,475.	4,495.	ppb	0.86	#VALUE!	
44 Ca	23,480.	4,696.	ppb	0.53	200000.	
51 V	538.5	107.7	ppb	1.28	1000.	
52 Cr	216.6	43.32	ppb	1.02	2000.	
53 Cr	304.05	60.81	ppb	2.83	#VALUE!	
55 Mn	531.5	106.3	ppb	0.93	2000.	
56 Fe	1,277.	255.4	ppb	2.26	#VALUE!	
57 Fe	1,510.	302.	ppb	2.72	100000.	
59 Co	523.	104.6	ppb	0.63	1000.	
60 Ni	491.1	98.22	ppb	2.34	1000.	
63 Cu	255.35	51.07	ppb	2.61	#VALUE!	
65 Cu	250.45	50.09	ppb	2.32	2000.	
66 Zn	426.75	85.35	ppb	1.98	2000.	
68 Zn	548.5	109.7	ppb	2.73	#VALUE!	
75 As	94.65	18.93	ppb	1.06	1000.	
82 Se	91.65	18.33	ppb	3.49	1000.	
88 Sr	631.	126.2	ppb	0.21	2000.	
98 Mo	96.1	19.22	ppb	2.57	1000.	
107 Ag	49.52	9.904	ppb	1.91	100.	
109 Ag	49.255	9.851	ppb	1.00	#VALUE!	
111 Cd	231.45	46.29	ppb	2.26	#VALUE!	
114 Cd	231.5	46.3	ppb	1.83	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	526.	105.2	ppb	2.25	1000.	
120 Sn	521.	104.2	ppb	2.35	#VALUE!	
121 Sb	103.6	20.72	ppb	2.90	#VALUE!	
123 Sb	102.25	20.45	ppb	3.25	1000.	
135 Ba	2,193.	438.6	ppb	2.02	2000.	
137 Ba	2,177.5	435.5	ppb	0.20	#VALUE!	
182 W	99.15	19.83	ppb	2.68	1000.	
203 Tl	97.75	19.55	ppb	1.48	1000.	
205 Tl	95.9	19.18	ppb	2.38	#VALUE!	
208 Pb	96.8	19.36	ppb	2.13	2000.	
232 Th	104.	20.8	ppb	0.25	1000.	
238 U	109.7	21.94	ppb	1.82	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9984968.00	2.19	8477054.00	117.8	69.5 - 120	
45 Sc	3406987.50	0.53	2909174.30	117.1	69.5 - 120	
89 Y	3394034.00	0.53	3117971.30	108.9	69.5 - 120	
159 Tb	2771888.50	0.37	2784003.50	99.6	69.5 - 120	
209 Bi	1447664.00	0.50	1452804.80	99.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000177

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\139SMPL.D\139SMPL.D#
Date Acquired: Oct 12 2018 03:39 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9849-003P
Misc Info:
Vial Number: 3309
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	50.9	10.18	ppb	3.92	100.	
11 B	502.5	100.5	ppb	0.34	1000.	
23 Na	10,560.	2,112.	ppb	0.63	200000.	
25 Mg	7,150.	1,430.	ppb	0.52	200000.	
27 Al	2,296.	459.2	ppb	0.73	200000.	
28 Si	7,480.	1,496.	ppb	0.89	#VALUE!	
29 Si	5,625.	1,125.	ppb	2.37	10000.	
39 K	16,165.	3,233.	ppb	1.07	200000.	
43 Ca	23,575.	4,715.	ppb	1.26	#VALUE!	
44 Ca	24,350.	4,870.	ppb	0.35	200000.	
51 V	537.	107.4	ppb	1.48	1000.	
52 Cr	214.25	42.85	ppb	2.64	2000.	
53 Cr	294.7	58.94	ppb	3.65	#VALUE!	
55 Mn	530.5	106.1	ppb	1.89	2000.	
56 Fe	1,263.	252.6	ppb	3.61	#VALUE!	
57 Fe	1,488.	297.6	ppb	7.43	100000.	
59 Co	525.	105.	ppb	1.99	1000.	
60 Ni	485.25	97.05	ppb	2.55	1000.	
63 Cu	251.05	50.21	ppb	3.09	#VALUE!	
65 Cu	248.3	49.66	ppb	3.14	2000.	
66 Zn	428.	85.6	ppb	2.65	2000.	
68 Zn	541.5	108.3	ppb	2.20	#VALUE!	
75 As	94.65	18.93	ppb	1.52	1000.	
82 Se	94.45	18.89	ppb	1.97	1000.	
88 Sr	632.	126.4	ppb	0.81	2000.	
98 Mo	95.65	19.13	ppb	2.96	1000.	
107 Ag	48.52	9.704	ppb	3.28	100.	
109 Ag	49.16	9.832	ppb	2.98	#VALUE!	
111 Cd	230.	46.	ppb	2.66	#VALUE!	
114 Cd	229.1	45.82	ppb	2.86	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	519.	103.8	ppb	1.87	1000.	
120 Sn	516.	103.2	ppb	1.90	#VALUE!	
121 Sb	100.05	20.01	ppb	1.74	#VALUE!	
123 Sb	100.75	20.15	ppb	1.81	1000.	
135 Ba	2,170.5	434.1	ppb	1.08	2000.	
137 Ba	2,175.5	435.1	ppb	0.14	#VALUE!	
182 W	98.5	19.7	ppb	1.07	1000.	
203 Tl	96.25	19.25	ppb	2.97	1000.	
205 Tl	95.15	19.03	ppb	2.97	#VALUE!	
208 Pb	96.2	19.24	ppb	2.24	2000.	
232 Th	104.9	20.98	ppb	1.45	1000.	
238 U	109.25	21.85	ppb	1.95	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	10166296.00	1.67	8477054.00	119.9	69.5 - 120	
45 Sc	3415460.80	0.64	2909174.30	117.4	69.5 - 120	
89 Y	3391330.00	1.20	3117971.30	108.8	69.5 - 120	
159 Tb	2765596.80	0.16	2784003.50	99.3	69.5 - 120	
209 Bi	1437710.50	1.82	1452804.80	99.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000178

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\140SMPL.D\140SMPL.D#
Date Acquired: Oct 12 2018 03:43 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9849-004
Misc Info:
Vial Number: 3310
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.033	0.0066	ppb	16.57	100.	
11 B	32.715	6.543	ppb	1.62	1000.	
23 Na	1,445.	289.	ppb	1.45	200000.	
25 Mg	1,957.5	391.5	ppb	1.22	200000.	
27 Al	251.95	50.39	ppb	2.24	200000.	
28 Si	8,095.	1,619.	ppb	2.08	#VALUE!	
29 Si	6,080.	1,216.	ppb	4.79	10000.	
39 K	8,015.	1,603.	ppb	1.70	200000.	
43 Ca	20,890.	4,178.	ppb	2.99	#VALUE!	
44 Ca	21,810.	4,362.	ppb	0.79	200000.	
51 V	0.2302	0.046	ppb	866.85	1000.	
52 Cr	1.7895	0.3579	ppb	16.99	2000.	
53 Cr	74.05	14.81	ppb	3.27	#VALUE!	
55 Mn	3.4935	0.6987	ppb	1.72	2000.	
56 Fe	235.5	47.1	ppb	5.31	#VALUE!	
57 Fe	448.1	89.62	ppb	8.77	100000.	
59 Co	0.2727	0.0545	ppb	10.34	1000.	
60 Ni	3.4495	0.6899	ppb	4.55	1000.	
63 Cu	8.	1.6	ppb	1.62	#VALUE!	
65 Cu	5.91	1.182	ppb	4.03	2000.	
66 Zn	11.915	2.383	ppb	5.27	2000.	
68 Zn	17.225	3.445	ppb	3.45	#VALUE!	
75 As	-0.0757	-0.0151	ppb	1522.10	1000.	
82 Se	-0.4499	-0.09	ppb	768.06	1000.	
88 Sr	91.25	18.25	ppb	1.05	2000.	
98 Mo	0.614	0.1228	ppb	11.12	1000.	
107 Ag	0.0097	0.0019	ppb	128.62	100.	
109 Ag	-0.0202	-0.004	ppb	19.19	#VALUE!	
111 Cd	0.335	0.067	ppb	108.16	#VALUE!	
114 Cd	0.0856	0.0171	ppb	20.15	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.5665	0.1133	ppb	3.17	1000.	
120 Sn	0.532	0.1064	ppb	10.77	#VALUE!	
121 Sb	0.3227	0.0645	ppb	7.97	#VALUE!	
123 Sb	0.3652	0.073	ppb	8.35	1000.	
135 Ba	46.105	9.221	ppb	2.24	2000.	
137 Ba	48.28	9.656	ppb	0.43	#VALUE!	
182 W	0.1254	0.0251	ppb	27.89	1000.	
203 Tl	0.0149	0.003	ppb	128.84	1000.	
205 Tl	0.0112	0.0022	ppb	85.61	#VALUE!	
208 Pb	0.2828	0.0566	ppb	7.09	2000.	
232 Th	1.557	0.3114	ppb	46.24	1000.	
238 U	0.1377	0.0275	ppb	16.91	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9816596.00	0.53	8477054.00	115.8	69.5 - 120	
45 Sc	3433059.80	1.10	2909174.30	118.0	69.5 - 120	
89 Y	3424309.00	0.95	3117971.30	109.8	69.5 - 120	
159 Tb	2785486.00	0.21	2784003.50	100.1	69.5 - 120	
209 Bi	1471455.50	0.46	1452804.80	101.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000179

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\141SMPL.D\141SMPL.D#
Date Acquired: Oct 12 2018 03:47 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9849-005
Misc Info:
Vial Number: 3311
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0109	0.0022	ppb	76.46	100.	
11 B	10.965	2.193	ppb	2.84	1000.	
23 Na	289.95	57.99	ppb	4.51	200000.	
25 Mg	9.82	1.964	ppb	8.93	200000.	
27 Al	9.73	1.946	ppb	7.89	200000.	
28 Si	638.	127.6	ppb	6.62	#VALUE!	
29 Si	-711.	-142.2	ppb	16.77	10000.	LOW
39 K	22.45	4.49	ppb	20.44	200000.	
43 Ca	103.1	20.62	ppb	28.19	#VALUE!	
44 Ca	65.95	13.19	ppb	11.12	200000.	
51 V	-0.2049	-0.041	ppb	212.84	1000.	
52 Cr	1.714	0.3428	ppb	4.24	2000.	
53 Cr	74.4	14.88	ppb	3.71	#VALUE!	
55 Mn	0.4424	0.0885	ppb	9.22	2000.	
56 Fe	59.25	11.85	ppb	12.28	#VALUE!	
57 Fe	56.55	11.31	ppb	34.39	100000.	
59 Co	0.0511	0.0102	ppb	25.71	1000.	
60 Ni	2.173	0.4346	ppb	4.62	1000.	
63 Cu	3.6795	0.7359	ppb	0.85	#VALUE!	
65 Cu	1.7975	0.3595	ppb	4.94	2000.	
66 Zn	9.75	1.95	ppb	6.69	2000.	
68 Zn	13.645	2.729	ppb	14.76	#VALUE!	
75 As	-1.5905	-0.3181	ppb	54.04	1000.	
82 Se	-3.1575	-0.6315	ppb	84.39	1000.	
88 Sr	0.773	0.1546	ppb	9.34	2000.	
98 Mo	-0.003	-0.0006	ppb	395.19	1000.	
107 Ag	-0.0069	-0.0014	ppb	473.70	100.	
109 Ag	0.0254	0.0051	ppb	92.51	#VALUE!	
111 Cd	0.3436	0.0687	ppb	114.00	#VALUE!	
114 Cd	0.0018	0.0004	ppb	5533.70	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.924	0.3848	ppb	9.10	1000.	
120 Sn	1.7675	0.3535	ppb	1.29	#VALUE!	
121 Sb	0.0917	0.0183	ppb	12.29	#VALUE!	
123 Sb	0.1127	0.0225	ppb	36.27	1000.	
135 Ba	0.3028	0.0606	ppb	9.40	2000.	
137 Ba	0.3507	0.0701	ppb	17.85	#VALUE!	
182 W	0.0368	0.0074	ppb	111.11	1000.	
203 Tl	0.0128	0.0026	ppb	35.35	1000.	
205 Tl	0.0064	0.0013	ppb	150.08	#VALUE!	
208 Pb	0.1067	0.0213	ppb	12.83	2000.	
232 Th	0.538	0.1076	ppb	9.80	1000.	
238 U	-0.0013	-0.0003	ppb	321.40	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	10050892.00	1.02	8477054.00	118.6	69.5 - 120	
45 Sc	3390771.50	0.82	2909174.30	116.6	69.5 - 120	
89 Y	3402763.00	0.81	3117971.30	109.1	69.5 - 120	
159 Tb	2750012.30	0.48	2784003.50	98.8	69.5 - 120	
209 Bi	1449659.50	0.45	1452804.80	99.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000180

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\142SMPL.D\142SMPL.D#
Date Acquired: Oct 12 2018 03:51 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL9853-001
Misc Info:
Vial Number: 3312
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0127	0.0025	ppb	49.66	100.	
11 B	10.285	2.057	ppb	3.19	1000.	
23 Na	6,130.	1,226.	ppb	1.89	200000.	
25 Mg	754.5	150.9	ppb	1.82	200000.	
27 Al	50.4	10.08	ppb	3.69	200000.	
28 Si	727.5	145.5	ppb	16.17	#VALUE!	
29 Si	-353.65	-70.73	ppb	55.37	10000.	
39 K	298.1	59.62	ppb	3.30	200000.	
43 Ca	302.75	60.55	ppb	5.60	#VALUE!	
44 Ca	276.75	55.35	ppb	5.17	200000.	
51 V	-0.1848	-0.037	ppb	931.53	1000.	
52 Cr	5.335	1.067	ppb	18.56	2000.	
53 Cr	74.	14.8	ppb	7.61	#VALUE!	
55 Mn	6.96	1.392	ppb	2.54	2000.	
56 Fe	105.35	21.07	ppb	8.01	#VALUE!	
57 Fe	130.2	26.04	ppb	1.50	100000.	
59 Co	0.1751	0.035	ppb	15.19	1000.	
60 Ni	13.55	2.71	ppb	1.16	1000.	
63 Cu	3.596	0.7192	ppb	2.90	#VALUE!	
65 Cu	1.803	0.3606	ppb	6.45	2000.	
66 Zn	7.655	1.531	ppb	6.09	2000.	
68 Zn	11.735	2.347	ppb	17.46	#VALUE!	
75 As	-0.2007	-0.0401	ppb	703.96	1000.	
82 Se	-2.346	-0.4692	ppb	50.90	1000.	
88 Sr	5.075	1.015	ppb	1.97	2000.	
98 Mo	0.0774	0.0155	ppb	34.72	1000.	
107 Ag	0.0099	0.002	ppb	179.08	100.	
109 Ag	-0.005	-0.001	ppb	374.70	#VALUE!	
111 Cd	0.4296	0.0859	ppb	16.03	#VALUE!	
114 Cd	0.0878	0.0176	ppb	58.52	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.3348	0.067	ppb	35.98	1000.	
120 Sn	0.3803	0.0761	ppb	25.15	#VALUE!	
121 Sb	0.082	0.0164	ppb	17.01	#VALUE!	
123 Sb	0.1097	0.0219	ppb	40.34	1000.	
135 Ba	0.6225	0.1245	ppb	21.84	2000.	
137 Ba	0.692	0.1384	ppb	23.17	#VALUE!	
182 W	0.0546	0.0109	ppb	35.98	1000.	
203 Tl	0.0223	0.0045	ppb	98.10	1000.	
205 Tl	0.0028	0.0006	ppb	286.77	#VALUE!	
208 Pb	0.3487	0.0697	ppb	2.69	2000.	
232 Th	0.3444	0.0689	ppb	12.62	1000.	
238 U	0.0012	0.0002	ppb	166.25	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9816120.00	1.22	8477054.00	115.8	69.5 - 120	
45 Sc	3366028.50	1.29	2909174.30	115.7	69.5 - 120	
89 Y	3399275.30	0.58	3117971.30	109.0	69.5 - 120	
159 Tb	2763753.50	0.51	2784003.50	99.3	69.5 - 120	
209 Bi	1474852.10	0.31	1452804.80	101.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000181

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\143SMPL.D\143SMPL.D#
Date Acquired: Oct 12 2018 03:55 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 3401
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0017	0.0017	ppb	13.10	100.	
11 B	0.4249	0.4249	ppb	23.26	1000.	
23 Na	32.88	32.88	ppb	0.31	200000.	
25 Mg	0.3601	0.3601	ppb	12.84	200000.	
27 Al	0.658	0.658	ppb	7.47	200000.	
28 Si	144.6	144.6	ppb	10.13	#VALUE!	
29 Si	-44.87	-44.87	ppb	59.64	10000.	
39 K	5.774	5.774	ppb	15.35	200000.	
43 Ca	-5.497	-5.497	ppb	46.04	#VALUE!	
44 Ca	-11.25	-11.25	ppb	16.76	200000.	
51 V	-0.1537	-0.1537	ppb	37.67	1000.	
52 Cr	-0.1269	-0.1269	ppb	26.61	2000.	
53 Cr	-7.125	-7.125	ppb	4.10	#VALUE!	
55 Mn	0.0063	0.0063	ppb	97.67	2000.	
56 Fe	10.14	10.14	ppb	17.80	#VALUE!	
57 Fe	13.29	13.29	ppb	11.26	100000.	
59 Co	0.0024	0.0024	ppb	20.26	1000.	
60 Ni	0.179	0.179	ppb	8.09	1000.	
63 Cu	0.3257	0.3257	ppb	5.53	#VALUE!	
65 Cu	0.0885	0.0885	ppb	30.76	2000.	
66 Zn	-0.0005	-0.0005	ppb	5189.90	2000.	
68 Zn	1.398	1.398	ppb	20.42	#VALUE!	
75 As	-0.3334	-0.3334	ppb	26.14	1000.	
82 Se	-0.7279	-0.7279	ppb	18.85	1000.	
88 Sr	0.0076	0.0076	ppb	38.26	2000.	
98 Mo	-0.002	-0.002	ppb	56.60	1000.	
107 Ag	-0.002	-0.002	ppb	248.89	100.	
109 Ag	-0.0015	-0.0015	ppb	365.53	#VALUE!	
111 Cd	0.1726	0.1726	ppb	29.05	#VALUE!	
114 Cd	0.	0.	ppb	88156.00	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.012	0.012	ppb	55.72	1000.	
120 Sn	0.0097	0.0097	ppb	68.53	#VALUE!	
121 Sb	0.0036	0.0036	ppb	44.69	#VALUE!	
123 Sb	0.0049	0.0049	ppb	43.42	1000.	
135 Ba	0.	0.	ppb	45069.00	2000.	
137 Ba	0.0028	0.0028	ppb	172.25	#VALUE!	
182 W	0.0045	0.0045	ppb	33.76	1000.	
203 Tl	0.0049	0.0049	ppb	79.79	1000.	
205 Tl	0.0011	0.0011	ppb	164.32	#VALUE!	
208 Pb	0.0038	0.0038	ppb	42.99	2000.	
232 Th	0.0186	0.0186	ppb	15.66	1000.	
238 U	-0.0002	-0.0002	ppb	354.95	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9802748.00	2.00	8477054.00	115.6	69.5 - 120	
45 Sc	3357957.80	0.28	2909174.30	115.4	69.5 - 120	
89 Y	3349272.30	0.65	3117971.30	107.4	69.5 - 120	
159 Tb	2781112.30	0.78	2784003.50	99.9	69.5 - 120	
209 Bi	1485241.00	1.38	1452804.80	102.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000182

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\144SMPL.D\144SMPL.D#
Date Acquired: Oct 12 2018 03:59 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 3402
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0022	0.0022	ppb	44.71	100.	
11 B	0.4454	0.4454	ppb	16.76	1000.	
23 Na	32.98	32.98	ppb	2.48	200000.	
25 Mg	0.3226	0.3226	ppb	15.44	200000.	
27 Al	0.7869	0.7869	ppb	8.26	200000.	
28 Si	131.3	131.3	ppb	8.51	#VALUE!	
29 Si	-83.15	-83.15	ppb	40.27	10000.	
39 K	5.445	5.445	ppb	33.96	200000.	
43 Ca	-10.32	-10.32	ppb	17.80	#VALUE!	
44 Ca	-10.97	-10.97	ppb	7.41	200000.	
51 V	-0.1481	-0.1481	ppb	39.31	1000.	
52 Cr	-0.1591	-0.1591	ppb	18.23	2000.	
53 Cr	-7.646	-7.646	ppb	4.55	#VALUE!	
55 Mn	0.0059	0.0059	ppb	76.36	2000.	
56 Fe	11.48	11.48	ppb	7.62	#VALUE!	
57 Fe	12.28	12.28	ppb	18.89	100000.	
59 Co	0.002	0.002	ppb	226.20	1000.	
60 Ni	0.1692	0.1692	ppb	7.68	1000.	
63 Cu	0.3017	0.3017	ppb	5.40	#VALUE!	
65 Cu	0.0861	0.0861	ppb	16.11	2000.	
66 Zn	0.0329	0.0329	ppb	188.19	2000.	
68 Zn	1.323	1.323	ppb	37.67	#VALUE!	
75 As	-0.2226	-0.2226	ppb	128.62	1000.	
82 Se	-0.8045	-0.8045	ppb	102.88	1000.	
88 Sr	0.0022	0.0022	ppb	360.73	2000.	
98 Mo	-0.0035	-0.0035	ppb	139.80	1000.	
107 Ag	0.0037	0.0037	ppb	131.42	100.	
109 Ag	0.0016	0.0016	ppb	121.26	#VALUE!	
111 Cd	0.1758	0.1758	ppb	18.18	#VALUE!	
114 Cd	0.0002	0.0002	ppb	5397.60	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0056	0.0056	ppb	270.81	1000.	
120 Sn	0.0119	0.0119	ppb	30.06	#VALUE!	
121 Sb	0.0077	0.0077	ppb	35.39	#VALUE!	
123 Sb	0.0124	0.0124	ppb	80.94	1000.	
135 Ba	0.0126	0.0126	ppb	61.81	2000.	
137 Ba	0.0184	0.0184	ppb	51.32	#VALUE!	
182 W	0.0046	0.0046	ppb	42.37	1000.	
203 Tl	0.005	0.005	ppb	2.28	1000.	
205 Tl	0.0012	0.0012	ppb	215.05	#VALUE!	
208 Pb	0.0047	0.0047	ppb	116.46	2000.	
232 Th	0.0145	0.0145	ppb	13.59	1000.	
238 U	-0.0013	-0.0013	ppb	29.58	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9838270.00	0.53	8477054.00	116.1	69.5 - 120	
45 Sc	3355282.00	1.18	2909174.30	115.3	69.5 - 120	
89 Y	3343104.00	1.33	3117971.30	107.2	69.5 - 120	
159 Tb	2758413.00	1.46	2784003.50	99.1	69.5 - 120	
209 Bi	1466222.30	1.25	1452804.80	100.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000183

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\145_CCV.D\145_CCV.D#
Date Acquired: Oct 12 2018 04:04 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.99	ppb	0.79	25	99.96	
11 B	23.44	ppb	0.63	25	93.76	
23 Na	4,968.	ppb	0.83	5,000	99.36	
25 Mg	4,940.	ppb	0.49	5,000	98.8	
27 Al	498.5	ppb	0.62	500	99.7	
28 Si	632.6	ppb	1.38	500	126.52	
29 Si	397.7	ppb	8.28	500	79.54	Fail
39 K	5,102.	ppb	0.68	5,000	102.04	
43 Ca	4,845.	ppb	0.49	5,000	96.9	
44 Ca	5,095.	ppb	0.79	5,000	101.9	
51 V	26.53	ppb	1.28	25	106.12	
52 Cr	26.15	ppb	1.19	25	104.6	
53 Cr	20.48	ppb	3.21	25	81.92	
55 Mn	26.88	ppb	0.75	25	107.52	
56 Fe	5,179.	ppb	1.07	5,000	103.58	
57 Fe	5,274.	ppb	1.50	5,000	105.48	
59 Co	25.56	ppb	0.88	25	102.24	
60 Ni	24.54	ppb	1.23	25	98.16	
63 Cu	24.05	ppb	1.22	25	96.2	
65 Cu	23.07	ppb	3.20	25	92.28	
66 Zn	19.82	ppb	1.92	25	79.28	Fail
68 Zn	21.22	ppb	1.96	25	84.88	
75 As	22.85	ppb	4.19	25	91.4	
82 Se	23.65	ppb	5.27	25	94.6	
88 Sr	25.94	ppb	0.59	25	103.76	
98 Mo	24.02	ppb	1.39	25	96.08	
107 Ag	23.93	ppb	1.25	25	95.72	
109 Ag	23.88	ppb	1.66	25	95.52	
111 Cd	23.56	ppb	1.97	25	94.24	
114 Cd	23.6	ppb	1.66	25	94.4	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.38	ppb	1.93	25	101.52	
120 Sn	25.18	ppb	1.57	25	100.72	
121 Sb	25.74	ppb	2.07	25	102.96	
123 Sb	25.58	ppb	1.56	25	102.32	
135 Ba	25.83	ppb	1.77	25	103.32	
137 Ba	25.82	ppb	1.02	25	103.28	
182 W	23.85	ppb	0.38	25	95.4	
203 Tl	23.66	ppb	1.79	25	94.64	
205 Tl	23.7	ppb	2.01	25	94.8	
208 Pb	23.55	ppb	2.25	25	94.2	
232 Th	25.49	ppb	2.59	25	101.96	
238 U	26.31	ppb	1.72	25	105.24	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9633792.00	1.05	8477054.00	113.6	80 - 120.4	
45 Sc	3335418.30	0.64	2909174.30	114.7	80 - 120.4	
89 Y	3301971.50	0.98	3117971.30	105.9	80 - 120.4	
159 Tb	2728106.50	0.97	2784003.50	98.0	80 - 120.4	
209 Bi	1422636.90	1.06	1452804.80	97.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000184

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\146_CCB.D\146_CCB.D#
Date Acquired: Oct 12 2018 04:08 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0021	ppb	7.05	1.00	
11 B	0.1532	ppb	51.56	1.00	
23 Na	30.69	ppb	0.79	1.00	
25 Mg	0.1928	ppb	11.71	1.00	
27 Al	0.0284	ppb	91.56	1.00	
28 Si	154.4	ppb	7.44	1.00	
29 Si	-12.82	ppb	355.15	1.00	
39 K	7.676	ppb	17.38	1.00	
43 Ca	-7.885	ppb	32.29	1.00	
44 Ca	-11.52	ppb	11.94	1.00	
51 V	-0.109	ppb	49.09	1.00	
52 Cr	-0.1573	ppb	7.87	1.00	
53 Cr	-8.647	ppb	4.65	1.00	
55 Mn	0.0083	ppb	89.89	1.00	
56 Fe	13.21	ppb	3.74	1.00	
57 Fe	15.61	ppb	9.80	1.00	
59 Co	0.0027	ppb	231.83	1.00	
60 Ni	0.2104	ppb	3.97	1.00	
63 Cu	0.2618	ppb	4.15	1.00	
65 Cu	0.0778	ppb	16.68	1.00	
66 Zn	0.0067	ppb	1468.60	1.00	
68 Zn	2.079	ppb	14.73	1.00	
75 As	-0.0029	ppb	3339.30	1.00	
82 Se	0.3491	ppb	130.25	1.00	
88 Sr	0.0082	ppb	69.77	1.00	
98 Mo	0.0071	ppb	70.51	1.00	
107 Ag	-0.0017	ppb	283.43	1.00	
109 Ag	0.0028	ppb	210.40	1.00	
111 Cd	0.1704	ppb	16.08	1.00	
114 Cd	0.0114	ppb	146.06	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0247	ppb	44.08	1.00	
120 Sn	0.0221	ppb	75.00	1.00	
121 Sb	0.0125	ppb	44.26	1.00	
123 Sb	0.0099	ppb	54.68	1.00	
135 Ba	-0.0028	ppb	518.53	1.00	
137 Ba	0.0057	ppb	78.27	1.00	
182 W	0.0341	ppb	23.50	1.00	
203 Tl	0.0102	ppb	17.99	1.00	
205 Tl	0.0038	ppb	66.46	1.00	
208 Pb	0.0075	ppb	41.91	1.00	
232 Th	0.1534	ppb	12.58	1.00	
238 U	0.0007	ppb	262.97	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9719294.00	1.32	8477054.00	114.7	79.5 - 120	
45 Sc	3304683.50	0.73	2909174.30	113.6	79.5 - 120	
89 Y	3274269.50	0.70	3117971.30	105.0	79.5 - 120	
159 Tb	2753497.00	0.91	2784003.50	98.9	79.5 - 120	
209 Bi	1458286.40	0.79	1452804.80	100.4	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000185

PQL QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\147_PQL.D\147_PQL.D#
Date Acquired: Oct 12 2018 04:12 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: PQL
Misc Info:
Vial Number: 1302
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Dilution Factor: 1.00
QC Range (%): 69.599998 - 130.4

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	0.193	ppb	3.17	0.20	96.5	
11 B	3.77	ppb	4.63	4.00	94.25	
23 Na	230.9	ppb	0.40	200.00	115.45	
25 Mg	20.67	ppb	0.30	20.00	103.35	
27 Al	21.39	ppb	1.79	20.00	106.95	
28 Si	229.2	ppb	5.58	100.00	229.2	
29 Si	16.28	ppb	261.06	100.00	16.28	Fail
39 K	211.5	ppb	0.61	200.00	105.75	
43 Ca	19.47	ppb	13.74	20.00	97.35	
44 Ca	17.33	ppb	5.58	20.00	86.65	
51 V	0.9181	ppb	9.29	1.00	91.81	
52 Cr	0.9748	ppb	1.64	1.00	97.48	
53 Cr	-6.772	ppb	5.05	---	#VALUE!	
55 Mn	0.5	ppb	4.52	0.40	125	Fail-DoD
56 Fe	36.41	ppb	9.67	20.00	182.05	
57 Fe	40.85	ppb	3.18	20.00	204.25	Fail
59 Co	0.2178	ppb	7.28	0.20	108.9	
60 Ni	0.619	ppb	3.90	0.40	154.75	Fail
63 Cu	0.9239	ppb	1.35	0.60	153.983	
65 Cu	0.7448	ppb	4.55	0.60	124.133	Fail-DoD
66 Zn	2.305	ppb	2.74	2.00	115.25	
68 Zn	3.925	ppb	1.08	2.00	196.25	
75 As	1.073	ppb	6.25	1.00	107.3	
82 Se	1.007	ppb	27.73	1.00	100.7	
88 Sr	1.14	ppb	4.84	1.00	114	
98 Mo	0.9838	ppb	1.17	1.00	98.38	
107 Ag	0.2026	ppb	7.09	0.20	101.3	
109 Ag	0.1952	ppb	3.76	0.20	97.6	
111 Cd	0.4559	ppb	11.35	0.20	227.95	
114 Cd	0.1864	ppb	11.87	0.20	93.2	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	1.089	ppb	3.00	1.00	108.9	
120 Sn	1.097	ppb	2.20	1.00	109.7	
121 Sb	0.2152	ppb	1.65	0.20	107.6	
123 Sb	0.2217	ppb	4.07	0.20	110.85	
135 Ba	0.4619	ppb	10.14	0.40	115.475	
137 Ba	0.4251	ppb	11.15	0.40	106.275	
182 W	0.9763	ppb	1.19	1.00	97.63	
203 Tl	0.218	ppb	2.21	0.20	109	
205 Tl	0.1964	ppb	10.44	0.20	98.2	
208 Pb	0.2092	ppb	2.87	0.20	104.6	
232 Th	0.2702	ppb	7.65	0.20	135.1	Fail
238 U	0.21	ppb	4.89	0.20	105	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	10031251.00	1.66	8477054.00	118.3	80 - 120.4	
45 Sc	3352228.30	0.79	2909174.30	115.2	80 - 120.4	
89 Y	3257537.80	0.91	3117971.30	104.5	80 - 120.4	
159 Tb	2740154.30	0.95	2784003.50	98.4	80 - 120.4	
209 Bi	1450056.30	0.71	1452804.80	99.8	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

4 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000186

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\148_CCV.D\148_CCV.D#
Date Acquired: Oct 12 2018 04:16 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.28	ppb	0.67	25	97.12	
11 B	22.6	ppb	1.51	25	90.4	
23 Na	5,013.	ppb	0.82	5,000	100.26	
25 Mg	4,912.	ppb	1.43	5,000	98.24	
27 Al	504.8	ppb	0.82	500	100.96	
28 Si	661.2	ppb	1.52	500	132.24	
29 Si	453.9	ppb	1.42	500	90.78	
39 K	5,154.	ppb	0.59	5,000	103.08	
43 Ca	4,820.	ppb	2.26	5,000	96.4	
44 Ca	5,102.	ppb	0.42	5,000	102.04	
51 V	26.5	ppb	1.30	25	106	
52 Cr	26.44	ppb	2.26	25	105.76	
53 Cr	21.52	ppb	7.50	25	86.08	
55 Mn	27.2	ppb	2.71	25	108.8	
56 Fe	5,206.	ppb	1.75	5,000	104.12	
57 Fe	5,330.	ppb	1.68	5,000	106.6	
59 Co	26.15	ppb	3.89	25	104.6	
60 Ni	24.43	ppb	3.32	25	97.72	
63 Cu	24.03	ppb	2.55	25	96.12	
65 Cu	23.5	ppb	3.76	25	94	
66 Zn	20.21	ppb	3.17	25	80.84	Fail
68 Zn	21.63	ppb	1.53	25	86.52	
75 As	23.07	ppb	1.41	25	92.28	
82 Se	23.58	ppb	0.38	25	94.32	
88 Sr	26.08	ppb	2.04	25	104.32	
98 Mo	24.27	ppb	2.28	25	97.08	
107 Ag	24.01	ppb	1.77	25	96.04	
109 Ag	24.24	ppb	2.94	25	96.96	
111 Cd	24.07	ppb	3.51	25	96.28	
114 Cd	23.91	ppb	2.54	25	95.64	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.3	ppb	2.02	25	101.2	
120 Sn	25.06	ppb	1.15	25	100.24	
121 Sb	25.71	ppb	2.00	25	102.84	
123 Sb	25.72	ppb	1.82	25	102.88	
135 Ba	25.74	ppb	1.00	25	102.96	
137 Ba	25.95	ppb	1.98	25	103.8	
182 W	23.74	ppb	1.45	25	94.96	
203 Tl	23.82	ppb	1.81	25	95.28	
205 Tl	23.65	ppb	2.27	25	94.6	
208 Pb	23.73	ppb	2.04	25	94.92	
232 Th	25.45	ppb	0.58	25	101.8	
238 U	26.39	ppb	1.35	25	105.56	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9740834.00	1.80	8477054.00	114.9	80 - 120.4	
45 Sc	3291959.00	0.31	2909174.30	113.2	80 - 120.4	
89 Y	3246456.50	0.54	3117971.30	104.1	80 - 120.4	
159 Tb	2710778.50	0.50	2784003.50	97.4	80 - 120.4	
209 Bi	1413005.30	0.57	1452804.80	97.3	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000187

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLJ11E.B\149_CCB.D\149_CCB.D#
Date Acquired: Oct 12 2018 04:20 am
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Oct 11 2018 07:12 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0026	ppb	35.10	1.00	
11 B	0.0422	ppb	207.06	1.00	
23 Na	25.75	ppb	3.28	1.00	
25 Mg	0.2149	ppb	2.53	1.00	
27 Al	-0.0253	ppb	81.88	1.00	
28 Si	160.7	ppb	21.48	1.00	
29 Si	-31.87	ppb	223.56	1.00	
39 K	8.111	ppb	18.42	1.00	
43 Ca	-6.024	ppb	49.97	1.00	
44 Ca	-9.118	ppb	15.56	1.00	
51 V	-0.1059	ppb	80.64	1.00	
52 Cr	-0.1367	ppb	31.51	1.00	
53 Cr	-8.618	ppb	5.24	1.00	
55 Mn	0.0075	ppb	116.03	1.00	
56 Fe	14.66	ppb	8.25	1.00	
57 Fe	17.92	ppb	23.28	1.00	
59 Co	0.0047	ppb	92.15	1.00	
60 Ni	0.1921	ppb	13.62	1.00	
63 Cu	0.2286	ppb	1.63	1.00	
65 Cu	0.0762	ppb	14.54	1.00	
66 Zn	0.0046	ppb	1754.10	1.00	
68 Zn	2.341	ppb	19.68	1.00	
75 As	-0.1326	ppb	150.53	1.00	
82 Se	-0.2638	ppb	166.22	1.00	
88 Sr	0.0107	ppb	20.91	1.00	
98 Mo	0.0084	ppb	56.14	1.00	
107 Ag	-0.0034	ppb	145.37	1.00	
109 Ag	0.0003	ppb	2966.00	1.00	
111 Cd	0.2045	ppb	19.76	1.00	
114 Cd	0.0129	ppb	53.82	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0278	ppb	39.19	1.00	
120 Sn	0.0355	ppb	45.06	1.00	
121 Sb	0.0176	ppb	32.93	1.00	
123 Sb	0.0167	ppb	49.62	1.00	
135 Ba	0.0135	ppb	128.95	1.00	
137 Ba	0.009	ppb	84.18	1.00	
182 W	0.0398	ppb	20.06	1.00	
203 Tl	0.0047	ppb	67.69	1.00	
205 Tl	0.0037	ppb	101.85	1.00	
208 Pb	-0.0015	ppb	62.54	1.00	
232 Th	0.1718	ppb	9.90	1.00	
238 U	0.002	ppb	55.97	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	9993157.00	2.81	8477054.00	117.9	79.5 - 120	
45 Sc	3289325.30	1.82	2909174.30	113.1	79.5 - 120	
89 Y	3242270.30	0.89	3117971.30	104.0	79.5 - 120	
159 Tb	2706865.30	0.85	2784003.50	97.2	79.5 - 120	
209 Bi	1430289.90	0.49	1452804.80	98.5	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLJ11E.B\014CALB.D\014CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000188

Logbooks and Supporting Documents

Katahdin Analytical Services, Inc.

Metals Preparation Benchsheet

Reagents and Consumables Information:

Method: 3010-MS

HNO3: MSR113 **HCL:** MSR115 **Digestion Vessels:** 180531

1:1 HNO3: MR2133 **1:1 HCL:** ~~MSR~~ MR2134 AMJ 10-9-18

REVIEWED MD 10/9/18 KATAHDIN ANALYTICAL METALS SECTION

Pipet **LCS/Spiking Information:**

M11 CLPP-SPK-1 (ID/Vol): MS2124 / 0.05 mL

M15 CLPP-SPK-INT1 (ID/Vol): MW18089 / 0.5 mL

M15 CLPP-SPK-INT2 (ID/Vol): MW18090 / 0.5 mL

____ _____ Spike (ID/Vol): NA / _____ mL

Heat Source ID : E

Start Time: 0849 **/Temp.** 95 °C

End Time: 1553 **/Temp.** 93 °C

Thermometer ID/Pos: AIC24 / 16.7

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LCSWLJ09IMW1	LJ09IMW1	0.05	L	0.05	L	AQ	IM	AMJ	10/09/2018	
PBWLJ09IMW1	LJ09IMW1		L		L	AQ	IM	AMJ	10/09/2018	
SL9735-001	LJ09IMW1		L		L	AQ	IM	AMJ	10/09/2018	D
SL9735-002	LJ09IMW1		L		L	AQ	IM	AMJ	10/09/2018	
SL9735-003	LJ09IMW1		L		L	AQ	IM	AMJ	10/09/2018	
SL9735-004	LJ09IMW1		L		L	AQ	IM	AMJ	10/09/2018	
SL9735-005	LJ09IMW1		L		L	AQ	IM	AMJ	10/09/2018	
SL9735-006	LJ09IMW1		L		L	AQ	IM	AMJ	10/09/2018	
SL9735-007	LJ09IMW1		L		L	AQ	IM	AMJ	10/09/2018	
SL9735-007P	LJ09IMW1		L		L	AQ	IM	AMJ	10/09/2018	
SL9735-007S	LJ09IMW1		L		L	AQ	IM	AMJ	10/09/2018	
SL9735-008	LJ09IMW1		L		L	AQ	IM	AMJ	10/09/2018	D

MD 10/9/18

CONVENTIONAL AND PHYSICAL ANALYTICAL DATA

QC Summary Section

Quality Control Report

Blank Sample Summary Report

Solids-Nonfilterable Residue

Samp Type	QC Batch	Anal. Method	Anal. Date	Prep. Date	Result	PQL
MBLANK	WG238231	SM 2540 D	09-OCT-18	08-OCT-18	U 3 mg/L	4 mg/L

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Quality Control Report

Laboratory Control Sample Summary Report

Solids-Nonfilterable Residue

Lab Sample Id	Samp Type	QC Batch	Analysis Date	Prep Date	Units	Spike Amt.	Result	Recovery	Acceptance Range	RPD
WG238231-2	LCS	WG238231	09-OCT-18	08-OCT-18	mg/L	1000	880	88	80-120	

Quality Control Report

Duplicate Sample Summary Report

Solids-Nonfilterable Residue

Duplicate Sample ID	Original Sample ID	QC Batch	Analysis Date	Result Units	Sample Result	Duplicate Result	RPD(%)	RPD Limit
WG238231-5	SL9735-7	WG238231	09-OCT-18	mg/L	U 4.0	U 4.0	NC	10

Sample Data Section

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL "U" LOQ or "U" LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level (PQL) or LOQ could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

H_ Please note that the regulatory holding time for _____ is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H1 - pH H2 - DO H3 - sulfite H4 - residual chlorine

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

M1 The matrix spike and/or matrix spike duplicate recovery performed on this sample was outside of the laboratory acceptance criteria. Sample matrix is suspected. The laboratory criteria was met for the Laboratory Control Sample (LCS) analyzed concurrently with this sample.

M2 The matrix spike and/or matrix spike duplicate recovery was outside of the laboratory acceptance criteria. The native sample concentration is greater than four times the spike added concentration so the spike added could not be distinguished from the native sample concentration.

R1 The relative percent difference (RPD) between the duplicate analyses performed on this sample was outside of the laboratory acceptance criteria (when both values are greater than ten times the PQL).

MCL	Maximum Contaminant Level	NL	No limit
NFL	No Free Liquid Present	FLP	Free Liquid Present
NOD	No Odor Detected	TON	Threshold Odor Number

D-1 As required by Method 5210B, APHA Standard Methods for the Examination of Water and Wastewater (21st edition), the BOD value reported for this sample is 'qualified' because the check standard run concurrently with the sample analysis did not meet the criteria specified in the method (198 +/- 30.5 mg/L). These results may not be reportable for compliance purposes.

D-2 The measured final dissolved oxygen concentrations of all dilutions were less than the method-specified limit of 1 mg/L. The reported BOD result was calculated assuming a final oxygen concentration equal to 1 mg/L. The reported value should be considered a minimum value.

D-3 The dilution water used to prepare this sample did not meet the method and/or regulatory criteria of less than 0.2 or 0.4 mg/L dissolved oxygen (DO) uptake over the five day period of incubation. These results may not be reportable for compliance purposes.

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: William Humphries
AECOM
Two City Center
Portland,ME 04101

Lab Sample ID: SL9735-1
Report Date: 05-NOV-18
Client PO: non-PO;TO:0010,PN:60565200
Project: New Bedford Harbor
SDG: SL9735

Sample Description	Matrix	Date Sampled	Date Received
MW01-100418	AQ	04-OCT-18 11:00:00	05-OCT-18

Parameter	Result	Adj PQL	Adj MDL	Anal. Method	QC Batch	Analysis Date	Prep. Method	Prep. Date	Analyst	Footnotes	RPD/RSD
Solids-Nonfilterable Residue	8.0 mg/L	4.0	1.22	SM 2540D	WG238231	09-OCT-18 16:12:00	SM 2540D	08-OCT-18	SC		

Report of Analytical Results

Client: William Humphries
AECOM
Two City Center
Portland,ME 04101

Lab Sample ID: SL9735-2
Report Date: 05-NOV-18
Client PO: non-PO;TO:0010,PN:60565200
Project: New Bedford Harbor
SDG: SL9735

Sample Description	Matrix	Date Sampled	Date Received
MW03-100318	AQ	03-OCT-18 17:00:00	05-OCT-18

Parameter	Result	Adj PQL	Adj MDL	Anal. Method	QC Batch	Analysis Date	Prep. Method	Prep. Date	Analyst	Footnotes	RPD/RSD
Solids-Nonfilterable Residue	15. mg/L	4.0	1.22	SM 2540D	WG238231	09-OCT-18 16:12:00	SM 2540D	08-OCT-18	SC		

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: William Humphries
AECOM
Two City Center
Portland,ME 04101

Lab Sample ID: SL9735-3
Report Date: 05-NOV-18
Client PO: non-PO;TO:0010,PN:60565200
Project: New Bedford Harbor
SDG: SL9735

Sample Description	Matrix	Date Sampled	Date Received
MW04A-100318	AQ	03-OCT-18 13:20:00	05-OCT-18

Parameter	Result	Adj PQL	Adj MDL	Anal. Method	QC Batch	Analysis Date	Prep. Method	Prep. Date	Analyst	Footnotes	RPD/RSD
Solids-Nonfilterable Residue	5.6 mg/L	4.0	1.22	SM 2540D	WG238231	09-OCT-18 16:12:00	SM 2540D	08-OCT-18	SC		

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: William Humphries
AECOM
Two City Center
Portland,ME 04101

Lab Sample ID: SL9735-4
Report Date: 05-NOV-18
Client PO: non-PO;TO:0010,PN:60565200
Project: New Bedford Harbor
SDG: SL9735

Sample Description	Matrix	Date Sampled	Date Received
MW05-100318	AQ	03-OCT-18 14:00:00	05-OCT-18

Parameter	Result	Adj PQL	Adj MDL	Anal. Method	QC Batch	Analysis Date	Prep. Method	Prep. Date	Analyst	Footnotes	RPD/RSD
Solids-Nonfilterable Residue	4.8 mg/L	4.0	1.22	SM 2540D	WG238231	09-OCT-18 16:12:00	SM 2540D	08-OCT-18	SC		

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: William Humphries
AECOM
Two City Center
Portland,ME 04101

Lab Sample ID: SL9735-5
Report Date: 05-NOV-18
Client PO: non-PO;TO:0010,PN:60565200
Project: New Bedford Harbor
SDG: SL9735

Sample Description	Matrix	Date Sampled	Date Received
MW05-100318-REP	AQ	03-OCT-18 14:10:00	05-OCT-18

Parameter	Result	Adj PQL	Adj MDL	Anal. Method	QC Batch	Analysis Date	Prep. Method	Prep. Date	Analyst	Footnotes	RPD/RSD
Solids-Nonfilterable Residue	4.8 mg/L	4.0	1.22	SM 2540D	WG238231	09-OCT-18 16:12:00	SM 2540D	08-OCT-18	SC		

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: William Humphries
AECOM
Two City Center
Portland,ME 04101

Lab Sample ID: SL9735-6
Report Date: 05-NOV-18
Client PO: non-PO;TO:0010,PN:60565200
Project: New Bedford Harbor
SDG: SL9735

Sample Description	Matrix	Date Sampled	Date Received
MW06-100418	AQ	04-OCT-18 10:15:00	05-OCT-18

Parameter	Result	Adj PQL	Adj MDL	Anal. Method	QC Batch	Analysis Date	Prep. Method	Prep. Date	Analyst	Footnotes	RPD/RSD
Solids-Nonfilterable Residue	12. mg/L	4.0	1.22	SM 2540D	WG238231	09-OCT-18 16:12:00	SM 2540D	08-OCT-18	SC		

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: William Humphries
AECOM
Two City Center
Portland,ME 04101

Lab Sample ID: SL9735-7
Report Date: 05-NOV-18
Client PO: non-PO;TO:0010,PN:60565200
Project: New Bedford Harbor
SDG: SL9735

Sample Description	Matrix	Date Sampled	Date Received
MW07A-100318	AQ	03-OCT-18 12:05:00	05-OCT-18

Parameter	Result	Adj PQL	Adj MDL	Anal. Method	QC Batch	Analysis Date	Prep. Method	Prep. Date	Analyst	Footnotes	RPD/RSD
Solids-Nonfilterable Residue	U4.0 mg/L	4.0	1.22	SM 2540D	WG238231	09-OCT-18 16:12:00	SM 2540D	08-OCT-18	SC		

Raw Data Section

WET CHEMISTRY BATCH REPORT
Oct 11 2018, 09:37 am
Batch: WG238231

Parameter: Solids-Nonfilterable Residue

Prep Date: 08-OCT-18

Date Analyzed: 09-OCT-18

Prep Method: SM 2540D

Analyst Initials: SC

Prep Chemist: SC

Sample	Samp Type	Method	Tare Amt.	Initial Amt.	Final Amt.	Rpt. DF	Result	Rpt Result	TS(%)	PQL	MDL	Adj PQL	RPD	%Rec
SL9593-1	SAMP	SM 2540D	0.1223000g		0.1886000g	1.4	368.33333	370 mg/L	100	4	1.22	5.6		
SL9593-2	SAMP	SM 2540D	0.1247000g		0.1448000g	1	80.4	80. mg/L	100	4	1.22	4.0		
SL9593-3	SAMP	SM 2540D	0.1238000g		0.1299000g	1	24.4	24. mg/L	100	4	1.22	4.0		
SL9593-4	SAMP	SM 2540D	0.1226000g		0.1233000g	1	2.8	U4.0 mg/L	100	4	1.22	4.0		
SL9716-4	SAMP	SM 2540D	0.1244000g		0.1250000g	1	2.4	U4.0 mg/L	NA	4	1.22	4.0		
SL9716-5	SAMP	SM 2540D	0.1239000g		0.1237000g	1	-.8	U4.0 mg/L	NA	4	1.22	4.0		
SL9716-6	SAMP	SM 2540D	0.1245000g		0.1244000g	1	-.4	U4.0 mg/L	NA	4	1.22	4.0		
SL9716-7	SAMP	SM 2540D	0.1254000g		0.1256000g	1	.8	U4.0 mg/L	NA	4	1.22	4.0		
SL9725-1	SAMP	SM 2540D	0.1234000g		0.1391000g	3.7	234.32836	230 mg/L	NA	4	1.22	15.		
SL9735-1	SAMP	SM 2540D	0.1232000g		0.1252000g	1	8	8.0 mg/L	NA	4	1.22	4.0		
SL9735-2	SAMP	SM 2540D	0.1249000g		0.1287000g	1	15.2	15. mg/L	NA	4	1.22	4.0		
SL9735-3	SAMP	SM 2540D	0.1232000g		0.1246000g	1	5.6	5.6 mg/L	NA	4	1.22	4.0		
SL9735-4	SAMP	SM 2540D	0.1234000g		0.1246000g	1	4.8	4.8 mg/L	NA	4	1.22	4.0		
SL9735-5	SAMP	SM 2540D	0.1229000g		0.1241000g	1	4.8	4.8 mg/L	NA	4	1.22	4.0		
SL9735-6	SAMP	SM 2540D	0.1253000g		0.1284000g	1	12.4	12. mg/L	NA	4	1.22	4.0		
SL9735-7	SAMP	SM 2540D	0.1252000g		0.1254000g	1	.8	U4.0 mg/L	NA	4	1.22	4.0		
WG238231-1	MBLANK	SM 2540D	0.1244000g		0.1243000g	.25	-.1	U3 mg/L	NA	4	1.22	4		
WG238231-2	LCS	SM 2540D	0.1246000g		0.2124000g	2.5	878	880 mg/L	NA	4	1.22	10.		88
WG238231-3	DUP	SM 2540D	0.1243000g		0.1250000g	1	2.8	U4.0 mg/L	NA	4	1.22	4.0	NC	
WG238231-4	DUP	SM 2540D	0.1238000g		0.1240000g	1	.8	U4.0 mg/L	NA	4	1.22	4.0	NC	
WG238231-5	DUP	SM 2540D	0.1243000g		0.1248000g	1	2	U4.0 mg/L	NA	4	1.22	4.0	NC	

Comments:

SL9735-7	MS/MSD
WG238231-1	SL9716-4
WG238231-2	SL9716-4
WG238231-3	SL9716-4
WG238231-4	SL9716-5
WG238231-5	SL9735-7

Entered by: SC Date: 10-11-18 Accepted by: [signature] Date: 10/11/18 ✓

WET CHEMISTRY BATCH REPORT
Oct 11 2018, 09:28 am
Batch: WG238232

Parameter: Solids-Nonfilterable Residue

Prep Date: 08-OCT-18

Date Analyzed: 09-OCT-18

Prep Method: SM 2540D

Analyst Initials: SC

Prep Chemist: SC

Sample	Samp Type	Method	Tare Amt.	Initial Amt.	Final Amt.	Rpt. DF	Result	Rpt Result	TS(%)	PQL	MDL	Adj PQL	RPD	%Rec
SL9594-1	SAMP	SM 2540D	0.1257000g		0.1256000g	1	-.1	U2.5 mg/L	NA	2.5	1.2	2.5		
SL9594-2	SAMP	SM 2540D	0.1251000g		0.1310000g	3.8	22.69231	23. mg/L	NA	2.5	1.2	9.5		
SL9729-1	SAMP	SM 2540D	0.1247000g		0.1273000g	2	5.2	5.2 mg/L	NA	2.5	1.2	5.0		
WG238232-1	MBLANK	SM 2540D	0.1244000g		0.1243000g	1	-.1	U1.2 mg/L	NA	2.5	1.2	2.5		
WG238232-2	LCS	SM 2540D	0.1246000g		0.2124000g	10	878	880 mg/L	NA	2.5	1.2	25.		88

Comments:

WG238232-1 SL9594-1
WG238232-2 SL9594-1

Entered by: SC Date: 10-11-18 Accepted by: [signature] Date: 10/11/18

WG1238231 R490879

WG1238232 R490880

KATAHDIN ANALYTICAL SERVICES, LLC

TOTAL DISSOLVED SOLIDS/TOTAL SUSPENDED SOLIDS

Total Disolved Solids: EPA 160.1____ Total Dissolved Solids: SM 2540C____ PQL: 10mg/L

Total Suspended Solids: EPA 160.2____ Total Suspended Solids: SM 2540D ✓ PQL: 4mg/L

Aqueous Solids LCS Sand ID/Lot# W168540 Filter Lot # 6000318-8239-R1

ASTM Class Weights

Balance ID: Bal.01

True WT (g)	Initial WT (g)	Final WT (g)
0.1000	0.0998	0.1000
1.0000	0.9996	0.9995
10.0000	9.9997	10.0003
100.0000	99.9997	99.9999

Notes:

* Full volume used

Oven Temperatures (C)

TDS: 180 +/- 2°C, TSS: 103 - 105 °C

Oven ID:

In Temp. 104	Date: 10-8-18	Time: 0800
Out Temp. 104	Date: 10-9-18	Time: 0840
In Temp. 104	Date: ↓	Time: 0915
Out Temp. 103	Date: ↓	Time: 1420
In Temp.	Date:	Time:
Out Temp.	Date:	Time:

KAS Sample ID	Sample Volume (ml)	Time of Initial Aliquot	Filter or Dish ID	Filter or Dish Wt. (g)	Dry 1 Dish/Filter + Sample Residue Wt. (g)	Dry 2 Dish/Filter + Sample Residue Wt. (g)	Time of Final Weighing (Analysis)
Blank	1000	1415	H925M	0.1244	0.1242	0.1243	1612
LCS	100		N	0.1246	0.2123	0.2124	
SL9716-4	250		P	0.1244	0.1249	0.1250	
-4RP			Q	0.1243	0.1250	0.1250	
-5			R	0.1239	0.1239	0.1237	
-5RP			S	0.1238	0.1237	0.1240	
-6			T	0.1245	0.1246	0.1244	
-7			U	0.1254	0.1254	0.1256	
SL9725-1	67		V	0.1234	0.1394	0.1391	
SL9735-1	250		W	0.1232	0.1254	0.1252	
-2	250		H912H	0.1249	0.1289	0.1287	
-3			I	0.1232	0.1245	0.1246	
-4			J	0.1234	0.1243	0.1246	
-5			K	0.1229	0.1239	0.1241	
-6			L	0.1253	0.1284	0.1284	
-7			M	0.1252	0.1251	0.1254	
-7RP			N	0.1243	0.1247	0.1248	
SL9594-1	1000		P	0.1257	0.1259	0.1256	
SL9594-2	260		Q	0.1251	0.1301	0.1310	
SL9729-1	500*		R	0.1247	0.1269	0.1273	
SL9593-1	180		S	0.1223	0.1883	0.1886	
SL9593-2	250		T	0.1247	0.1446	0.1448	
-3	250		U	0.1238	0.1297	0.1299	
-4	250	1600	V	0.1226	0.1283	0.1233	1023

Analyst: SC | SS Date: 10-8-18

Checked By: Date: 10/11/18

Attachment D

Validation Report

AECOM
250 Apollo Drive
Chelmsford, MA 01824

978.905.2100 tel
978.905.2101 fax

Memorandum

To	William Humphries
CC	Maura Surprenant
Subject	New Bedford Harbor Superfund Site Data Validation, New Bedford, MA
Lab SDG Number/Lab	SL9735
Laboratory	Katahdin, Scarborough, ME
From	Charlene Livingston Flint/AECOM Reviewer: Mary Kozik/AECOM
Date	1/29/2019

Enclosed is the final validation report for the sample delivery group (SDG) listed below.

SDG #	Fraction	Date Sampled
SL9735	PCB Aroclors by GC/ECD SW8082A VOC by GC/MS by ICP-MS SW8260B Metals (Cd, Cr, Cu, Pb) by ICPMS / SW6020A TSS SM2540D	9/28/2018, 10/03/2018, 10/04/2018

The data validation was performed at Tier I Stage 2A level using the following guidelines, as applicable to each method:

- EPA New England Environmental Data Review Supplement for Regional Data Review Elements and Superfund Specific Guidance/Procedures, April 2013
- EPA Contract Laboratory Program National Functional Guidelines for Organic Superfund Methods Data Review, January 2017

Data Validation Report

Project Name	New Bedford Harbor
Task Order Number	W912WJ17F0021
Collection Date	9/28/2018, 10/03/2018, 10/04/2018
Matrix	Aqueous
Parameter(s)	PCB Aroclors by GC/ECD SW8082A VOC by GC/MS by ICP-MS SW8260B Metals (Cd, Cr, Cu, Pb) by ICPMS/SW6020A TSS SM2540D
Validation Level	USEPA Region I Tier I Stage 2A Data Validation

Laboratory	Katahdin, Scarborough, Maine
Validator	C. Livingston Flint
Report Date	1/29/2019
Sample Delivery Group (SDG)	SL9735

Sample Identification		
Sample ID	**Lab ID**	**Matrix/Sample Type**
MW01-100418	SL9735-1	Aqueous/ VOCs, Metals, TSS, PCBs
MW03-100318	SL9735-2	Aqueous/ VOCs, Metals, TSS, PCBs
MW04A-100318	SL9735-3	Aqueous/ VOCs, Metals, TSS, PCBs
MW05-100318	SL9735-4	Aqueous/ VOCs, Metals, TSS, PCBs
MW05-100318-REP	SL9735-5	Aqueous/ VOCs, Metals, TSS, PCBs
MW06-100418	SL9735-6	Aqueous/ VOCs, Metals, TSS, PCBs
MW07A-100318	SL9735-7	Aqueous/ VOCs, Metals, TSS, PCBs
EB-001-100318	SL9735-8	Aqueous/ VOCs, Metals, PCBs
TB-001-092818	SL9735-9	Aqueous/ VOCs

Introduction

- This data review covers the SDG and parameters listed above. The data validation was performed using EPA New England Environmental Data Review Supplement for Regional Data Review Elements and Superfund Specific Guidance/Procedures (April 2013), EPA Contract Laboratory Program National Functional Guidelines for Organic Superfund Methods Data Review, January 2017, EPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review, January 2017 and criteria listed in the task order QAPP. The data qualification summary details any data validation qualifiers that were assigned during the validation process.

The following data validation qualifiers are defined for the purpose of this report:

U	Indicates the compound or analyte was analyzed for but not detected at or above the stated limit
J	Indicates an estimated value
J+	Indicates an estimated value that may be biased high
J-	Indicates an estimated value that may be biased low
UJ	Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value
R	Quality control data indicates the data are not usable
EB	An analyte that was identified in an aqueous equipment blank (EB) that was used to assess field contamination associated with soil/sediment samples.

Data Qualification Summary

Selected data points were estimated due to nonconformances of certain QC criteria. Qualified sample results are presented below.

Sample ID(s)	Lab ID	Compound(s)	Flag	Reason
MW01-100418	SL9735-001	Lead	J	Blank contamination
MW01-100418	SL9735-001	Chromium	U	Blank contamination
MW01-100418	SL9735-001	Copper	U	Blank contamination
MW03-100318	SL9735-002	Lead	U	Blank contamination
MW03-100318	SL9735-002	Chromium	U	Blank contamination
MW03-100318	SL9735-002	Copper	U	Blank contamination
MW04A-100318	SL9735-003	Lead	J	Blank contamination
MW04A-100318	SL9735-003	Chromium	U	Blank contamination
MW04A-100318	SL9735-003	Copper	J	Blank contamination
MW05-100318	SL9735-004	Lead	U	Blank contamination
MW05-100318	SL9735-004	Chromium	U	Blank contamination
MW05-100318	SL9735-004	Copper	U	Blank contamination
MW05-100318-REP	SL9735-005	Lead	U	Blank contamination
MW05-100318-REP	SL9735-005	Chromium	U	Blank contamination
MW05-100318-REP	SL9735-005	Copper	U	Blank contamination
MW06-100418	SL9735-006	Lead	U	Blank contamination
MW06-100418	SL9735-006	Chromium	U	Blank contamination
MW06-100418	SL9735-006	Copper	U	Blank contamination
MW07A-100318	SL9735-007	Lead	U	Blank contamination
MW07A-100318	SL9735-007	Chromium	U	Blank contamination
MW07A-100318	SL9735-007	Copper	J	Blank contamination
EB-001-100318	SL9735-008	Lead	U	Blank contamination
EB-001-100318	SL9735-008	Chromium	U	Blank contamination
EB-001-100318	SL9735-008	Copper	U	Blank contamination
MW01-100418	SL9735-1RE	Aroclor 1260	U	Equipment blank contamination
MW04A-100318	SL9735-3RE	Aroclor 1260	U	Equipment blank contamination
MW05-100318	SL9735-4RE	Aroclor 1260	U	Equipment blank contamination
MW06-100418	SL9735-6RE	Aroclor 1260	U	Equipment blank contamination
MW07A-100318	SL9735-7RE	Aroclor 1260	U	Equipment blank contamination
EB-001-100318	SL9735-8RE	Aroclor 1260	J+	LCS recoveries

Dilutions - Metals Analysis

Sample	Lab ID	Dilution
MW01-100418	SL9735-01	5X
MW03-100318	SL9735-002	5X
MW04A-100318	SL9735-003	5X
MW05-100318	SL9735-004	5X
MW05-100318-REP	SL9735-005	5X
MW06-100418	SL9735-006	5X
MW07A-100318	SL9735-007	5X
EB-001-100318	SL9735-008	5X

VOC Data Validation Checklist

Matrix:	Aqueous	**Analysis:**	VOC
Reviewed by:	C. Livingston Flint	**Date:**	1/17/2019

QC Parameter	Present Y/N	Acceptance Criteria	Data Usable?	Comments
TIER I Stage 1				
Data Package Complete	Y	Completeness checklist elements included	Y	
Sample Receipt Conditions; Holding Time	Y	≤6°C not preserved 7 days; ≤6°C preserved 14 days (NFG)	Y	Cooler temps: 1.2°C, 1.8°C and 0.7°C
TIER I Stage 2A (plus Tier I Stage 1)				
Method Blank	Y	Acetone, 2-Butanone, & Methylene Chloride ≤ 2 x RL; all other Target Analytes < RL		MB WG238427-2 ND
Laboratory Control Sample/Laboratory Control Sample Duplicate	Y	% Recovery within Lab limits; RPD ≤20% (QAPP)	Y	LCS WG238427-1: Dichlorodifluoromethane (165%) and chloromethane (130%) exceeded the lab QC %R criteria. SR results ND. No qualifications made.
Surrogate Recovery	Y	% Recovery within Lab limits (QAPP)	Y	QC criteria met
Internal Standards	Y	Per sample, -50% to +100% of area counts of initial calibration Level 3 standard	Y	QC criteria met
TIER 1+ (plus Tier 1 Stage 2A)[1][2]				
Field/Equipment Blank (EB)	Y	Target Analytes <RL (QAPP)	Y	EB-001-100318 (SL9735-8) reported toluene>MDL but <RL. All associated SR were ND for toluene; no qualifications made.
Trip Blank (TB)	Y	Target Analytes <RL (QAPP)	Y	TB-001-092818 (SL9735-9) ND
Field Duplicate (FD)	Y	Relative Percent Difference ≤30% for aqueous (QAPP)	Y	FD pair MW05-100318 (SL9735-4) and MW05-100318-REP (SL9735-5); criteria not met for carbon disulfide (64.9% RPD) one result ND the other <2XSQL. No qualifications made.

[1] Shaded validation tiers are not applicable for this project.
[2] The DO#10 QAPP specifies validation of EB, FD, TB, MS/MSD, and IB results be validated as part of Tier I Stage 2A validation.

QC Parameter	Present Y/N	Acceptance Criteria	Data Usable?	Comments
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	Y	% Recovery within Lab limits; RPD ≤20% (QAPP)	Y	MS/MSD: performed on sample MW07A-100318 (SL9735-7) had several compounds exceeded the QC %R limits. SRs were ND for these compounds; therefore no qualifications made. Trans 1,2-dichloroethene exceeded the %RPD limits. SRs ND. No qualifications made.
TIER II (plus Tier 1 Stage 2A)				
BFB Tune		Samples analyzed within 12 hours of the BFB tune and all tune criteria were met.		
Initial Calibration Standard (ICAL)		Minimum RRF, (varies) %RSD (varies) (NFG)		
Initial Calibration Verification (ICV)		Varies, (20-40%D) (NFG)		
Continuing Calibration Standard (CCV)		≤20% %D		
Recalculation checks (5%)				

Metals Data Validation Checklist

Matrix:	Aqueous	**Analysis:**	Metals
Reviewed by:	C. Livingston Flint	**Date:**	1/17/2019

QC Parameter	Present Y/N	Acceptance Criteria	Data Usable?	Comments
TIER I Stage 1				
Data Package Complete	Y	Completeness checklist elements included	Y	
Sample Receipt Conditions; Holding Time	Y	180 days, preserved to pH≤2 (with nitric acid) (NFG)	Y	Cooler temps: 1.2°C, 1.8°C and 0.7°C
TIER I Stage 2A (plus Tier I Stage 1)				
Method Blank	Y	Target Analytes<Reporting limit	Y	**MB PBWLJ09IMW1: reported lead, chromium and copper at concentrations >MDL but <RL. See table below**
Laboratory Control Sample/Laboratory Control Sample Duplicate	Y	80-120% Recovery (QAPP)	Y	QC criteria met
Interference Check sample A and B (ICSA & ICSAB)	Y	80-120% R (QAPP)	Y	QC criteria met
ICP Serial Dilution	Y	± 10% agreement between 1:5 dilution and undiluted sample for results > 50x MDL (QAPP)	Y	QC criteria met
Post Digestion Spike (PDS)	Y	80-120% R (QAPP)	Y	QC criteria met
Internal Standards	NA	70-120% R (QAPP)	NA	

QC Parameter	Present Y/N	Acceptance Criteria	Data Usable?	Comments
TIER 1+ (plus Tier 1 Stage 2A)[3][4]				
Field/Equipment Blank (EB)	Y	Target Analytes<Reporting limit	Y	Sample EB-001-100318 (SL9735-08) reported lead, chromium and copper at concentrations <RL. Sample was negated due to MB contamination. No additional qualifications made.
Field Duplicate (FD)	Y	Relative Percent Difference ≤30% for aqueous, (QAPP)	Y	FD pair MW05-100318 (SL9735-4) and MW05-100318-REP (SL9735-5); Sample was negated due to MB contamination. No additional qualifications made.
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	Y	75-125% Recovery (for compounds spiked at a concentration >5x background); RPD ≤20% (QAPP)	Y	MS/MSD: performed on sample MW07A-100318 (SL9735-7). QC criteria met
Laboratory Duplicate	NA	RPD ≤20% for results ≥5X RL (based on QAPP MS/MSD precision)	NA	
TIER II (plus Tier 1 Stage 2A)				
ICP/MS Instrument tuning	NA	ICP instrument tuned prior to calibration. Analyzed or scanned minimum 5x consecutively, Resolution of mass calibration within 0.1 u, %RSD >5%		
Instrument calibration (ICAL)	NA	Blank + 5 stds, r≥ 0.995		
Initial Calibration Verification (ICV)	NA	90-110% (NFG)		
Continuing Calibration Standard (CCV)	NA	90-110% (NFG)		
Initial Calibration Blank (ICB)/ Continuing Calibration Blank (CCB)	NA	Target Analytes<Reporting limit		
Recalculation checks (5%)	NA			

[3] Shaded validation tiers are not applicable for this project.
[4] The DO#10 QAPP specifies validation of EB, FD, TB, MS/MSD, and IB results be validated as part of Tier I Stage 2A validation.

Qualification Summary - Method Blank

Aqueous Method Blank PBWLJ09IMW1	(ug/l)	3x MB (ug/l)	10x MB (ug/l)	Actions	Associated samples
Chromium	1.9	5.7	19	Negate, <3x MB	All samples
Copper	1.1	3.3	11	Estimate (J)	SL9375-03 and SL9735-07
Copper	1.1	3.3	11	Negate, <3x MB	All samples except for SL9375-03 and SL9735-07
Lead	0.2	0.6	2	Negate, <3x MB	All samples except for SL9735-01 and SL9735-03
Lead	0.2	0.6	2	Estimate (J)	SL9735-01 and SL9735-03

Total Suspended Solids-Data Validation Checklist

Matrix:	Aqueous	**Analysis:**	TSS
Reviewed by:	C. Livingston Flint	**Date:**	1/17/2019

QC Parameter	Present Y/N	Acceptance Criteria	Data Usable?	Comments
TIER I Stage 1				
Data Package Complete	Y	Completeness checklist elements included	Y	
Sample Receipt Conditions; Holding Time	Y	7 days from date of sampling days to analysis (QAPP Appendix C)	Y	Cooler temps:1.2°C, 1.8°C and 0.7°C
TIER I Stage 2A (plus Tier I Stage 1)				
Method Blank	Y	Target Analytes<Reporting limit (QAPP)	Y	MB: WG238231 ND
Laboratory Control Sample/Laboratory Control Sample Duplicate	Y	80-120% Recovery (QAPP)	Y	QC criteria met
TIER 1+ (plus Tier 1 Stage 2A)[5][6]				
Field/Equipment Blank (EB)	NA	Not required (QAPP)	NA	
Field Duplicate (FD)	NA	Relative Percent Difference, ≤30% (QAPP)	NA	
Laboratory Duplicates	Y	RPD ≤5% (QAPP)	Y	QC criteria met

[5] Shaded validation tiers are not applicable for this project.
[6] The DO#10 QAPP specifies validation of EB, FD, TB, MS/MSD, and IB results be validated as part of Tier I Stage 2A validation.

PCB Aroclor Data Validation Checklist

Matrix:	Aqueous	**Analysis:**	PCB Aroclor
Reviewed by:	C. Livingston Flint	**Date:**	1/29/2019

QC Parameter	Present Y/N	Acceptance Criteria	Data Usable?	Comments
TIER I Stage 1				
Data Package Complete	Y	Completeness checklist elements included	Y	
Sample Receipt Conditions; Holding Time	Y	Ice, 4°C ± 2°C 14 days (1 year if cold or frozen per QAPP) to extraction; 40 days to analysis	Y	Note: within the one year hold time for cold samples. Cooler temps 1.2^0C, 1.8^0C and 0.7^0C.
TIER I Stage 2A (plus Tier I Stage 1)				
Method Blank	Y	<Reporting limit Aqueous: Lab RL 0.025ug/L PQL 0.050 ug/L	Y	MB for batch WG245126 -1 ND
Laboratory Control Sample/Laboratory Control Sample Duplicate	Y	Aroclor-1016 (60-122%) Aroclor-1260 (53-122%) (QAPP)	Y	**WG245126 -3: Aroclor 1260 %R high (195%) Estimate (J+) positive results.**
Surrogate Recovery	Y	TCX 62-111 % DCB 44-135 % Recovery (lab limits)	Y	DCB surrogate for sample MW03-100318 (SL9735-2RE) was below QC limits (42.6% R). TCX recovery met QC limit. No qualifications made. TCX in samples MW07A-100318 (SL9735-7RE) (column B) (113% R), MB WG245126-1 (both A and B column) (114% and 121%R) and MS WG245126-4 (column B) (113% R), exceeded the QC limits. DCB met QC criteria. No qualifications made.
Standard Reference Material SRM NIST 1944	NA	40-140% Recovery (QAPP)	NA	
Internal Standards	NA	Per sample, -50% to +100% of area counts of initial calibration Level 3 standard	NA	

QC Parameter	Present Y/N	Acceptance Criteria	Data Usable?	Comments
TIER 1+ (plus Tier 1 Stage 2A)[7][8]				
Field/Equipment Blank (EB)	Y	<Reporting limit (PQL 0.50 ug/l)	Y	EB: sample EB-001-100318 (SL9735-8) reported Aroclor 1260 at a concentration greater than the QL. **Samples SL9735-1RE, -3RE, -4RE, -6RE and -7RE reported results <QL. Negate at the QL.** Samples Sl9735-2RE and -5RE were ND. No qualifications made.
Field Duplicate (FD)	Y	Relative Percent Difference ≤50% for soil/sed, ≤30% for aqueous, ≤50% soil/sed (QAPP)	Y	FD pair MW05-100318 (SL9735-4) and MW05-100318-REP (SL9735-5); Aroclor 1260 was reported in sample SL9735-4RE at a concentration >QL. Aroclor 1260 was not reported in FD SL9735-5RE. No qualifications made as one SR ND and the other <2XQL.
Percent Solids		Percent solids is <50%		
Sulfur Cleanup		Sulfur clean-up performed; sulfur co-elution does not interfere with peak integration.		
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	Y	Aroclor-1016 (60-122%) Aroclor-1260 (53-122%) (lab limits) RPD ≤30% (QAPP)	Y	MS/MSD: performed on sample MW07A-100318 (SL9735-7). Aroclor 1016 exceeded the %R for the MS (126%) and MSD (122%). SR ND. No qualifications made.
TIER II (plus Tier 1 Stage 2A)				
Initial Calibration Standard (ICAL)		Coefficient of Determination >0.995 based on linear curve fit		
Independent Calibration Check (ICC)		≤25% %D		
Continuing Calibration Standard (CCV)		≤25% %D		
Recalculation checks (5%)				

Additional Comments:

The data package includes	7 Field samples	2 Field blanks and	0 Media blanks

[7] Shaded validation tiers are not applicable for this project.
[8] The DO#10 QAPP specifies validation of EB, FD, TB, MS/MSD, and IB results be validated as part of Tier I Stage 2A validation.

Data Completeness

QAPP Worksheet #34: Laboratory Data Completeness

Y/N	Completeness Criteria
Y	Title sheet identifying laboratory name, location, contact information
Y	Authorization statement and dated signature
Y	Analytical case narrative (i.e., data quality report)
Y	Sample identification table
Y	Method summary
Y	Sample results including date and time of analysis, (metric units, dry weight basis for sediment)
Y	QC results and acceptance criteria
Y	Signed COC forms