



January 31, 2020

1413.001.02

Washington Department of Ecology
Northwest Regional Office Toxics Control Program
3190 – 160th Ave. SE
Bellevue, WA 98008-5452
Attn: Ms. Tamara Cardona

BY EMAIL ONLY

**GROUNDWATER AND SOIL VAPOR DATA SUMMARY, FOURTH QUARTER 2019
AMERICAN LINEN SUPPLY CO-DEXTER AVE SITE
AGREED ORDER NO. DE 14302**

Dear Ms. Cardona:

PES Environmental, Inc. (“PES”) has prepared this data submittal on behalf of BMR-Dexter LLC (“BMRD”) for the American Linen Supply Co–Dexter Avenue Site (the “Site”) located at 700 Dexter Avenue North, Seattle, Washington. This submittal documents the fourth quarter 2019 sampling of monitoring wells at the Site, including remedial investigation (“RI”) monitoring wells and interim action performance monitoring wells at the 700 Dexter Avenue North property (the “Property”). Consistent with the Final Remedial Investigation/Feasibility Study Work Plan¹, Final Interim Action Work Plan (“IAWP”)², and the Final Contingent Action Addendum (“CAA”) to the Final IAWP³, PES measured groundwater levels, collected groundwater samples, and collected soil vapor samples during the quarter to document the chlorinated volatile organic compound (“CVOC”) concentrations in groundwater and soil vapor. This technical memorandum summarizes the procedures and results of the fourth quarter monitoring event.

Interim action and construction activities were being performed on the Property concurrently with the groundwater monitoring event, including active construction dewatering, soil excavation, exporting of soil generated during construction activities, installation of injection and monitoring wells in the bottom of the excavation, installation of the foundation waterproofing and vapor barrier system, and installation of portions of the building foundation. RI monitoring wells (MW-301 through MW-329, except for MW-321, which was not installed) were installed in September and were included in the fourth quarter monitoring event. CAA monitoring wells (MW-165 through MW-190) were installed in September and October and were also included in the fourth quarter monitoring event.

¹ PES Environmental, Inc. 2019. *Final Remedial Investigation/Feasibility Study Work Plan, American Linen Supply Co-Dexter Avenue Site, 700 Dexter Avenue North, Seattle, Washington.* December 4.

² PES Environmental, Inc. 2018. *Final Interim Action Work Plan, American Linen Supply Co-Dexter Avenue Site, 700 Dexter Avenue North, Seattle, Washington.* Prepared for BMR-Dexter LLC. August.

³ PES Environmental, Inc. 2019. Letter from D. Balbiani and B. O’Neal to T. Cardona (Ecology) re: *Final Contingent Action Addendum to the Final Interim Action Work Plan, Former American Linen Supply Co-Dexter Ave Site, Agreed Order No. DE 14302.* February 14.

GROUNDWATER MONITORING PROCEDURES

PES measured one round of groundwater levels in all available monitoring wells (99 wells total) at the Site on October 21, 2019. PES collected groundwater samples from 88 monitoring wells outside of the Property, including 17 Shallow Zone wells, 24 Intermediate A Zone wells, 20 Intermediate B Zone wells, 27 Deep Zone wells. The 24 CAA monitoring wells installed on the Property between September 24 and October 26, 2019, were sampled during the fourth quarter 2019 event. Except as noted below, the wells were sampled between October 7 and November 14, 2019. Figure 1 shows the well and soil vapor probe locations. All wells in the IA and RI monitoring networks were sampled except for the following:

- Shallow Zone monitoring wells MW121, MW-159, MW-301, and R-MW6 were dry and therefore were not sampled; and
- Intermediate A Zone monitoring well MW-144 and Intermediate B Zone monitoring well MW-145 were damaged during construction-related activities and decommissioned in December 2019. Replacement wells MW-144R and MW-145R were installed November 26, 2019, developed between December 4 and 6, 2019, and sampled on December 16, 2019.

PES used an electronic water level probe to measure depth to groundwater in the wells, and either a peristaltic or bladder pump was used to purge and sample the wells. Wells were purged at pumping rates of 200 mL/min or less. One primary groundwater sample was collected from each monitoring well, with duplicate samples collected from FMW-141, MW105, MW120, MW126, MW128, and MW-329. Three equipment rinsate blanks and 28 trip blanks were also collected. All samples were shipped to Pace Analytical in Mount Juliet, Tennessee, for analysis of VOCs by Environmental Protection Agency (“EPA”) Method 8260C. Groundwater samples from wells near the Property were also analyzed for gasoline-range organics (“GRO”) by Washington State Department of Ecology (“Ecology”) Method NWTPH-Gx, and groundwater samples from a subset of wells across the Site were also analyzed for geochemical parameters as described in the Final IAWP and RI work plan. Groundwater sampling, sample analysis, and health and safety procedures were performed consistent with the Sampling and Analysis Plan, Quality Assurance/Quality Control Plan, and Health and Safety Plan provided in the Final IAWP.

VAPOR PROBE SAMPLING PROCEDURES

PES collected soil vapor samples on November 1, 2019, from two soil vapor probes (SV01 and SV02) located on the east side of 8th Avenue North across from the Property (Figure 1). PES unsuccessfully attempted to collect a soil vapor sample from soil vapor probe SV03 (located on the east side of 8th Avenue, south of SV02). PES suspects SV03 is damaged beyond repair. The soil vapor samples were collected in the vadose zone just above the groundwater capillary fringe, at depths ranging from 11.75 to 12.75 feet below ground surface (“bgs”), and analyzed for VOCs, including tetrachloroethene (“PCE”), trichloroethene (“TCE”), cis-1,2-dichloroethene (“cDCE”), trans-1,2-dichloroethene (“tDCE”), and vinyl chloride (“VC”). Soil vapor sampling, sample analysis, and health and safety procedures were performed consistent with the Sampling and Analysis Plan, Quality Assurance/Quality Control Plan, and Health and Safety Plan provided in the Final IAWP.

RESULTS

Groundwater Elevations and Flow Directions. Table 1 provides the October 21, 2019, depth to groundwater measurements and calculated groundwater elevations. Depth to groundwater varied from 8.6 feet bgs in SMW-3 to 46.5 feet bgs in MW-302, and groundwater elevations (relative to NAVD 88) ranged from 8.1 feet in MW107 to 31.7 feet in MW-305.

Figure 3 presents groundwater contours for the Shallow, Intermediate A, Intermediate B, and Deep Zones using data measured on October 21, 2019. The groundwater flow directions in the Shallow and Intermediate A Zones west of the alley between 8th and 9th Avenues North was primarily toward the Property, consistent with the effects of the construction dewatering at the Property boundary. The groundwater flow directions in the Shallow Zone and Intermediate A Zone east of the alley between 8th and 9th Avenues North were to the east-northeast, similar to the July 2019 groundwater level event. The groundwater flow direction in the Intermediate B Zone was toward the Property, consistent with the effects of Property construction dewatering. The groundwater flow direction in the Deep Zone was to the southeast. In locations with co-located wells in different zones, the vertical gradient was generally downward between the Shallow Zone and the Intermediate A Zone (highest gradient near the Property), generally downward between the Intermediate A and B Zones (upward at two locations near the Property), upward between the Intermediate B and Deep Zones near the Property, and downward between the Intermediate B and Deep Zones farther away from the Property.

A comparison of the March 2017, March 2019, and April 2019 groundwater elevation contours for the Shallow, Intermediate A, and Deep Zones indicates that the interim action activities did not significantly affect groundwater flow across the Site in these zones through the second quarter of 2019. Declining groundwater elevations in Shallow, Intermediate A, and Intermediate B Zone wells in the third and fourth quarter 2019, particularly near the Property (e.g., MW121, MW107, MW-146, and MW-156), and groundwater flow toward the Property in the Shallow, Intermediate A, and Intermediate B Zones in the fourth quarter 2019 both indicate that the construction dewatering at the Property has had a significant effect on groundwater flow directions.

Groundwater Analytical Results. Tables 3 through 8 provide the groundwater results for all wells monitored historically at the Site. Table 3 presents the field parameter measurements. Tables 4 through 7 provide the results for GRO; benzene, toluene, ethylbenzene, and total xylenes (“BTEX”); and PCE, TCE, cDCE, tDCE, and VC in the Shallow, Intermediate, and Deep Zones, and Property CAA monitoring wells, respectively. Table 8 presents the geochemical parameter results. Attachment A presents time-trend plots for the primary CVOCs (PCE, TCE, cDCE, and VC) in wells sampled at the Site. In the fourth quarter sampling event, the analytical laboratory reported all sample results to the method detection limit (“MDL”) to provide VC detection limits below the VC screening level. PES has reviewed the fourth quarter analytical reports to evaluate the laboratory’s performance in meeting EPA’s quality control criteria and has added data qualifiers as necessary. Attachment B provides the analytical laboratory reports and data validation memorandum. The data collected in the fourth quarter have been uploaded to Ecology’s Environmental Information Management database.

The following provides a brief overview of the fourth quarter 2019 groundwater analytical results:

1. **Shallow Zone Wells:** In the 17 sampled Shallow Zone wells, GRO, toluene, total xylenes, and tDCE were not detected above their respective screening levels in the fourth quarter 2019

sampling event. Benzene was detected above its screening level in MW-214, SCL-MW101, SCL-MW105, and SCS-2, and ethylbenzene was detected above its screening level in SCL-MW105 and SCS-2. PCE was detected above its screening level in MW-154 and MW-155, TCE and cDCE were detected above their respective screening levels in MW-155, and VC was detected above its screening level in MW-9 and MW-313. FMW-143, MW-8, MW125, MW-305, MW-310, MW-312, MW-320, R-MW5, and SMW-3 did not have detections of petroleum hydrocarbons or CVOCs above the screening levels.

2. **Intermediate A Zone Wells:** In the 24 sampled Intermediate A Zone wells, toluene, ethylbenzene, total xylenes, and tDCE were not detected above their respective screening levels in the fourth quarter 2019 sampling event. Benzene was detected above its screening level in MW108 and MW-308, and PCE, TCE, cDCE, and VC were detected above the screening levels in multiple wells. Following are the highest detected concentrations of the primary CVOCs:

- PCE: 1,180 µg/L in MW110;
- TCE: 498 µg/L in MW110;
- cDCE: 1,420 µg/L in MW-156; and
- VC: 2,830 µg/L in MW-146.

FMW-142, GEI-1, MW116, MW-302, MW-306, MW-315, MW-317, and MW-327 did not have detections of GRO, BTEX, or the five primary CVOCs above the MDLs.

3. **Intermediate B Zone Wells:** In the 20 sampled Intermediate B Zone wells, toluene, ethylbenzene, total xylenes, and tDCE were not detected above their respective screening levels in the fourth quarter 2019 sampling event. Benzene was detected above its screening level in MW-318 and MW-322, and PCE, TCE, cDCE, and VC were detected above the screening levels in multiple wells. Following are the highest detected concentrations of the primary CVOCs:

- PCE: 26.1 µg/L in MW-314;
- TCE: 106 µg/L in MW-314;
- cDCE: 2,510 µg/L in MW-143; and
- VC: 1,760 µg/L in FMW-141.

MW126 did not have detections of GRO, BTEX, or the five primary CVOCs above the MDLs.

4. **Deep Zone Wells:** In the 27 sampled Deep Zone wells, toluene, ethylbenzene, total xylenes, and tDCE were not detected above their respective screening levels in the fourth quarter 2019 sampling event. PCE was detected once above the screening level (FMW-129), and benzene, TCE, cDCE, and VC were detected above the screening levels in multiple wells. Following are the highest detected concentrations of the primary CVOCs:

- PCE: 114 µg/L in FMW-129;
- TCE: 198 µg/L in FMW-129;

- cDCE: 1,550 µg/L in MW-324; and
- VC: 189 µg/L in FMW-140.

MW102, MW106, MW123, MW124, MW-138, and MW-153 did not have detections of GRO, BTEX, or the five primary CVOCs above the MDLs.

5. **Property CAA Wells:** In the 24 CAA wells sampled for the first time during the fourth quarter, toluene, ethylbenzene, and total xylenes were not detected above their respective screening levels. Benzene was detected above its screening level in MW-177 and MW-181. PCE, TCE, cDCE, tDCE, and VC were detected above the screening levels in multiple wells. Following are the highest detected concentrations of the primary CVOCs:

- PCE: 8,810 µg/L in MW-172;
- TCE: 3,280 µg/L in MW-172;
- cDCE: 131,000 µg/L in MW-177;
- tDCE: 395J µg/L in MW-177
- VC: 11,000 µg/L in MW-177

GRO was also detected in groundwater samples at concentrations exceeding the screening level (Tables 4 through 7). Most of these screening level exceedances were qualified, however, as a result of the data quality review, which indicated that the GRO concentrations above the screening level in 12 wells (MW-143, MW-146, MW-156, MW-166, MW-170, MW-172, MW-177, MW-179, MW-181, MW-182, and MW-184) were likely due to the presence of CVOCs in the samples.

The geochemical parameter results presented in Tables 3 and 8 continue to indicate a subsurface geochemical environment near and east of the Property that is conducive to reductive dechlorination of CVOCs. The primary examples of these conditions include dissolved oxygen concentrations less than 0.5 mg/L, oxidation-reduction potential less than 50 millivolts, total organic carbon concentrations greater than 20 mg/L, and ethene/ethane concentrations greater than 0.01 mg/L. Notable wells with these conditions include:

- **Intermediate A Zone:** MW107 through MW110, MW-142, MW-144R, MW-146, MW-156, and MW-308;
- **Intermediate B Zone:** MW-143, MW-147, MW-157, and W-MW-02; and
- **Deep Zone:** GEI-2, MW104, MW105, MW113, MW128, MW-324, MW-328, and MW-329.

Most of the CAA monitoring wells completed in Treatment Zones A, B, and C on the Property also exhibited strong geochemical indicators of conditions conducive to reductive dechlorination, as did one Treatment Zone D monitoring well (MW-180).

Soil Vapor Analytical Results. Table 9 provides the analytical results for PCE, TCE, cDCE, tDCE, and VC. In November 2019, PCE was detected below the screening level in the field duplicate of SV01 and in SV02. PCE was previously detected in SV02 in March 2013. None of the other CVOCs

were detected above the laboratory reporting limit. All other results are consistent with the September 2018, February 2019, and April 2019 results.

Please call if you have any questions or comments regarding information included in this data submittal.

Sincerely,

PES ENVIRONMENTAL, INC.



Daniel A. Balbiani, P.E.
Principal Engineer



William R. Haldeman

William R. Haldeman, LHG, R.G.
Associate Hydrogeologist

cc: John Moshy, BMRD

Attachments

Table 1 – Summary of Site-Wide Groundwater Elevations, October 21, 2019

Table 2 – Summary of Property Groundwater Elevations, October 21, 2019

Table 3 – Groundwater Field Parameters

Table 4 – Groundwater Analytical Data for Shallow Zone Wells

Table 5 – Groundwater Analytical Data for Intermediate Zone Wells

Table 6 – Groundwater Analytical Data for Deep Zone Wells

Table 7 – Groundwater Analytical Data, Treatment Zone Monitoring Wells

Table 8 – Groundwater Geochemical Parameters

Table 9 – Soil Vapor Analytical Results

Figure 1 – Groundwater Monitoring Network

Figure 2 – Groundwater Elevation Contours, October 21, 2019

Attachment A – CVOC Time-Trend Plots

Attachment B – Laboratory Reports and Data Validation Memoranda

TABLES

Table 1

**Summary of Site-Wide Groundwater Elevations, October 21, 2019
American Linen Supply Co–Dexter Avenue Site
Seattle, Washington**

Sample Location	Property	Screen Interval (feet bgs)	Screen Interval Elevation (feet)	Top of Casing Elevation (feet)	Depth to Groundwater ^a	Groundwater Elevation ^b
Shallow Zone						
FMW-143	9th Ave N	23 to 28	10 to 5	32.69	14.88	17.81
MW-8	800 Aloha Street Parcel	4.5 to 19	28.7 to 14.2	33.19	12.46	20.73
MW-9	8th Avenue N ROW	7 to 22	33.8 to 18.8	40.74	20.77	19.97
MW121	8th Avenue N ROW	15 to 25	26.7 to 16.7	41.72	24.23	17.49
MW125	Valley Street ROW	15 to 30	28.6 to 13.6	43.55	27.26	16.29
MW-154	Roy Street ROW	25 to 35	28.1 to 18.1	52.57	30.16	22.41
MW-155	Roy Street ROW	20 to 30	24.4 to 14.4	44.05	24.54	19.51
MW-159	8th Avenue N ROW	20 to 30	22.9 to 12.9	42.79	29.34	13.45
MW-214	Valley Street ROW	7 to 17	20.8 to 10.8	27.32	9.54	17.78
R-MW5	Dexter Avenue N ROW	15 to 30	42.0 to 27.0	57.01	25.95	31.06
SCL-MW101	Alley East of 800 Aloha Street	5 to 15	25.5 to 15.5	30.02	8.85	21.17
SCL-MW105	Alley East of 800 Aloha Street	20 to 30	11.3 to 1.3	30.77	10.42	20.35
SCS-2	800 Aloha Street Parcel	11 to 21	28.2 to 18.2	39.16	18.95	20.21
SMW-3	Valley Street ROW	10 to 20	17.1 to 7.1	26.57	8.62	17.95
MW-301	Valley Street ROW	18.2 to 28.3	35.6 to 25.65	53.54	dry	–
MW-305	Dexter Avenue N ROW	22.8 to 32.8	37.4 to 27.4	59.86	28.17	31.69
MW-310	Alley Between 8th and 9th	13.7 to 23.7	19.2 to 9.2	32.48	13.67	18.81
MW-312	Alley Between 8th and 9th	15.7 to 25.7	19.9 to 9.9	34.99	15.66	19.33
MW-313	Alley Between 8th and 9th	19.4 to 29.4	20.4 to 10.4	39.53	22.34	17.19
MW-320	9th Ave N	15.5 to 25.5	18.6 to 8.6	33.57	15.45	18.12
Intermediate A Zone						
BB-8	Roy Street ROW	30 to 40	13.7 to 3.7	43.64	26.19	17.45
FMW-142	9th Ave N	37.5 to 42.5	-4.6 to -9.6	32.52	15.50	17.02
GEI-1	Block 37	26.8 to 36.8	1.2 to -8.9	27.95	10.62	17.33
MW107	8th Avenue N ROW	35 to 45	8.8 to -1.2	43.82	35.69	8.13
MW108	Alley Between 8th and 9th	40 to 50	-7.2 to -17.2	32.78	15.92	16.86
MW109	Alley Between 8th and 9th	35 to 45	-0.0 to -10.0	34.97	18.14	16.83
MW110	Alley Between 8th and 9th	35 to 45	4.7 to -5.3	39.67	22.65	17.02
MW115	9th Avenue N ROW	35 to 45	-0.6 to -10.6	34.10	17.34	16.76
MW116	9th Avenue N ROW	35 to 45	-3.1 to -13.1	31.34	13.30	18.04
MW119	9th Avenue N ROW	35 to 45	2.7 to -7.3	37.42	20.44	16.98
MW120	8th Avenue N ROW	40 to 50	0.0 to -10.0	40.00	22.88	17.12
MW127	8th Avenue N ROW	40 to 50	-1 to -11	39.04	20.33	19.67
MW-142	8th Avenue N ROW	40 to 50	2.4 to -7.6	42.12	29.14	12.98

Table 1

**Summary of Site-Wide Groundwater Elevations, October 21, 2019
American Linen Supply Co–Dexter Avenue Site
Seattle, Washington**

Sample Location	Property	Screen Interval (feet bgs)	Screen Interval Elevation (feet)	Top of Casing Elevation (feet)	Depth to Groundwater^a	Groundwater Elevation^b
MW-146	Roy Street ROW	40 to 50	12.9 to 2.9	52.34	33.98	18.36
MW-156	8th Avenue N ROW	40 to 50	2 to -8	41.24	27.26	13.98
MW-189	Valley Street ROW	48.8 to 58.8	1.2 to -11.2	47.33	34.50	12.83
MW-302	Dexter Avenue N ROW	54.3 to 64.3	3.0 to -7.0	57.03	46.52	10.51
MW-306	Roy Street ROW	42.8 to 52.8	17.2 to 7.2	59.48	30.04	29.44
MW-308	Alley Between 8th and 9th	35.1 to 45.1	-4.7 to -14.7	30.15	13.07	17.08
MW-315	Mercer Street ROW	37.5 to 47.5	12.2 to 2.2	49.18	27.08	22.10
MW-317	9th Avenue N ROW	28.2 to 38.2	3.4 to -6.6	31.35	13.86	17.49
MW-325	Mercer Street ROW	34.5 to 44.5	7 to -3.0	40.90	23.69	17.21
MW-327	S Lake Union Park	24.8 to 34.8	3.6 to -6.3	28.15	10.06	18.09
Intermediate B Zone						
FMW-141	Alley Between 8th and 9th	47.5 to 57.5	-12.1 to -22.1	35.15	18.31	16.84
MW111	Alley Between 8th and 9th	70 to 80	33.5 to -43.5	36.48	19.57	16.91
MW112	Dexter Avenue N ROW	75 to 85	-17.3 to -27.3	57.45	40.90	16.55
MW126	Alley Between 8th and 9th	85 to 95	-54.1 to -27.3	30.94	14.09	16.85
MW-143	8th Avenue N ROW	70 to 80	-27.7 to -36.6	42.04	27.66	14.38
MW-147	Roy Street ROW	70 to 80	-17.6 to -27.6	51.85	36.23	15.62
MW-148	Roy Street ROW	70 to 80	-25.7 to -35.7	43.91	26.92	16.99
MW-157	8th Avenue N ROW	70 to 80	-28.3 to -38.2	41.22	28.18	13.04
MW-190	Valley Street ROW	78.8 to 88.8	-30.2 to -40.2	48.39	34.03	14.36
MW-303	Dexter Avenue N ROW	71.4 to 81.4	-13.8 to -23.8	57.28	44.60	12.68
MW-307	Roy Street ROW	72.8 to 82.8	-12.35 to -22.35	60.21	41.65	18.56
MW-309	Alley Between 8th and 9th	62.4 to 72.4	-32.0 to -42.0	29.97	12.91	17.06
MW-311	Alley Between 8th and 9th	62.2 to 72.2	-29.0 to -39.0	32.98	16.45	16.53
MW-314	Alley Between 8th and 9th	67.8 to 77.8	-28.0 to -38.0	39.19	22.34	16.85
MW-316	Mercer Street ROW	59.8 to 69.8	-9.9 to -19.9	49.44	31.72	17.72
MW-318	9th Avenue N ROW	54.8 to 64.8	-23.1 to -33.1	31.36	14.56	16.80
MW-322	9th Avenue N ROW	54.7 to 64.7	-21.2 to -31.2	33.13	16.41	16.72
W-MW-02	8th Avenue N ROW	70 to 80	-26.5 to -36.5	43.46	31.93	11.53
Deep Zone						
FMW-131	Block 37	63 to 73	-34.7 to -44.7	27.85	12.21	15.64
FMW-137	Block 38	72 to 85	-41.9 to -54.9	30.09	14.11	15.98
GEI-2	Block 37	50.5 to 60.5	-21.1 to -31.1	29.38	13.54	15.84
MW102	Valley Street ROW	115 to 125	-65.8 to -75.8	49.11	32.20	16.91
MW103	Alley Between 8th and 9th	103.5 to 113.5	-67.6 to -77.6	35.92	19.17	16.75

Table 1

**Summary of Site-Wide Groundwater Elevations, October 21, 2019
American Linen Supply Co–Dexter Avenue Site
Seattle, Washington**

Sample Location	Property	Screen Interval (feet bgs)	Screen Interval Elevation (feet)	Top of Casing Elevation (feet)	Depth to Groundwater ^a	Groundwater Elevation ^b
MW104	8th Avenue N ROW	119 to 129	-76.3 to -86.3	42.68	25.62	17.06
MW105	Roy Street ROW	130 to 140	-85.3 to -95.3	44.12	27.47	16.65
MW106	SDOT Property	130 to 140	-78.0 to -88.0	51.99	35.25	16.74
MW113	9th Avenue N ROW	70 to 80	-36.8 to -46.8	32.91	16.19	16.72
MW122	Alley Between 8th and 9th	105 to 119	-74.9 to -84.9	30.03	13.23	16.80
MW123	Westlake Avenue N ROW	70 to 80	-42.5 to -52.5	27.50	10.64	16.86
MW124	Valley Street ROW	110 to 120	-53.8 to -63.8	56.24	39.28	16.96
MW128	Westlake Avenue N ROW	60 to 70	-30.8 to -40.8	28.59	12.36	16.23
FMW-129	SDOT Property	84 to 89	-45.6 to -50.6	38.31	21.54	16.77
MW-138	Dexter Ave N ROW	105 to 115	-47.5 to -57.5	57.03	40.19	16.84
MW-153	Roy Street ROW	120 to 130	-65.3 to -75.3	54.35	37.60	16.75
MW-158A	8th Avenue N ROW	90 to 100	-48.5 to -58.5	41.09	24.31	16.78
MW-160	8th Avenue N ROW	118 to 128	-75.4 to -85.4	42.24	25.28	16.96
MW-161	8th Avenue N ROW	130 to 140	-85.6 to -95.6	43.99	27.03	16.96
FMW- 137	Block 38 Alley	72 to 85	-41.9 to -54.9	30.09	14.11	15.98
FMW-140	Broad Street ROW	70 to 80	-38.0 to -48.0	31.71	15.03	16.68
MW-304	Dexter Avenue N ROW	105.2 to 115.2	-47.6 to -57.6	57.23	40.38	16.85
MW-319	9th Avenue N ROW	74.5 to 84.5	-42.8 to -52.8	31.31	14.52	16.79
MW-323	9th Avenue N ROW	100 to 110	-65.4 to -75.4	34.38	17.71	16.67
MW-324	9th Avenue N ROW	66.3 to 76.3	-32.1 to --42.1	33.71	17.09	16.62
MW-326	Mercer Street ROW	90 to 100	-48.7 to -58.7	40.97	24.22	16.75
MW-328	S Lake Union Park	64.5 to 74.5	-36.1 to -46.1	28.09	11.54	16.55
MW-329	Westlake Avenue N ROW	98.3 to 108.3	-69.0 to -79.0	28.93	12.67	16.26

NOTES:

TOCs were surveyed relative to an established datum of 521.41 feet prior to 2012. TOCs were resurveyed by Axis Survey and Mapping of Kirkland, WA on March 16th, 2012, relative to an arbitrary benchmark of 499.89 feet above mean sea level, and by Bush, Roed & Hitchings, Inc. of Seattle, WA in multiple surveys since February 2012 using the North American Vertical Datum 1988.

^a As measured in feet below a fixed spot on the well casing rim.

^b Calculated by subtracting the depth to groundwater from the casing elevation.

ROW = right-of-way

TOC = top of casing

-- = not available or not applicable

Table 2

**Summary of Property Groundwater Elevations, October 21, 2019
American Linen Supply Co–Dexter Avenue Site
Seattle, Washington**

Location	Screen Interval Elevation (NAVD88)	Top of Casing Elevation (feet)	Groundwater Pressure (PSI)	Groundwater Pressure (feet of water)	Depth to Groundwater ^a	Groundwater Elevation ^b	Notes
Treatment Zone A							
MW-165	1.3 to -8.8	13.6	–	–	–	–	
MW-169	1.2 to -8.8	13.5	–	–	6.47	7.08	
MW-173	2.2 to -7.8	13.6	–	–	–	–	
MW-177	2.3 to -7.7	13.6	–	–	6.57	7.04	
MW-181	1.5 to -8.5	13.6	–	–	9.75	3.84	
MW-185	1.4 to -8.7	13.6	–	–	4.30	9.30	
Treatment Zone B							
MW-166	-12.6 to -22.6	13.6	–	–	–	–	
MW-170	-12.8 to -22.8	13.6	–	–	4.94	8.62	
MW-174	-12.3 to -22.3	13.6	–	–	–	–	
MW-178	-11.7 to -21.7	13.6	–	–	2.27	11.34	
MW-182	-12.5 to -22.5	13.6	–	–	4.92	8.67	
MW-186	-12.7 to -22.7	13.6	–	–	9.86	3.71	
Treatment Zone C							
MW-167	-27.9 to -37.9	13.6	–	–	–	–	
MW-171	-27.6 to -37.6	13.5	–	–	1.14	12.35	
MW-175	-27.8 to -37.8	13.6	–	–	–	–	
MW-179	-27.2 to -37.2	13.6	–	–	4.37	9.25	
MW-183	-27.4 to -37.4	13.5	–	–	0.75	12.80	
MW-187	27.0 to -37.0	13.6	–	–	0.78	12.78	
Treatment Zone D							
MW-168	-43.0 to -53.0	13.6	–	–	–	–	
MW-172	-42.5 to -52.5	13.6	1.25	2.89	–	16.45	Flowing
MW-176	-42.7 to -52.7	13.5	–	–	–	–	
MW-180	-42.7 to -52.7	13.6	0.75	1.73	–	15.34	Flowing
MW-184	-42.5 to -52.5	13.6	0.5	1.16	–	14.73	Flowing
MW-188	-42.2 to -52.2	13.6	1.25	2.89	–	16.48	Flowing
NOTES:							
MW-165, MW-166, MW-167, and MW-168 were installed after October 21, 2019							
– = Not measured or not applicable.							
PSI = pounds per square inch.							
Depth to groundwater for flowing wells calculated using the measured pressure at the well head.							

Table 3

**Groundwater Field Parameters
American Linen Supply–Dexter Avenue Site
700 Dexter Avenue North, Seattle, Washington**

Sample Location	Property	Sample Date	pH	Specific Conductance (µS/cm)	Temperature (°C)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	ORP (mv)	Ferrous Iron (mg/L)
Shallow Zone									
F13	Property	03/27/17	6.80	756	15.4	3.4	0.86	-139	1.0
		06/22/17	7.00	865	20.2	–	0.27	-148	1.5
		04/05/18	6.84	491	16.6	–	0.50	67	–
		Decommissioned March 2019							
F5	Property	03/28/17	6.05	1,001	10.9	5.8	0.99	-50.5	–
		06/22/17	6.38	1,080	19.5	–	0.80	-87.1	–
		Decommissioned March 2019							
F9	Property	03/27/17	6.69	1,270	16.6	3.1	0.74	-151	–
		06/22/17	6.76	1,309	27.5	–	0.24	-149	–
		Decommissioned March 2019							
FMW-143	9th Ave N ROW	10/31/19	6.65	892	16.8	16.1	0.35	45	0.00
G12	Property	03/27/17	7.34	1,296	20.7	–	0.41	150	1.25
		06/30/17	6.88	1,239	29.1	–	1.30	-87	–
		Decommissioned March 2019							
J5	Property	03/21/17	6.95	251	15.1	4.6	0.70	-114	0.6
		06/26/17	6.94	484	19.8	–	0.42	-143	–
		04/05/18	6.85	286	14.1	–	0.50	77	–
		Decommissioned March 2019							
J15	Property	03/27/17	7.42	935	14.1	–	0.48	141	2.0
		06/26/17	6.86	920	20.8	–	0.44	-99	1.5
		04/05/18	6.83	716	18.1	–	0.40	103	–
		Decommissioned March 2019							
K8	Property	03/21/17	7.70	251	18.3	-0.3	0.80	-121	0.0
		06/26/17	7.76	257	22.3	–	0.25	-4	0.0
		04/05/18	9.45	220	16.7	–	0.70	56	–
		Decommissioned March 2019							
M15	Property	03/27/17	7.16	1,544	18.7	–	0.60	140	2.75
		06/26/17	6.71	1,440	25.6	–	0.70	-84	–
		04/05/18	6.90	1,034	18.0	–	0.40	86	–
		Decommissioned March 2019							
MW121	8th Ave N ROW	12/26/13	6.89	1,610	–	–	4.16	-30	1.9
		03/28/17	6.63	2,608	14.4	2.9	0.99	-122	2.0
		06/20/17	8.29	2,437	19.9	–	0.52	-88	3.0
		04/05/18	6.64	2,028	17.2	–	0.60	120	–
		01/31/19	6.87	2,396	15.3	–	0.42	-3	–
		04/29/19	6.75	2,521	18.1	–	0.30	9	–
		07/19/19	6.38	2,017	18.8	–	0.46	-17	–
		10/17/19	6.17	2,041	13.7	–	2.39	-119	–

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Sample Location	Property	Sample Date	pH	Specific Conductance (µS/cm)	Temperature (°C)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	ORP (mv)	Ferrous Iron (mg/L)
MW125	Valley Street ROW	12/26/13	6.28	1,414	–	–	8.68	22	1.47
		03/22/17	6.62	1,296	14.6	3.7	1.00	-116	–
		06/28/17	6.71	984	17.1	–	1.91*	-101	–
		04/06/18	6.89	831	17.5	–	0.30	-68	–
		01/21/19	6.67	912	15.8	–	0.48	122	–
		04/23/19	6.74	987	16.3	–	0.65	65	–
		07/18/19	6.90	920	18.9	–	0.40	59	–
		10/18/19	6.49	923	13.6	–	1.49	-86	2.00
MW-154	Roy St ROW	04/30/18	7.26	469	16.3	–	0.40	72	–
		01/21/19	7.25	523	14.4	–	0.61	99	–
		04/24/19	7.09	459	18.6	–	0.48	103	–
		07/15/19	6.96	517	20.0	–	1.21	157	–
		10/14/19	6.49	515	17.5	7.6	0.53	161	0.00
MW-155	Roy St ROW	04/27/18	6.79	479	13.3	–	3.20	94	–
		01/21/19	6.52	500	12.3	–	2.43	119	–
		04/23/19	6.51	663	14.7	–	1.80	41	0.00
		07/23/19	6.26	765	14.4	–	20.6	66	–
		10/16/19	6.30	657	15.2	4.5	1.12	272	0.00
MW-159	8th Ave N ROW	04/26/18	6.92	928	18.9	–	0.70	109	–
		01/21/19	6.92	1,125	14.1	–	0.59	126	–
		04/26/19	6.83	1,279	14.5	–	0.54	79	–
		7/19/19	6.75	1,109	19.0	–	1.34	62	–
MW214 (dry)	Valley Street ROW	03/30/17	7.47	467	11.0	3.6	5.91	-70.1	–
		06/21/17	–	–	–	–	–	–	–
		04/09/18	8.94	380	13.7	–	8.00	401	–
		10/11/19	6.91	692	16.3	10.5	0.44	122	–
MW-305	Dexter Ave N ROW	10/11/19	6.34	18,702	16.8	99.9	1.97	-11	0.00
MW-310	Alley Between 8th & 9th Ave N	10/10/19	6.97	1,508	15.5	177	1.00	24	4.00
MW-312	Alley Between 8th & 9th Ave N	10/11/19	6.84	1,670	16.4	59.6	0.49	-59	2.80
MW-313	Alley Between 8th & 9th Ave N	10/10/19	7.06	718	17.3	66.4	0.77	131	0.50
MW-320	9th Ave N ROW	10/07/19	6.65	552	17.4	21.3	0.39	253	0.00
MW-8 (dry)	800 Aloha Street Parcel	03/20/17	6.47	1,080	14.2	11.4	1.30	-4.0	–
		06/27/17	–	–	–	–	–	–	–
		04/13/18	5.99	540	13.1	–	0.80	261	–
		07/18/19	6.20	692	16.9	–	0.27	224	–
		10/10/19	6.35	425	15.4	5.2	0.45	126	–

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Sample Location	Property	Sample Date	pH	Specific Conductance (µS/cm)	Temperature (°C)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	ORP (mv)	Ferrous Iron (mg/L)		
MW-9	8th Ave N ROW	12/16/13	6.72	132	–	–	0.20	263	3.41		
		03/20/17	6.64	1,203	13.0	0.0	1.00	-109	–		
		06/20/17	6.41	1,391	20.8	–	0.76	-93	–		
		04/05/18	6.73	1,299	13.4	–	0.80	128	–		
		01/21/19	6.63	1,179	12.5	–	0.71	143	–		
		04/26/19	6.68	632	16.6	–	0.50	62	–		
		07/16/19	6.70	1,060	17.4	–	0.22	-118	–		
		10/17/19	6.27	1,190	14.4	–	0.52	-104	2.0		
N7	Property	03/30/17	6.82	350	15.9	2.8	1.11	-73.8	0.0		
		06/27/17	6.83	505	24.9	1.7	1.74*	-3.5	0.25		
		Decommissioned March 2019									
R-MW2	Property	03/21/17	7.00	723	11.4	17.6	0.80	-161	–		
		06/15/17	6.78	766	15.5	–	0.43	-161	–		
		04/02/18	6.68	737	14.5	–	0.70	49	–		
		Decommissioned March 2019									
R-MW3	Property	03/21/17	7.06	1,616	16.7	4.1	0.90	-38.7	–		
		06/28/17	7.11	1,258	23.5	–	1.01	-132	–		
		04/04/18	6.96	1,241	16.8	–	0.50	98.3	–		
		Decommissioned March 2019									
R-MW5	8th Ave N ROW	03/23/17	6.12	537	17.1	–	0.80	-36.6	1.0		
		06/16/17	5.85	516	17.6	–	1.12	-370	–		
		04/11/18	9.57 ^(a)	504	15.5	–	0.50	213.2	–		
		01/03/19	5.96	533	14.7	–	0.81	71.1	–		
		04/22/19	6.14	410	15.9	–	0.54	100	–		
		07/16/19	6.06	378	18.8	–	0.26	51.6	–		
		10/21/19	6.33	346	16.6	66.7	0.70	156	1.0		
		R-MW6 (dry) (dry)	8th Ave N ROW	03/21/17	6.56	1,280	14.8	6.6	0.80	-38.5	–
06/20/17	6.57			1,407	18.0	–	0.84	-55.5	1.5		
04/06/18	6.72			1,137	16.8	–	0.70	113	–		
01/25/19	6.75			1,055	14.9	–	0.33	-101	–		
04/25/19	6.77			1,295	17.5	–	0.40	18.0	–		
07/18/19	–			–	–	–	–	–	–		
10/10/19	–			–	–	–	–	–	–		
SCL-MW101	Alley Between 8th & 9th Ave N			03/28/17	7.34	834	11.8	–	0.35	118	–
				06/14/17	6.35	628	17.9	–	0.12	-49	–
		04/06/18	6.61	654	14.3	–	0.30	66	–		
		10/09/19	6.10	1,468	16.4	–	0.48	-78	–		
SCL-MW105	Alley Between 8th & 9th Ave N	03/28/17	7.19	1,049	12.6	–	0.50	136	–		
		06/15/17	6.45	1,086	15.8	–	1.11	-95	–		
		04/06/18	6.73	968	15.4	–	0.40	76	–		
		10/10/19	6.50	1,289	14.2	17.8	0.57	-83	–		

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American Linen Supply–Dexter Avenue Site
700 Dexter Avenue North, Seattle, Washington**

Sample Location	Property	Sample Date	pH	Specific Conductance (µS/cm)	Temperature (°C)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	ORP (mv)	Ferrous Iron (mg/L)
SCS-2	800 Aloha Street Parcel	03/20/17	6.50	947	13.0	1.6	1.00	-142	–
		06/12/17	6.41	761	17.3	–	0.59	-31	–
		04/13/18	10.72 ^(a)	199	10.5	–	0.80	215	–
		07/18/19	6.48	895	16.0	–	0.32	-97	–
		10/10/19	6.60	776	13.9	4.5	0.53	-18	–
SMW-3	Valley Street ROW	03/30/17	6.48	743	11.8	2.9	0.98	-85.7	–
		06/21/17	6.35	589	20.9	–	0.41	-57.3	–
		04/09/18	7.79 ^(a)	807	14.9	–	0.60	-17.8	–
		10/11/19	6.33	846	16.5	223	0.57	53.8	–
Intermediate A Zone									
BB-8	Roy Street ROW	12/29/13	6.56	8,560	–	–	0.72	224	0.01
		03/22/17	6.74	621	14.6	-0.6	1.80	-22.9	0.0
		06/14/17	6.29	649	14.5	–	1.12	188	0.0
		04/11/18	6.96	512	14.5	–	0.70	84.9	0.0
		01/23/19	6.80	700	12.9	–	0.76	154	0.0
		04/23/19	6.94	649	14.2	–	1.28	33.8	0.0
		07/17/19	6.50	640	15.9	–	0.50	-5.5	0.0
10/22/19	6.37	551	16.1	13.6	0.32	221	0.0		
FMW-142	9th Ave N ROW	10/31/19	6.22	556	12.8	10.3	0.38	-57	0.50
GEI-1	Block 37	03/24/17	6.41	1,127	12.0	24.1	0.80	-103	1.0
		06/13/17	6.65	553	14.9	–	0.56	-38	–
		04/22/19	6.35	1,099	13.3	–	0.68	-46	–
		07/16/19	6.66	908	19.2	–	0.21	-105	3.0
		10/21/19	6.65	1,285	15.1	–	0.20	-70	2.1
MW107	8th Ave N ROW	12/16/13	6.62	900	–	–	1.14	22	0.43
		03/27/17	7.10	1,434	13.7	–	0.50	141	2.0
		06/19/17	6.24	1,434	22.5	–	0.77	-30	1.5
		04/09/18	6.73	1,193	18.4	–	0.30	49	4.0
		01/30/19	6.99	1,299	11.0	–	0.74	127	–
		05/01/19	6.85	1,216	16.9	–	0.33	24	2.0
		07/22/19	6.64	1,187	21.5	–	2.72	-9	1.4
		10/15/19	6.93	1,263	19.9	85.3	0.38	-66	3.4
MW108	Alley Between 8th & 9th Ave N	12/17/13	6.36	1,570	–	–	0.50	-72	21.7
		03/28/17	6.65	1,410	13.6	2.0	0.97	-99	2.5
		06/27/17	6.72	1,252	16.3	–	4.45*	-108	2.0
		04/06/18	6.69	1,026	14.6	–	0.60	136	–
		01/22/19	6.77	1,053	11.9	–	0.80	132	–
		04/29/19	6.61	1,296	14.4	–	0.42	-18	–
		07/15/19	6.55	1,217	17.7	–	0.78	-49	–
10/10/19	6.81	1,178	15.1	14.3	1.49	3	3.3		

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MW109	Alley Between 8th & 9th Ave N	12/17/13	6.68	1,540	–	–	0.31	-78	16.2
		03/29/17	6.59	916	14.9	2.8	0.77	-115	1.5
		06/27/17	6.72	1,129	16.9	–	3.85*	-107	1.5
		04/06/18	6.71	1,112	14.3	–	0.50	136	–
		01/23/19	6.97	1,203	15.7	–	0.59	143	–
		04/29/19	6.52	1,128	14.2	–	0.45	40	–
		07/15/19	6.57	1,214	17.5	–	0.44	-29	–
		10/15/19	6.40	1,167	15.2	16.2	0.46	-95	2.5
MW110	Alley Between 8th & 9th Ave N	12/19/13	8.82	888	–	–	0.52	291	0.04
		03/23/17	6.66	1,109	13.1	0.4	1.05	-46.5	0.1
		06/27/17	7.13	1,010	17.2	–	1.42*	56.7	0.0
		04/09/18	6.22	895	16.1	–	0.70	431	–
		01/23/19	6.74	1,020	14.5	–	0.41	103	–
		04/26/19	6.67	998	16.7	–	0.49	135	–
		07/15/19	6.68	965	16.2	–	0.45	160	–
		10/15/19	6.34	976	15.8	–	0.45	-18.6	–
MW115	9th Ave N ROW	12/19/13	6.80	1,220	–	–	0.71	-61	6.69
		03/22/17	7.28	880	14.8	–	0.51	160	1.5
		06/22/17	6.85	778	20.2	–	0.39	-102	1.5
		04/11/18	6.91	860	13.1	–	0.40	89	–
		01/30/19	7.03	912	12.7	–	0.57	116	–
		07/17/19	6.68	935	16.4	–	0.37	34	–
		10/22/19	6.64	699	15.3	0.1	0.51	-140	2.0
MW116	9th Ave N ROW	12/19/13	6.84	498	–	–	0.67	75	2.65
		03/21/17	7.05	814	13.3	6.2	0.80	-127	3.9
		06/16/17	6.86	749	18.7	–	0.41	-641	1.8
		04/11/18	7.11	830	13.3	–	0.40	75	–
		01/30/19	7.09	771	15.5	–	0.65	-122	2.0
		07/17/19	6.89	822	16.6	–	0.42	40	–
		10/22/19	6.86	640	15.9	2.0	0.22	158	1.3
MW119	9th Ave N ROW	12/19/13	9.56	579	–	–	0.34	295	18.6
		03/29/17	6.41	631	13.4	2.4	0.85	-90.7	2.0
		06/28/17	6.29	676	17.4	–	4.88*	11.0	1.5
		04/05/18	6.30	517	13.1	–	0.60	119	–
		01/21/19	6.76	67	12.6	–	6.76	114	–
		04/29/19	6.33	652	15.1	–	0.42	-2.7	–
		07/19/19	6.34	26	16.7	–	0.61	0.7	–
10/10/19	6.66	582	14.8	–	0.44	-10.3	3.0		

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MW120	8th Ave N ROW	12/19/13	6.63	743	–	–	1.30	-13	0.17
		03/28/17	7.93	622	9.5	–	0.75	123	–
		06/28/17	6.60	568	17.8	–	1.33*	91	–
		04/09/18	6.96	423	15.1	–	0.40	37	0.00
		01/24/19	6.66	649	14.0	–	0.73	110	–
		05/03/19	6.46	533	14.6	–	0.36	253	–
		07/16/19	6.31	632	17.7	–	0.66	120	0.00
		10/17/19	6.08	742	15.0	–	0.51	-67	0.00
MW127	8th Ave N ROW	08/01/19	6.95	440	17.2	–	0.34	164	–
		10/17/19	6.30	471	15.0	–	0.35	-83	0.0
MW131	Property	03/27/17	7.01	2,045	19.5	2.4	0.85	-134	1.9
		06/20/17	15.39 ^(a)	2,071	21.9	–	0.62	-86	–
		04/16/18	6.96	1,610	17.3	–	0.30	18	1.8
		10/25/18	6.66	1,546	18.9	–	0.39	-55	–
		12/12/18	6.78	1,899	14.5	–	0.44	129	–
		01/29/19	6.86	1,948	9.2	–	0.77	137	–
		03/11/19	6.70	1,849	14.0	–	1.30	-21	–
		Decommissioned March 2019							
MW-142	8th Ave N ROW	04/27/18	6.96	1,349	18.9	–	0.50	133	1.50
		01/28/19	6.94	1,528	11.7	7.9	0.75	152	2.00
		04/24/19	7.00	1,541	15.6	–	0.70	121	1.20
		07/25/19	6.70	1,665	20.4	–	1.09	13	2.10
		10/16/19	6.36	1,456	15.7	–	0.85	-35	2.00
MW-144	8th Ave N ROW	04/27/18	7.34	1,739	16.4	–	0.40	100	0.50
		01/28/19	7.44	1,798	13.1	5.3	0.57	125	–
		04/23/19	7.39	1,749	16.8	–	0.45	67	1.2
		Destroyed June 2019, Decommissioned December 2019							
MW-144R	8th Ave N ROW	12/16/19	7.81	1,250	16.0	16.6	0.34	-131	2.00
MW-146	Roy St ROW	04/30/18	7.27	694	17.0	–	0.40	95	1.25
		01/22/19	7.56	621	12.1	–	0.48	122	2.00
		04/24/19	7.20	564	16.5	–	0.76	11	2.50
		07/19/19	6.76	713	16.6	–	2.60	70	1.90
		10/14/19	6.68	648	16.9	22.6	0.49	98	2.00
MW-149	Property	04/10/18	6.57	895	16.1	64.2 ^(b)	0.70	201	1.8
		10/25/18	6.41	814	19.3	–	0.17	-31	–
		12/13/18	6.56	1,354	16.5	–	1.79	132	0.5
		01/29/19	6.67	1,209	17.1	2.9	17.1	121	0.0
		03/13/19	6.29	1,648	17.2	–	0.12	-178	–
		Decommissioned March 2019							

Table 3

**Groundwater Field Parameters
American Linen Supply–Dexter Avenue Site
700 Dexter Avenue North, Seattle, Washington**

Sample Location	Property	Sample Date	pH	Specific Conductance (µS/cm)	Temperature (°C)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	ORP (mv)	Ferrous Iron (mg/L)
MW-151	Property	04/10/18	6.69	809	15.1	23.5 ^(b)	0.60	64	0.8
		10/25/18	6.26	3,599	18.5	-	0.06	-135	-
		12/14/18	6.74	2,314	11.0	-	0.13	-122	-
		01/31/19	6.86	2,151	13.0	-	0.18	21	-
		03/12/19	6.40	1,430	12.3	-	0.23	-278	-
		Decommissioned March 2019							
MW-156	8th Ave N ROW	04/26/18	6.72	996	18.3	-	0.60	116	0.00
		01/24/19	6.70	1,263	16.1	78.1	0.54	131	0.00
		04/24/19	6.73	1,481	16.8	-	0.57	103	0.40
		07/22/19	7.55	1,452	20.6	-	0.13	-63	0.25
		10/17/19	6.62	1,756	17.4	9.5	0.29	-22	1.40
MW-189	Valley Street ROW	10/14/19	7.40	636	18.1	20.7	0.30	-115	0.1
MW-302	Dexter Ave N ROW	10/21/19	7.87	653	17.7	112	0.56	-170	0.5
MW-306	Dexter Ave N ROW	10/15/19	6.64	471	16.9	26.7	0.31	119	2.5
MW-308	Alley Between 8th and 9th Ave N	10/11/19	6.51	1,185	14.9	30.1	0.48	-37	3.5
MW-315	Mercer Street ROW	10/03/19	7.95	545	14.9	18.2	0.54	105	0.0
MW-317	9th Ave N ROW	10/09/19	6.07	1,011	16.8	171	0.30	-85	3.0
MW-325	Mercer St ROW	10/03/19	6.68	578	15.2	23.7	0.37	242	0.0
MW-327	East of Westake Ave N	10/02/19	6.85	479	14.2	46.0	0.57	16	3.5
Intermediate B Zone									
FMW-141	Alley Between 8th & 9th Ave N	10/30/19	7.33	1,124	14.0	23.0	0.39	100	0.5
MW111	Alley Between 8th & 9th Ave N	12/17/13	7.58	498	-	-	1.19	-99	0.18
		03/23/17	7.62	447	14.0	-0.5	1.19	-147	0.1
		06/14/17	7.29	431	19.7	-	1.15	-33	-
		04/06/18	7.75	605	15.3	-	0.60	83	-
		01/23/19	7.86	528	14.2	-	0.50	-124	-
		04/22/19	7.84	384	13.7	-	0.58	-46	-
		07/15/19	7.78	478	18.3	-	0.35	-138	-
		10/14/19	7.53	509	14.4	1.2	0.57	30	-
MW112	Dexter Ave N ROW	12/26/13	7.79	378	-	-	2.58	223	0.23
		03/22/17	7.96	419	14.9	-	0.93	132	-
		06/16/17	7.11	49	22.0	-	5.22	-457	-
		04/12/18	7.07	41	14.8	-	1.10	35	0.00
		12/21/18	6.88	108	13.9	-	0.77	68	-
		04/22/19	7.52	196	17.0	-	0.38	-70	1.00
		07/16/19	7.65	266	20.2	-	0.20	-143	0.00
		10/21/19	6.55	152	16.7	-	0.57	-136	0.50

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**Groundwater Field Parameters
American Linen Supply–Dexter Avenue Site
700 Dexter Avenue North, Seattle, Washington**

Sample Location	Property	Sample Date	pH	Specific Conductance (µS/cm)	Temperature (°C)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	ORP (mv)	Ferrous Iron (mg/L)
MW126	Alley Between 8th & 9th Ave N	03/28/17	7.41	397	12.8	2.0	1.37	-112	–
		06/15/17	7.69	385	15.9	–	0.70	-64	–
		04/06/18	7.87	353	14.3	–	0.30	99	–
		01/22/19	7.88	432	10.7	–	1.25	115	–
		04/29/19	7.34	427	14.7	–	0.42	7	–
		07/18/19	7.41	357	15.9	–	0.25	14	–
		10/15/19	6.72	396	15.1	4.7	0.38	-102	0.50
MW130	Property	03/29/17	7.18	751	9.6	–	2.66	132	1.0
		06/30/17	7.32	858	29.7	–	0.99	-70	0.0
		05/21/18	7.69	571	26.3	–	1.07	-72	0.0
		12/17/18	7.74	1,183	16.5	–	44.9	–	0.0
		01/31/19	7.40	1,176	21.4	–	59.1	112	0.0
		Decommissioned March 2019							
MW-132	Property	09/25/17	8.52 ^(a)	652	27.3	39.7 ^(b)	0.70	-151	–
		04/26/18	7.70	466	25.9	–	3.50	81.6	–
		10/25/18	7.58	568	19.1	–	1.10	16.7	–
		12/13/18	7.60	668	14.2	–	0.93	117	–
		01/31/19	7.66	712	14.9	–	0.74	-40.3	–
		03/11/19	7.62	592	17.2	–	0.99	-24	–
		Decommissioned March 2019							
MW-134	Property	09/22/17	13.08 ^(a)	565	19.0	MAX ^(b)	0.91	-47.7	–
		04/16/18	7.10	598	15.7	–	0.10	-145	0.00
		10/25/18	7.41	748	18.3	–	0.30	157	–
		12/12/18	7.56	649	17.0	–	0.50	-141	–
		01/28/19	7.74	747	17.1	–	0.53	-141	–
		03/12/19	7.06	759	16.8	–	0.38	171	–
		Decommissioned March 2019							
MW-135	Property	09/25/17	9.11 ^(a)	871	25.3	208 ^(b)	1.10	-24.8	–
		04/25/18	7.38	837	19.5	–	0.80	99.2	1.50
		10/25/18	7.19	1,034	17.6	–	0.77	-68.3	–
		12/13/18	7.41	1,341	15.4	–	0.47	124	0.75
		01/31/19	7.34	1,269	21.1	–	0.13	-157	–
		03/13/19	7.13	1,661	15.0	–	0.18	194	–
Decommissioned March 2019									
MW-136	Property	09/25/17	10.07 ^(a)	465	24.2	MAX ^(b)	0.60	-61.0	–
		04/16/18	7.94	447	21.9	–	0.40	-77.2	0.60
		10/29/18	7.57	521	20.8	–	0.62	10.6	–
		12/13/18	7.56	539	18.6	–	0.34	-149	–
		02/01/19	7.41	546	18.7	–	1.42	-53.6	–
		03/12/19	7.36	687	14.2	–	0.50	172	–
Decommissioned March 2019									

Table 3

**Groundwater Field Parameters
American Linen Supply–Dexter Avenue Site
700 Dexter Avenue North, Seattle, Washington**

Sample Location	Property	Sample Date	pH	Specific Conductance (µS/cm)	Temperature (°C)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	ORP (mv)	Ferrous Iron (mg/L)
MW-139	Property	09/25/17	9.65 ^(a)	340	26.4	MAX ^(b)	0.60	-163	–
		04/25/18	7.79	432	20.3	–	0.40	89	0.75
		10/25/18	7.70	445	18.5	–	0.84	-13	–
		12/13/18	7.56	531	12.5	–	0.91	120	–
		01/28/19	7.92	534	13.4	–	1.19	-134	–
		03/11/19	7.11	703	18.4	–	0.70	-56	–
		Decommissioned March 2019							
MW-143	8th Ave ROW	04/30/18	7.83	905	15.4	–	0.60	97	0.50
		01/29/19	7.64	950	18.1	80.4	0.23	-148	0.75
		04/24/19	7.29	965	14.7	–	0.83	100	0.30
		07/19/19	7.42	835	21.3	–	0.21	-139	1.00
		10/16/19	7.12	891	16.9	–	0.88	-45	0.50
		Decommissioned March 2019							
MW-145	8th Ave ROW	04/27/18	8.01	718	17.0	–	0.30	101	0.00
		01/29/19	7.60	740	17.4	94.9	0.98	-101	0.00
		04/26/19	7.89	722	16.5	–	0.36	-43	0.00
		Destroyed June 2019, Decommissioned December 2019							
MW-145R	8th Ave ROW	12/16/19	8.25	480	15.1	32.9	0.45	-106	0.00
MW-147	Roy St ROW	05/01/18	7.85	911	16.8	–	0.40	79	–
		01/22/19	7.60	892	8.6	–	0.79	118	1.00
		04/23/19	7.07	685	17.3	–	0.42	-103	1.50
		07/18/19	6.85	721	17.4	–	0.46	94	2.00
		10/14/19	7.00	671	17.6	90.9	0.38	99	0.50
		Decommissioned March 2019							
MW-148	Roy St ROW	05/01/18	8.06	499	13.7	–	0.40	107	0.25
		01/23/19	7.80	706	12.0	–	0.66	116	–
		04/26/19	6.94	717	13.8	–	0.43	82	0.40
		07/22/19	8.43	619	16.6	–	0.24	-143	0.50
		10/16/19	7.35	654	15.1	107	0.17	53	0.50
		Decommissioned March 2019							
MW-150	Property	04/10/18	7.11	845	17.5	73.5 ^(b)	0.60	315	0.00
		10/25/18	6.79	1,282	18.6	–	0.05	-114	–
		12/12/18	6.95	1,812	15.0	–	0.39	134	–
		01/29/19	6.88	1,959	15.8	–	0.15	123	–
		03/13/19	6.39	2,489	16.5	–	0.19	-214	–
		Decommissioned March 2019							
MW-152	Property	04/10/18	7.45	846	15.2	15.8 ^(b)	0.60	372	0.00
		10/26/18	6.83	894	17.0	–	0.62	-85	–
		12/14/18	6.47	1,207	14.5	–	0.75	116	1.00
		01/31/19	7.26	1,632	11.6	–	9.10	125	–
		03/12/19	6.47	1,922	12.9	–	0.29	-186	–
		Decommissioned March 2019							
MW-157	8th Ave N ROW	04/26/18	6.92	867	20.7	–	0.70	97	–
		01/24/19	6.86	885	14.3	–	0.71	-64	3.00
		04/24/19	6.90	1,296	17.9	–	0.31	74	3.00
		07/22/19	7.28	923	19.5	–	0.14	-118	3.00
		10/16/19	7.14	1,378	17.6	10.5	0.21	-99	0.00
		Decommissioned March 2019							

Table 3

**Groundwater Field Parameters
American Linen Supply–Dexter Avenue Site
700 Dexter Avenue North, Seattle, Washington**

Sample Location	Property	Sample Date	pH	Specific Conductance (µS/cm)	Temperature (°C)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	ORP (mv)	Ferrous Iron (mg/L)
MW-190	Valley Street ROW	10/14/19	7.59	492	16.6	14.4	0.53	-92	0.20
MW-303	Dexter Ave N ROW	10/21/19	7.88	437	16.4	50.0	0.37	-246	0.00
MW-307	Dexter Ave N ROW	10/11/19	8.19	586	16.5	101	0.28	-540	0.00
MW-309	Alley Between 8th and 9th Ave N	10/14/19	7.67	626	14.6	7.2	0.64	68	0.50
MW-311	Alley Between 8th and 9th Ave N	10/10/19	7.31	1,044	15.0	17.8	0.46	-39	0.00
MW-314	Alley Between 8th and 9th Ave N	10/10/19	7.22	860	14.9	50.3	0.35	138	3.50
MW-316	Mercer Street ROW	10/03/19	7.77	662	15.0	88.0	0.45	203	1.00
MW-318	9th Avenue N ROW	10/08/19	7.09	846	15.3	–	0.48	-84	4.00
MW-322	9th Avenue N ROW	10/07/19	6.68	1,400	16.9	28.7	0.45	-66	0.00
W-MW-01	8th Ave N ROW	04/13/18	7.91	539	14.5	–	0.40	67	0.8
		10/29/18	7.50	565	16.6	–	0.67	-91	–
		12/13/18	7.36	583	17.9	–	0.34	-123	–
		01/25/19	7.46	703	12.4	MAX ^(b)	0.51	127	1.5
		03/11/19	7.36	737	15.4	–	0.36	198	–
		04/25/19	7.64	758	16.7	–	0.61	32	0.6
		07/23/19	7.75	642	19.3	–	0.17	-153	0.0
		10/15/19	7.61	900	18.8	30.6	0.21	-142	0.0
W-MW-02	8th Ave N ROW	12/16/13	7.05	999	–	–	0.30	-84	0.9
		03/27/17	6.53	1,239	17.8	–	0.41	135	1.8
		06/19/17	6.02	1,326	20.0	–	1.45*	-11	1.5
		06/12/18	6.80	1,594	16.1	–	0.75	23	3.4
		10/26/18	6.32	1,763	19.2	–	0.41	-63	–
		12/12/18	6.51	2,025	15.7	–	0.44	125	–
		01/25/19	6.49	1,687	16.9	25.2	0.53	-52	2.0
		03/11/19	6.50	1,832	14.8	–	0.95	-9	–
		04/23/19	6.68	1,688	13.7	–	0.72	52	0.5
		07/23/19	6.61	1,740	22.3	–	0.36	-90	3.0
		10/18/19	6.65	2,030	19.1	32.7	0.24	-2	3.4
Deep Zone									
FMW-129	SDOT Property S of Roy	04/10/17	8.88	891	12.4	–	0.82	-116	0.0
		06/23/17	6.82	703	20.2	–	0.60	-31	1.0
		05/01/19	6.83	666	15.9	–	0.44	7	–
		07/16/19	6.63	669	14.6	–	0.47	97	–
		10/21/19	7.02	548	14.4	84.7	0.15	198	0.50
FMW-131	Block 37	03/24/17	6.73	342	13.3	2.9	0.84	-41.6	0.5
		06/23/17	6.71	552	15.4	–	0.78	25.1	0.25
		04/22/19	6.44	224	12.6	–	0.41	-22.3	–
		07/01/19	–	–	–	–	–	–	–
		10/21/19	7.19	267	14.3	–	0.30	-27.1	0.50

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FMW-137	Mercer Street ROW	11/06/19	6.99	704	14.0	–	0.40	267.1	0.00
FMW-140	900 Roy Street	10/31/19	6.34	699	15.5	83.0	0.38	-36.8	0.50
FMW-3D	Block 31	03/24/17	6.85	302	13.7	16.9	1.06	-74.7	–
		06/23/17	6.81	356	19.9	–	0.48	-16.5	–
GEI-2	Block 37	03/24/17	6.43	890	12.6	0.5	0.84	-77.6	0.25
		06/23/17	6.68	804	16.0	–	0.45	-80.0	1.0
		04/22/19	6.61	933	13.0	–	0.37	-44.6	–
		07/16/19	6.71	708	16.9	–	0.26	-85.0	1.50
		10/21/19	6.92	1,297	14.8	–	0.30	-71.1	2.20
MW102	Valley Street ROW	03/29/17	7.87	417	11.6	–	1.55	148	–
		06/15/17	7.89	292	16.8	–	0.69	-88	–
		04/25/18	7.89	297	19.5	–	0.40	66	1.00
		01/24/19	8.01	314	11.5	–	0.63	-124	0.00
		05/01/19	8.32	303	16.9	–	0.64	97	0.50
		07/18/19	7.40	320	20.5	–	0.12	-73	0.80
		11/14/19	7.76	295	16.9	153	2.41	202	0.00
MW103	Alley Between 8th & 9th Ave N	12/18/13	10.45	735	–	–	0.26	267	1.39
		03/23/17	7.49	799	13.4	–	0.91	155	0.25
		06/12/17	7.35	648	17.0	–	0.31	-88	1.75
		04/06/18	7.52	521	15.1	–	0.60	91	–
		01/23/19	9.60	359	13.8	–	0.55	126	–
		04/22/19	7.21	693	13.4	–	0.60	6	–
		07/15/19	7.14	728	17.9	–	0.54	31	–
		10/14/19	7.20	655	15.9	5.9	0.05	-57	0.50
MW104	8th Ave N ROW	12/17/13	8.49	591	–	–	0.48	245	5.03
		03/30/17	6.28	667	8.7	–	1.84	131	–
		06/30/17	7.70	383	25.5	–	0.23	-131	0.0
		04/09/18	8.47	425	20.9	–	0.20	33	0.3
		10/25/18	11.48	750	19.2	–	0.63	131	–
		12/13/18	9.33	334	19.6	–	0.20	-259	–
		02/01/19	9.65	153	20.2	MAX ^(b)	0.11	-205	0.0
		03/13/19	9.03	407	18.6	–	0.24	122	–
		04/23/19	9.10	376	18.6	–	0.21	-100	0.0
		07/22/19	9.94	373	20.8	–	0.24	138	0.0
10/18/19	8.73	542	18.6	35.5	0.21	-133	0.0		
MW105	Roy Street ROW	12/29/13	7.49	1,165	–	–	1.26	216	2.01
		04/21/17	7.47	785	17.1	105	2.34	-36.8	–
		06/12/17	7.37	734	17.1	–	0.70	-64.1	–
		04/11/18	9.48 ^(a)	469	14.4	–	1.40	42.0	0.75
		01/23/19	7.66	570	13.4	–	0.67	107	–
		04/23/19	7.82	580	15.3	–	0.39	-57.7	0.50
		07/17/19	7.53	625	17.1	–	0.32	127	–
		10/22/19	7.29	722	15.2	49.4	0.60	-147	1.50

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MW106	SDOT Property S of Roy	04/14/17	9.47	726	15.1	457	2.00	1.7	0.0
		06/30/17	7.69	566	19.7	–	0.40	-128	0.0
		05/04/18	7.91	482	16.0	–	0.50	100	0.0
		04/26/19	7.79	507	15.6	–	0.53	-19.9	0.0
		07/19/19	7.51	615	17.6	–	0.50	51.2	0.0
		10/18/19	7.86	534	16.0	216	0.42	49.3	0.5
MW113	9th Ave N ROW	12/19/13	10.0	267	–	–	0.26	264	0.03
		03/22/17	6.54	1,426	15.2	2.1	1.10	-79.1	4.0
		06/16/17	6.52	1,145	12.9	–	0.57	-5.7	1.5
		04/11/18	9.44 ^(a)	946	15.0	–	0.60	62.5	–
		02/07/19	6.64	1,219	9.9	2.4	0.80	75.9	2.5
		07/17/19	6.72	667	17.4	–	1.69	241	0.3
		10/22/19	6.33	681	16.6	11.8	0.19	151	3.6
MW122	Alley Between 8th & 9th Ave N	03/28/17	7.89	519	13.5	–	0.64	109	–
		06/14/17	7.72	374	16.7	–	0.46	-69	–
		04/06/18	7.93	336	14.9	–	0.60	77	–
		10/14/19	6.96	346	14.6	3.2	0.96	258	0.0
MW123	Westlake Ave N ROW	04/01/17	6.85	795	13.1	14.5	1.10	-117	–
		06/24/17	6.89	737	17.3	–	1.07	-89	–
		04/14/18	6.82	888	14.5	–	0.50	166	–
		10/18/19	6.71	947	14.3	6.0	0.36	-65	2.2
MW124	Valley Street ROW	12/26/13	7.84	285	–	–	1.43	217	0.39
		03/29/17	7.96	306	13.9	–	1.06	117	–
		06/15/17	7.64	292	16.5	–	0.50	9	–
		04/13/18	7.57	281	14.3	–	1.30	327	0.5
		10/11/19	6.99	398	17.8	23.1	5.01	-64	0.0
MW128	Westlake Ave N ROW	03/29/17	6.62	800	12.5	7.0	0.99	-88.0	1.8
		06/21/17	6.74	1,588	17.8	–	0.56	-78.8	–
		04/09/18	7.57	850	17.9	–	0.40	-44.7	–
		07/18/19	6.80	1040	17.3	–	0.24	-102	–
		10/11/19	6.77	880	15.6	156	0.44	-22.3	4.5
MW-133	Property	09/25/17	9.85 ^(a)	372	24.0	–	0.80	-157	–
		04/25/18	7.79	344	21.7	–	0.30	-24.8	1.25
		10/26/18	8.16	403	19.6	–	0.71	125	–
		12/12/18	7.69	362	17.3	–	0.90	-74.1	–
		02/01/19	7.76	362	19.4	–	0.34	-163	–
		03/13/19	6.99	413	12.1	–	0.91	181	–
		Decommissioned March 2019							

Table 3

**Groundwater Field Parameters
American Linen Supply–Dexter Avenue Site
700 Dexter Avenue North, Seattle, Washington**

Sample Location	Property	Sample Date	pH	Specific Conductance (µS/cm)	Temperature (°C)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	ORP (mv)	Ferrous Iron (mg/L)
MW-137	Property	09/25/17	9.22 ^(a)	342	26.0	223 ^(b)	0.60	-148	–
		04/12/18	9.29	386	22.1	–	0.10	-112	0.75
		10/26/18	7.54	469	24.2	–	8.74	141	–
		12/12/18	7.27	398	18.8	–	0.74	-117	–
		02/01/19	9.26	437	18.8	–	0.21	-171	–
		03/11/19	7.39	493	18.1	–	0.50	180	–
		Decommissioned March 2019							
MW-138	Dexter Ave N ROW	09/21/17	8.32 ^(a)	390	18.1	MAX ^(b)	0.52	-331	–
		04/11/18	7.89	350	17.4	–	0.20	33.5	0.0
		10/29/18	7.43	346	16.5	–	0.38	122	–
		12/17/18	7.82	424	15.7	–	0.49	-145	–
		01/03/19	7.33	358	16.2	–	2.41	49.8	0.0
		03/14/19	6.76	426	14.2	–	0.44	149	–
		04/22/19	7.47	359	17.1	–	0.34	-64.7	3.5
		07/19/19	7.61	366	18.9	–	0.21	-156	0.5
		10/21/19	7.36	398	16.7	–	0.54	-146	0.5
MW-140	Roy St ROW	09/22/17	7.99 ^(a)	560	21.6	200 ^(b)	0.73	-209	–
		04/12/18	7.74	421	14.0	–	0.30	49.6	0.3
		Decommissioned							
MW-141	Property	09/22/17	9.90 ^(a)	398	24.0	MAX ^(b)	0.40	-393	–
		04/12/18	7.39	337	20.9	–	0.20	37.9	–
		10/25/18	7.25	376	19.5	–	0.41	150	–
		12/12/18	7.20	339	17.0	–	0.92	-110	–
		01/30/19	7.35	411	20.5	–	0.28	-134	–
		03/11/19	7.29	427	16.4	–	0.55	185	–
		Decommissioned March 2019							
MW-153	Roy St ROW	05/01/18	8.91	369	16.5	–	0.40	87.2	–
		01/22/19	8.91	391	15.2	–	0.67	93.5	0.0
		04/24/19	8.62	327	18.0	–	0.45	92.6	0.0
		07/22/19	7.65	370	17.1	–	8.17	2.8	0.0
		11/18/19	7.45	330	17.6	90.0	0.27	228	–
MW-158A	8th Ave N ROW	04/30/18	8.20	1,306	14.8	–	0.40	102	0.5
		01/24/19	7.91	707	13.8	MAX ^(b)	0.53	-164	0.0
		04/25/19	7.58	775	17.7	–	0.48	37.5	NR
		07/19/19	7.72	653	8.3	–	0.15	-144	0.0
		10/16/19	7.46	856	15.9	47.0	0.75	-78.7	–
MW-160	8th Ave N ROW	05/21/18	7.96	323	23.2	–	0.42	-247	0.0
		01/25/19	7.57	404	18.4	MAX ^(b)	0.40	94.8	0.5
		05/01/19	7.71	359	24.0	–	0.32	-121	0.0
		07/23/19	7.73	341	21.8	–	0.75	115	0.5
		10/17/19	7.58	487	19.5	85.0	0.53	-111	0.8

Table 3

**Groundwater Field Parameters
American Linen Supply–Dexter Avenue Site
700 Dexter Avenue North, Seattle, Washington**

Sample Location	Property	Sample Date	pH	Specific Conductance (µS/cm)	Temperature (°C)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	ORP (mv)	Ferrous Iron (mg/L)
MW-161	8th Ave N ROW	05/21/18	7.59	544	21.6	–	0.48	-153	0.0
		01/25/19	7.49	661	17.9	MAX ^(b)	0.61	99.2	0.0
		04/29/19	7.27	662	18.4	–	0.31	24.2	0.0
		07/18/19	7.10	586	20.9	–	0.36	-29.5	0.0
		10/14/19	7.44	837	19.7	11.5	0.16	-106	0.0
MW-162	Property	02/05/19	7.68	541	12.7	7.5	0.29	110	–
		03/12/19	7.52	402	17.8	–	0.31	-81.9	–
Decommissioned March 2019									
MW-163	Property	02/05/19	7.67	394	15.5	4.5	3.73	-44.7	–
		03/12/19	7.45	392	15.6	–	0.59	145	–
Decommissioned March 2019									
MW-164	Property	02/05/19	7.63	462	14.6	10.5	0.56	-35.4	–
		03/12/19	7.30	686	15.4	–	0.23	149	–
Decommissioned March 2019									
MW-304	Dexter Ave N ROW	10/21/19	7.91	352	17.3	91.0	0.59	-214	0.0
MW-319	9th Ave N ROW	10/08/19	6.90	563	15.4	22.8	0.43	193	3.5
MW-323	9th Ave N ROW	10/09/19	6.85	489	16.7	17.6	0.35	-335	0.0
MW-324	9th Ave N ROW	10/02/19	8.43	1,060	16.2	89.6	0.36	162	2.0
MW-326	Mercer Street ROW	10/03/19	7.53	529	15.9	45.3	0.42	52.8	0.5
MW-328	East of Westlake Ave N	10/02/19	6.82	4,785	14.6	26.6	0.41	-67.7	4.0
MW-329	Westlake Ave N ROW	10/03/19	6.92	1,012	18.6	34.8	0.38	-114	4.0
Treatment Zone A Wells									
IW-4A	Property	03/28/18	6.49	540	17.1	–	0.50	65	–
		Decommissioned March 2019							
IW-7A	Property	04/02/18	7.07	1,096	15.7	–	0.60	123	–
		Decommissioned March 2019							
IW-9A	Property	03/29/18	6.58	528	16.8	–	1.40	88	–
IW-18A	Property	03/30/18	6.47	928	17.7	–	0.50	117	–
		12/13/18	6.26	2,199	17.0	–	1.11	–	–
Decommissioned March 2019									
IW-22A	Property	04/02/18	6.96	1,005	18.6	–	0.60	92.5	–
		Decommissioned March 2019							
IW-37A	Property	03/28/18	8.17	319	15.9	–	0.70	10	–
		Decommissioned March 2019							
IW-38A	Property	12/14/18	6.60	1,945	15.8	–	0.26	144	–
		Decommissioned March 2019							
IW-41A	Property	04/10/18	8.12	364	17.4	–	0.30	58.7	–
		Decommissioned March 2019							
IW-42A	Property	04/10/18	7.53	590	14.2	–	0.40	73	–
		Decommissioned March 2019							
IW-45A	Property	04/04/18	7.18	573	13.3	–	0.70	68.7	–
		Decommissioned March 2019							
IW-46A	Property	03/28/18	6.78	1,564	14.7	–	0.50	89	–
		Decommissioned March 2019							

Table 3

**Groundwater Field Parameters
American Linen Supply–Dexter Avenue Site
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Sample Location	Property	Sample Date	pH	Specific Conductance (µS/cm)	Temperature (°C)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	ORP (mv)	Ferrous Iron (mg/L)
IW-48A	Property	04/02/18	6.88	2,007	15.4	–	0.70	72.6	–
		Decommissioned March 2019							
MW-165	Property	11/04/19	6.64	2,285	16.9	4.8	0.21	-177	4.0
MW-169	Property	11/05/19	7.68	1,295	18.9	4.3	0.18	-73.1	2.50
MW-173	Property	11/01/19	7.30	1279	16.5	3.0	0.27	-160	1.5
MW-177	Property	11/06/19	6.98	1,769	15.2	4.6	0.17	-79.9	3.10
MW-181	Property	11/08/19	7.29	1,341	17.1	6.7	0.22	154	2.0
MW-185	Property	10/31/19	7.05	1,944	12.8	7.4	0.48	-109	2.5
Treatment Zone B Wells									
IW-3B	Property	03/28/18	6.65	669	16.0	–	0.70	66	–
		Decommissioned March 2019							
IW-6B	Property	04/02/18	6.69	884	15.9	–	1.10	110	–
		Decommissioned March 2019							
IW-8B	Property	03/30/18	7.66	471	13.6	–	0.80	111	–
		Decommissioned March 2019							
IW-17B	Property	03/30/18	6.80	142	16.5	–	0.70	-6.3	–
		12/13/18	6.43	1,640	17.1	–	1.61	47.9	–
		Decommissioned March 2019							
IW-21B	Property	04/02/18	7.01	1,709	17.9	–	0.50	74	–
		Decommissioned March 2019							
IW-22B	Property	04/25/18	7.09	693	19.4	–	0.60	98.1	–
		Decommissioned March 2019							
IW-24B	Property	03/30/18	6.92	1,279	17.8	–	0.70	72	–
		Decommissioned March 2019							
IW-28B	Property	04/09/18	6.85 ^(a)	1,028	20.4	–	0.40	-54.5	–
		12/14/18	6.55	2,448	18.1	–	0.55	129	–
		Decommissioned March 2019							
IW-33B	Property	04/02/18	7.03	1,425	16.7	–	0.70	87	–
		Decommissioned March 2019							
IW-37B	Property	03/29/18	7.31	1,156	19.6	–	0.60	76.2	–
		Decommissioned March 2019							
IW-45B	Property	03/28/18	7.40	949	18.0	–	0.70	64	–
		Decommissioned March 2019							
IW-47B	Property	04/10/18	7.52	1,080	20.6	–	0.30	70.3	–
		Decommissioned March 2019							
IW-49B	Property	03/28/18	6.98	1,551	15.6	–	0.60	88	–
		Decommissioned March 2019							
IW-51B	Property	03/28/18	7.69	1,100	15.7	–	0.30	-151	–
		Decommissioned March 2019							
MW-166	Property	11/04/19	6.64	2,204	15.5	4.7	0.20	-166	5.0
MW-170	Property	11/05/19	7.58	1,432	16.5	1.7	0.21	-28.6	1.10
MW-174	Property	11/01/19	6.89	1,550	15.9	2.3	0.35	-146	3.0
MW-178	Property	11/06/19	6.62	3,395	13.3	2.6	0.15	-66.7	3.50
MW-182	Property	11/08/19	7.03	2,831	16.7	7.2	0.15	-134	3.0

Table 3

**Groundwater Field Parameters
American Linen Supply–Dexter Avenue Site
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Sample Location	Property	Sample Date	pH	Specific Conductance (µS/cm)	Temperature (°C)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	ORP (mv)	Ferrous Iron (mg/L)
MW-186	Property	10/31/19	7.54	992	15.1	4.6	0.63	-64	–
Treatment Zone C Wells									
IW-1C	Property	03/29/18 Decommissioned March 2019	7.71	578	14.5	–	0.80	104	–
IW-4C	Property	04/26/18 12/14/18 Decommissioned March 2019	7.91 6.37	725 3,590	17.8 18.5	– –	0.70 34.5	109 185	– –
IW-8C	Property	04/04/18 Decommissioned March 2019	9.13	1,062	15.8	–	2.10	79	–
IW-9C	Property	04/02/18 Decommissioned March 2019	7.36	967	18.5	–	0.80	85.3	–
IW-13C	Property	04/25/18 Decommissioned March 2019	7.68	754	20.7	–	0.70	91	–
IW-15C	Property	03/30/18 12/13/18 Decommissioned March 2019	7.32 6.59	1,343 2,448	19.8 14.7	– –	0.30 22.1	1.9 138	– –
IW-19C	Property	03/29/18 Decommissioned March 2019	7.59	1,122	19.3	–	0.80	98	–
IW-20C	Property	03/30/18 Decommissioned March 2019	7.49	751	19.7	–	0.40	50.5	–
MW-167	Property	11/04/19	7.76	1,051	17.9	1.3	0.43	-184	0.5
MW-171	Property	11/08/19	8.06	583	16.3	36.8	0.17	117	1.00
MW-175	Property	11/01/19	7.56	1,442	17.2	23.9	0.41	-151	0.0
MW-179	Property	11/06/19	6.92	2,192	14.3	5.2	0.10	139	2.00
MW-183	Property	11/08/19	8.09	303	12.8	12.6	0.38	184	0.0
MW-187	Property	11/01/19	7.22	671	9.0	8.6	0.35	-175	2.5
Treatment Zone D Wells									
IW-1D	Property	04/03/18 12/13/18 Decommissioned March 2019	8.96 6.72	591 2,188	20.4 13.1	– –	0.40 0.28	-228 -34	– –
IW-3D	Property	04/03/18 Decommissioned March 2019	7.58	761	21.8	–	0.50	72.3	–
IW-4D	Property	03/29/18 Decommissioned March 2019	8.42	407	13.8	–	0.90	90	–
IW-6D	Property	04/03/18 12/13/18 Decommissioned March 2019	7.73 6.31	366 2,952	18.1 15.1	– –	0.40 34.3	14.3 247	– –
IW-8D	Property	04/04/18 Decommissioned March 2019	7.33	722	20.5	–	0.50	81	–
IW-9D	Property	04/04/18 Decommissioned March 2019	7.63	505	18.5	–	5.50	85.7	–
IW-11D	Property	05/01/18 Decommissioned March 2019	7.96	757	20.9	–	0.60	55.9	–
MW-168	Property	11/04/19	7.54	649	19.4	1.4	1.68	-93	0.0
MW-172	Property	11/05/19	7.65	494	21.2	0.3	1.79	269	–

Table 3

**Groundwater Field Parameters
American Linen Supply–Dexter Avenue Site
700 Dexter Avenue North, Seattle, Washington**

Sample Location	Property	Sample Date	pH	Specific Conductance (µS/cm)	Temperature (°C)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	ORP (mv)	Ferrous Iron (mg/L)
MW-176	Property	11/01/19	7.25	609	20.6	1.4	1.56	-88	0.0
MW-180	Property	11/06/19	7.15	1,752	18.1	19.3	0.19	-11.4	2.50
MW-184	Property	11/08/19	7.83	316	17.1	0.1	1.35	229	0.0
MW-188	Property	10/31/19	7.34	657	18.5	0.3	1.92	-21	0.5

Notes:

1. – = not measured
2. ^(a) = pH meter not giving stable/reliable reading
3. ^(b) = Turbidity reading collected and read with a turbidmeter after water sample collection.
4. * =
5. MAX = Turbidity greater than instrument upper detection limit.

Table 4

**Groundwater Analytical Data for Shallow Zone Wells
American Linen Supply Co–Dexter Avenue Site, 700 Dexter Avenue North, Seattle, Washington**

Sample Location	Area Location	Sample Date	Sampled By	Sampling Method	Analytical Results (micrograms per liter)													
					GRO	DRO	ORO	Benzene	Toluene	Ethylbenzene	Total Xylenes	PCE	TCE	cDCE	tDCE	VC		
Screening Level					800	500	500	0.5	72	29	10,000	2.4	1	16	100	0.2		
Off Property																		
FMW-143 (10 to 5)	9th Ave N ROW	10/31/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U		
MW-6 (31.2 to 16.2)	800 Aloha St Parcel	10/12/93	Retec	Unknown	150,000	–	–	9,100	6,800	2,600	7,300	–	–	–	–	–		
		10/26/93	Retec	Unknown	100,000	–	–	17,000	14,000	1,400	11,000	–	–	–	–	–		
		01/25/94	Retec	Unknown	66,000	–	–	8,800	4,600	1,500	8,100	–	–	–	–	–		
		04/25/94	Retec	Unknown	120,000	–	–	15,000	7,200	2,600	13,300	–	–	–	–	–		
		09/15/94	Retec	Unknown	56,000	–	–	15,000	2,000	1,500	7,100	–	–	–	–	–		
		06/20/02	Urban	Unknown	8,500	–	–	1,900	14	250	53	–	–	–	–	–		
MW-7 (26.1 to 16.1) (duplicate)	800 Aloha St Parcel	10/12/93	Retec	Unknown	75,000	–	–	20,000	22,000	3,000	15,000	–	–	–	–	–		
		10/26/93	Retec	Unknown	74,000	–	–	8,300	7,400	1,100	8,300	–	–	–	–	–		
		01/25/94	Retec	Unknown	53,000	–	–	1,600	2,700	1,400	5,100	–	–	–	–	–		
		04/25/94	Retec	Unknown	140,000	–	–	3,900	7,400	3,100	14,100	–	–	–	–	–		
		09/15/94	Retec	Unknown	66,000	–	–	3,400	2,700	1,900	7,700	–	–	–	–	–		
		09/15/94	Retec	Unknown	77,000	–	–	3,600	3,000	2,100	8,700	–	–	–	–	–		
		06/20/02	Urban	Unknown	8,400	–	–	650	37	470	150	–	–	–	–	–		
		MW-8 (28.7 to 14.2) (duplicate) (dry)	800 Aloha St Parcel	10/26/93	Retec	Unknown	280	–	–	19	1	1 U	48	–	–	–	–	–
				01/25/94	Retec	Unknown	230 J	–	–	13	0.7 J	1 U	4.5	–	–	–	–	–
01/25/94	Retec			Unknown	210 J	–	–	12	0.6 J	1 U	3.7	–	–	–	–	–		
04/25/94	Retec			Unknown	250 U	–	–	2.2	1 U	1 U	1.7	–	–	–	–	–		
09/15/94	Retec			Unknown	210 J	–	–	1 U	0.5 J	1 U	1.6 J	–	–	–	–	–		
09/15/94	Retec			Unknown	250 U	–	–	1 U	0.5 J	1 U	1.7 J	–	–	–	–	–		
06/21/02	Urban			Unknown	50 U	–	–	1 U	1 U	1 U	1 U	–	–	–	–	–		
03/20/17	PES			Peristaltic	–	–	–	0.145 J	0.412 U	0.175 J	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U		
06/27/17	PES			Peristaltic	–	–	–	–	–	–	–	–	–	–	–	–		
04/13/18	PES			Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.570	0.153 U	0.0933 U	0.152 U	0.118 U		
07/18/19	PES			Peristaltic	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U		
10/10/19	PES			Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.167 J	0.0933 U	0.152 U	0.118 U		
MW-9 (33.8 to 18.8) (duplicate)	8th Ave North ROW			10/26/93	Retec	Unknown	210 J	–	–	9.5	1.3	1 U	2 U	–	–	–	–	–
		01/25/94	Retec	Unknown	250 U	–	–	5.7	1.1	1 U	2 U	–	–	–	–	–		
		04/25/94	Retec	Unknown	250 U	–	–	0.001 U	1 U	1 U	2 U	–	–	–	–	–		
		09/15/94	Retec	Unknown	250 U	–	–	3.5	0.6 J	1 U	2 U	–	–	–	–	–		
		06/20/02	Urban	Unknown	50 U	–	–	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U		
		06/02/11	SES	Peristaltic	100 U	150 x	250 U	1 U	1 U	1 U	3 U	–	–	–	–	–		
		09/04/12	SES	Peristaltic	–	–	–	0.35 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U	0.61		
		12/16/13	SES	Peristaltic	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U	0.2 U		
		03/20/17	PES	Peristaltic	52.8 J	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.140 J	0.152 U	0.324 J		
		06/20/17	PES	Peristaltic	31.6 U	–	–	0.0896 U	0.562	0.158 U	0.316 U	0.199 U	0.153 U	0.214 J	0.152 U	0.118 U		
		06/20/17	PES	Peristaltic	31.6 U	–	–	0.0896 U	0.548	0.158 U	0.316 U	0.199 U	0.153 U	0.211 J	0.152 U	0.118 U		
		04/05/18	PES	Peristaltic	32.9 J	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	1.58	0.153 U	0.246 J	0.152 U	0.210 J		
		01/21/19	PES	Peristaltic	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U		
		04/26/19	PES	Peristaltic	121 zJ+	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	157	45.2	75.1	0.261 J	0.861 UJ		
		07/16/19	PES	Peristaltic	57.4 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.619		
10/17/19	PES	Peristaltic	62 J	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.786	0.152 U	0.416 J				

Table 4

**Groundwater Analytical Data for Shallow Zone Wells
American Linen Supply Co–Dexter Avenue Site, 700 Dexter Avenue North, Seattle, Washington**

Sample Location	Area Location	Sample Date	Sampled By	Sampling Method	Analytical Results (micrograms per liter)																								
					GRO		DRO		ORO		Benzene		Toluene		Ethylbenzene		Total Xylenes		PCE		TCE		cDCE		tDCE		VC		
Screening Level					800		500		500		0.5		72		29		10,000		2.4		1		16		100		0.2		
MW-310 (19.2 to 9.2)	Alley Between 8th and 9th	10/10/19	PES	Peristaltic	–		–		–		0.0896 U		0.412 U		0.158 U		0.316 U		0.199 U		0.153 U		0.148 J		0.152 U		0.118 U		
MW-312 (19.9 to 9.9)	Alley Between 8th and 9th	10/11/19	PES	Peristaltic	–		–		–		0.0896 U		0.412 U		0.158 U		0.316 U		0.199 U		0.153 U		0.0933 U		0.152 U		0.118 U		
MW-313 (20.4 to 10.4)	Alley Between 8th and 9th	10/10/19	PES	Bladder	–		–		–		0.0896 U		0.412 U		0.158 U		0.316 U		0.199 U		0.153 U		7.34		0.152 U		1.09		
MW-320 (18.6 to 8.6)	9th Ave N ROW	10/07/19	PES	Peristaltic	–		–		–		0.0896 U		0.459 J		0.158 U		0.316 U		0.199 U		0.153 U		0.0933 U		0.152 U		0.118 U		
R-MW5 (42.0 to 27.0)	Dexter Ave North ROW	10/28/92	Roux	Unknown	93		86		1000 U		0.5 U		1		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		–		0.5 U		
		01/29/09	DOF	Peristaltic	50 U		–		–		0.500 U		0.500 U		0.500 U		1.00 U		0.800		0.200 U		0.200 U		0.200 U		0.200 U		0.200 U
		06/02/11	SES	Peristaltic	100 U		50 U		250 U		0.35 U		1 U		1 U		3 U		1 U		1 U		1 U		1 U		1 U		0.2 U
		09/05/12	SES	Peristaltic	–		–		–		0.35 U		1 U		1 U		3 U		1 U		1 U		1 U		1 U		1 U		0.2 U
		12/18/13	SES	Peristaltic	100 U		50 U		250 U		0.35 U		1 U		1 U		3 U		1 U		1 U		1 U		1 U		1 U		0.2 U
		03/23/17	PES	Peristaltic	–		–		–		0.0896 U		0.412 U		0.158 U		0.316 U		0.338 J		0.186 J		0.0933 U		0.152 U		0.118 U		0.118 U
		06/16/17	PES	Bladder	–		–		–		0.0896 U		0.412 U		0.158 U		0.316 U		0.257 J		0.245 J		0.0933 U		0.152 U		0.118 U		0.118 U
		04/11/18	PES	Bladder	31.6 U		–		–		0.0896 U		0.412 U		0.158 U		0.316 U		0.621		0.153 U		0.0933 U		0.152 U		0.118 U		0.118 U
		01/03/19	PES	Peristaltic	81.5 J		–		–		0.0896 U		0.412 U		0.158 U		0.316 U		0.477 J		0.153 U		0.0933 U		0.152 U		0.118 U		0.118 U
		04/22/19	PES	Peristaltic	31.6 U		–		–		0.0896 U		0.428 J		0.158 U		0.316 U		0.499 J		0.155 J		0.0933 U		0.152 U		0.118 U		0.118 U
		07/16/19	PES	Bladder	31.6 U		–		–		0.0896 U		0.412 U		0.158 U		0.316 U		0.736		0.153 U		0.0933 U		0.131 J		0.152 U		0.118 U
10/21/19	PES	Bladder	95.3 J		–		–		0.0896 U		0.412 U		0.158 U		0.316 U		0.523		0.153 U		0.0933 U		0.302 J		0.152 U		0.118 U		
R-MW6 (33.3 to 23.3)	8th Ave North ROW	10/28/92	Roux	Unknown	50 U		50 U		1000 U		0.5 U		2		0.5 U		2		4,500		920		2,600		–		240		
		11/03/92	DOF	Unknown	–		–		–		–		–		–		–		690		160		620		–		40 U		
		01/29/09	DOF	Peristaltic	50.0 U		–		–		0.500 U		0.500 U		0.500 U		1.00 U		1.78		0.200 U		2.64		0.200 U		2.75		
		05/03/10	SES	Peristaltic	–		–		–		–		–		–		–		1 U		1 U		1.2		1 U		2.8		
		06/02/11	SES	Peristaltic	100 U		120 x		250 U		0.35 U		1 U		1 U		3 U		1 U		1 U		1 U		1 U		2.1		
		09/05/12	SES	Peristaltic	–		–		–		0.35 U		1 U		1 U		3 U		1 U		1 U		1 U		1 U		1 U		0.2 U
		03/21/17	PES	Peristaltic	42.8 J		–		–		0.0896 U		0.412 U		0.158 U		0.316 U		1.08		3.17		20.0		0.242 J		8.65		
		06/20/17	PES	Peristaltic	38.5		–		–		0.167 J		0.619		0.158 U		0.316 U		1.19		0.878		37.3		0.445 J		43.9		
		04/06/18	PES	Peristaltic	31.6 U		–		–		0.0896 U		0.412 U		0.158 U		0.316 U		1.85		2.24		19.4		0.277 J		26.9		
		01/25/19	PES	Peristaltic	–		–		–		0.142 J		0.412 U		0.158 U		0.316 U		0.328 J		1.07		12.5		0.152 U		9.14		
		04/25/19	PES	Peristaltic	31.6 U		–		–		0.0896 U		0.412 U		0.158 U		0.316 U		0.199 U		0.370 J		11.8		0.168 J		7.16 J		
SCL-MW101 (25.5 to 15.5)	Alley Between 8th & 9th Ave N	03/28/17	PES	Peristaltic	–		–		–		6.74		0.624 U		0.598		2.08		0.199 U		0.153 U		0.0933 U		0.152 U		0.118 U		
		06/14/17	PES	Peristaltic	–		–		–		18.6		1.68		17.1		3.50		0.199 U		0.153 U		0.0933 U		0.152 U		0.118 U		
		04/06/18	PES	Peristaltic	–		–		–		10.6		1.24		11.7		3.32		0.199 U		0.153 U		0.0933 U		0.152 U		0.118 U		
		10/09/19	PES	Peristaltic	–		–		–		11.2		2.39		16.6		3.77		0.199 U		0.153 U		0.0933 U		0.152 U		0.118 U		
SCL-MW105 (11.3 to 1.3)	Alley Between 8th & 9th Ave N	03/28/17	PES	Peristaltic	–		–		–		257		16.3		26.5		33.9		0.995 U		0.765 U		0.466 U		0.760 U		0.590 U		
		06/15/17	PES	Peristaltic	–		–		–		208		14.3		109		40.8		0.199 U		0.153 U		0.0933 U		0.152 U		0.118 U		
		04/06/18	PES	Peristaltic	–		–		–		181		12.1		26.6		28.4		1.99 U		1.53 U		0.933 U		1.52 U		1.18 U		
		10/10/19	PES	Peristaltic	–		–		–		133		15.5		41.0		34.6		0.199 U		0.153 U		0.0933 U		0.152 U		0.118 U		

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Sample Location	Area Location	Sample Date	Sampled By	Sampling Method	Analytical Results (micrograms per liter)													
					GRO	DRO	ORO	Benzene	Toluene	Ethylbenzene	Total Xylenes	PCE	TCE	cDCE	tDCE	VC		
Screening Level					800	500	500	0.5	72	29	10,000	2.4	1	16	100	0.2		
SCS-2 (28.2 to 18.2) (duplicate)	800 Aloha St Parcel	03/20/17	PES	Peristaltic	1,660	–	–	51.8	9.54	155	181	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U		
		06/12/17	PES	Peristaltic	901	–	–	58.9	4.49	141	70.4	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U		
		04/13/18	PES	Peristaltic	–	–	–	44.3	5.18	37.3	47.7	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U		
		07/18/19	PES	Peristaltic	2,190 J+	–	–	15.5	3.71	141	149	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U		
		07/18/19	PES	Peristaltic	2,320 J+	–	–	15.0	3.37	187	131	0.199 U	0.153 U	0.0933 U	0.152 U	0.242 J		
		10/10/19	PES	Peristaltic	–	–	–	20.3	6.00	307	123	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U		
SMW-3 (17.1 to 7.1)	Valley St ROW	03/30/17	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U		
		06/21/17	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U		
		04/09/18	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U		
		10/11/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U		
Decommissioned Wells																		
F5 (--)	Property	07/19/13	SES	Peristaltic	–	–	–	–	–	–	–	120,000	1,100	700	5.20	4.2		
		10/24/13	SES	Peristaltic	–	–	–	–	–	–	–	21,000	1,200	1,000	1,000	200 U		
		03/28/17	PES	Peristaltic	234 zJ+	–	–	0.515	0.727 U	0.158 U	0.316 U	0.199 U	0.241 J	516	4.31	90.6		
		06/22/17	PES	Peristaltic	31.6 U	–	–	0.374 J	0.708	0.158 U	0.316 U	0.199 U	0.485	10.4	0.485 J	63.9		
		Decommissioned March 2019																
F9 (--)	Property	07/19/13	SES	Peristaltic	–	–	–	–	–	–	–	140,000	3,400	1,100	8.6	78		
		06/16/15	SES	Peristaltic	–	–	–	–	–	–	–	3.7	1.8	680	12	74		
		10/19/15	SES	Peristaltic	–	–	–	–	–	–	–	15.0	6.6	840	13	75		
		02/01/16	SES	Peristaltic	–	–	–	–	–	–	–	2.9	1 U	1.3	1 U	20		
		03/27/17	PES	Peristaltic	31.6 U	–	–	0.529	2.04	0.158 U	0.316 U	0.199 U	0.153 U	0.158 J	0.539	0.118 U		
		06/22/17	PES	Peristaltic	31.6 U	–	–	0.471 J	1.70	0.158 U	0.316 U	0.199 U	0.153 U	6.10	0.485	3.57		
Decommissioned March 2019																		
F13 (--)	Property	07/19/13	SES	Peristaltic	–	–	–	–	–	–	–	2,900	280	370	100 U	49		
		10/24/13	SES	Peristaltic	–	–	–	–	–	–	–	7,300	3,100	490	50 U	10 U		
		11/18/13	SES	Peristaltic	–	–	–	–	–	–	–	67,000	6,600	3,200	85	48		
		12/12/13	SES	Peristaltic	–	–	–	–	–	–	–	1,100	340	670	10 U	20		
		03/07/14	SES	Peristaltic	–	–	–	–	–	–	–	84	11	10	1 U	0.36		
		06/16/15	SES	Peristaltic	–	–	–	–	–	–	–	8.4	1 U	1.8	1 U	0.31		
		10/19/15	SES	Peristaltic	–	–	–	–	–	–	–	1 U	2.0	210	2.3	4.1		
		02/02/16	SES	Peristaltic	–	–	–	–	–	–	–	3.4	1 U	1 U	1 U	0.97		
		03/27/17	PES	Peristaltic	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.218 J	0.152 U	0.936		
		06/22/17	PES	Peristaltic	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.194 J	0.152 U	1.32		
		04/05/18	PES	Peristaltic	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	20.3	0.346 J	0.375 J	0.152 U	0.843		
Decommissioned March 2019																		
G12 (--)	Property	07/19/13	SES	Peristaltic	–	–	–	–	–	–	–	64,000	3,100	9,200	88	130		
		10/24/13	SES	Peristaltic	–	–	–	–	–	–	–	1,700	150	100 U	100 U	20 U		
		11/18/13	SES	Peristaltic	–	–	–	–	–	–	–	760	84	42	10 U	2 U		
		03/27/17	PES	Peristaltic	–	–	–	0.243 J	0.412 U	0.158 U	0.316 U	0.199 U	0.233 J	95.9	1.97	28.4		
		06/30/17	PES	Peristaltic	–	–	–	0.282 J	0.412 U	0.158 U	0.316 U	0.199 U	0.323 J	115	2.94	31.5		
Decommissioned March 2019																		

Table 4

**Groundwater Analytical Data for Shallow Zone Wells
American Linen Supply Co–Dexter Avenue Site, 700 Dexter Avenue North, Seattle, Washington**

Sample Location	Area Location	Sample Date	Sampled By	Sampling Method	Analytical Results (micrograms per liter)											
					GRO	DRO	ORO	Benzene	Toluene	Ethylbenzene	Total Xylenes	PCE	TCE	cDCE	tDCE	VC
Screening Level					800	500	500	0.5	72	29	10,000	2.4	1	16	100	0.2
G-MW2 (31 to 21)	Property	07/24/01	GeoE	Peristaltic	–	–	–	0.375	48.3 E	2.01	12.88	176,000	237 g	129 g	1.02	0.457
		01/29/09	DOF	Peristaltic	39,600 qp	–	–	20.0 U	20.0 U	20.0 U	48.9	59,000 f	210	373	1.33	0.200 U
		06/02/11	SES	Peristaltic	59,000 xy	200	250 U	350 U	1,000 U	1,000 U	3,000 U	150,000	1000 U	1000 U	1000 U	200 U
		09/06/12	SES	Peristaltic	–	–	–	0.35 U	12	1.1	4.7	150,000	320	260	1.4	0.2 U
Decommissioned																
J5 (--)	Property	07/19/13	SES	Peristaltic	–	–	–	–	–	–	–	46,000	660	100 U	100 U	20 U
		10/24/13	SES	Peristaltic	–	–	–	–	–	–	–	48,000	13,000	1,400	100 U	20 U
		06/16/15	SES	Peristaltic	–	–	–	–	–	–	–	1,100	340	250	51	1.0
		10/19/15	SES	Peristaltic	–	–	–	–	–	–	–	1,400	470	890	51	1.3
		02/02/16	SES	Peristaltic	–	–	–	–	–	–	–	1,500	110	280	14	0.31
		03/21/17	PES	Peristaltic	–	–	–	0.580	0.412 U	0.158 U	0.316 U	285	78.5	253	1.73	29.6
		06/26/17	PES	Peristaltic	–	–	–	0.252 J	0.506	0.158 U	0.316 U	36.1	37.1	366	1.94	77.7
04/05/18	PES	Peristaltic	207	–	–	0.638	0.412 U	0.158 U	0.316 U	267	70.5	222	1.00	17.6		
Decommissioned March 2019																
J15 (--)	Property	07/19/13	SES	Peristaltic	–	–	–	–	–	–	–	4,100	220	580	6.8	20
		10/24/13	SES	Peristaltic	–	–	–	–	–	–	–	10,000	1,100	680	100 U	20 U
		03/07/14	SES	Peristaltic	–	–	–	–	–	–	–	2,200	170	120	50 U	10 U
	Property	06/16/15	SES	Peristaltic	–	–	–	–	–	–	–	9.0	12	310	8.8	3.1
		10/19/15	SES	Peristaltic	–	–	–	–	–	–	–	3.6	1 U	110	3.0	1.7
		02/02/16	SES	Peristaltic	–	–	–	–	–	–	–	2.4	1 U	35	1 U	0.39
		03/27/17	PES	Peristaltic	–	–	–	0.188 J	0.495 J	0.158 U	0.316 U	0.199 U	0.153 U	43.3	1.18	6.99
		06/26/17	PES	Peristaltic	–	–	–	0.173 J	0.459 J	0.158 U	0.316 U	0.199 U	0.153 U	39.8	1.06	6.30
		06/26/17	PES	Peristaltic	–	–	–	0.173 J	0.551 J	0.158 U	0.316 U	0.199 U	0.153 U	39.3	1.03	6.73
04/05/18	PES	Peristaltic	41.2 J	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	12.8	0.358 J	26.3	0.709	6.07		
Decommissioned March 2019																
K8 (--)	Property	07/19/13	SES	Peristaltic	–	–	–	–	–	–	–	8,700	330	1,400	5.6	6.3
		06/17/15	SES	Peristaltic	–	–	–	–	–	–	–	63	16	500	67	2 U
		10/19/15	SES	Peristaltic	–	–	–	–	–	–	–	360	82	43	3.2	0.44
		02/01/16	SES	Peristaltic	–	–	–	–	–	–	–	250	44	82	1.8	0.31
		03/21/17	PES	Peristaltic	–	–	–	0.239 J	0.412 U	0.158 U	0.316 U	82.5	22.0	123	0.680	0.461 J
		06/26/17	PES	Peristaltic	–	–	–	0.246 J	0.412 U	0.158 U	0.316 U	67.9	28.7	140	0.750	0.456 J
		04/05/18	PES	Peristaltic	156 zJ+	–	–	0.251 J	0.412 U	0.158 U	0.316 U	229	26.3	104	0.750	1.45
Decommissioned March 2019																
M15 (--)	Property	07/19/13	SES	Peristaltic	–	–	–	–	–	–	–	3,200	110	180	1.7	0.22
		10/24/13	SES	Peristaltic	–	–	–	–	–	–	–	56,000	1,100	770	50 U	10 U
		03/07/14	SES	Peristaltic	–	–	–	–	–	–	–	2,100	190	290	2.9	2.60
		06/16/15	SES	Peristaltic	–	–	–	–	–	–	–	58	44	76	2.7	1.1
		10/19/15	SES	Peristaltic	–	–	–	–	–	–	–	48	29	110	2.3	0.74
		02/02/16	SES	Peristaltic	–	–	–	–	–	–	–	11	10	84	1.8	0.39
		03/27/17	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.733	32.7	0.561	13.2
		03/27/17	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.670	31.7	0.513	12.0
		06/26/17	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.233 J	1.80	25.8	0.523	15.0
04/05/18	PES	Peristaltic	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.563	8.89	0.300 J	11.1		
Decommissioned March 2019																

Table 4

**Groundwater Analytical Data for Shallow Zone Wells
American Linen Supply Co–Dexter Avenue Site, 700 Dexter Avenue North, Seattle, Washington**

Sample Location	Area Location	Sample Date	Sampled By	Sampling Method	Analytical Results (micrograms per liter)												
					GRO	DRO	ORO	Benzene	Toluene	Ethylbenzene	Total Xylenes	PCE	TCE	cDCE	tDCE	VC	
Screening Level					800	500	500	0.5	72	29	10,000	2.4	1	16	100	0.2	
N7 (--)	Property	07/19/13	SES	Peristaltic	–	–	–	–	–	–	–	–	640	50	18	1 U	0.2 U
		10/19/15	SES	Peristaltic	–	–	–	–	–	–	–	–	2,900	99	9.9	1 U	0.2 U
		02/02/16	SES	Peristaltic	–	–	–	–	–	–	–	–	230	79	1,700	2.9	0.92
		03/30/17	PES	Peristaltic	–	–	–	0.178 J	0.412 U	0.158 U	0.316 U	280	50.4	125	0.396 J	0.310 J	
		06/27/17	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	205	85.1	153	0.955	0.386 J	
Decommissioned March 2019																	
R-MW1 (33.8 to 23.8)	Property	10/24/92	Roux	Unknown	57	1,345	6,000	1	1	0.5 U	0.5 U	5 U	5 U	–	5 U	100	
		10/24/92	DOF	Unknown	53	26,000	12,000	0.61	0.83	0.50 U	1.0 U	4.2	0.82	12.0 c	–	170	
		10/24/92	Roux	Unknown	54	290	5,000	0.58	1	0.5 U	0.5 U	2.3	2 U	14	NA	140	
		01/29/09	DOF	Peristaltic	50.0 U	–	–	0.500 U	0.500 U	0.500 U	1.00 U	17.1	4.26	1.60	0.200 U	0.630	
		06/02/11	SES	Peristaltic	100 U	1,000 x	740	0.35 U	1 U	1 U	3 U	7.9	2.7	1.9	1 U	0.68	
		09/05/12	SES	Peristaltic	–	–	–	0.35 U	1 U	1 U	3 U	16	3.6	2.1	1 U	2.20	
Decommissioned																	
R-MW2 (36.7 to 26.7)	Property	10/24/92	Roux	Unknown	4,200	34	2,000	684	17	301	403	5 U	5 U	–	5 U	5 U	
		10/24/92	DOF	Unknown	4,000	16,000	25,000	310	0.50	140	180	–	–	–	–	–	
		01/29/09	DOF	Peristaltic	657	–	–	0.500 U	0.557	0.513	2.08	5.05	0.200 U	0.200 U	0.200 U	0.200 U	
		06/02/11	SES	Peristaltic	1,700	3,100	290 x	19	1 U	1 U	3 U	1 U	1 U	1 U	1 U	0.2 U	
		09/04/12	SES	Peristaltic	–	–	–	0.35 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U	0.2 U	
		03/21/17	PES	Peristaltic	–	–	–	0.272 J	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.341 J	0.152 U	0.522	
		06/15/17	PES	Peristaltic	–	–	–	0.694	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.682	0.152 U	0.609	
		04/02/18	PES	Peristaltic	38.0 U	–	–	0.568	0.412 U	0.158 U	0.316 U	0.866	0.620	2.48	0.152 U	1.33	
Decommissioned March 2019																	
R-MW3 (34.7 to 24.7)	Property	10/24/92	Roux	Unknown	87	3,015	1,200	0.5 U	0.5 U	0.5 U	0.5 U	5 U	5 U	–	5 U	5 U	
		10/24/92	DOF	Unknown	50 U	–	–	0.50 U	0.50 U	0.50 U	1.0 U	–	–	–	–	–	
		01/29/09	DOF	Peristaltic	50.0 U	–	–	0.500 U	0.500 U	0.500 U	1.00 U	4.26	0.200 U	0.200 U	0.200 U	0.200 U	
		06/02/11	SES	Peristaltic	100 U	240 x	250 U	0.35 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U	0.2 U	
		09/04/12	SES	Peristaltic	–	–	–	0.35 U	1 U	1 U	3 U	6.4	1 U	1 U	1 U	0.2 U	
		03/21/17	PES	Peristaltic	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	1.38	0.714	0.575	0.152 U	0.118 U	
		06/28/17	PES	Peristaltic	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.834	0.582	0.735	0.152 U	0.424 J	
		04/04/18	PES	Peristaltic	33.7 J	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	16.4	0.972	1.35	0.152 U	0.214 J	
Decommissioned March 2019																	
R-MW4 (25.9 to 10.9)	Roy St ROW	10/24/92	Roux	Unknown	410	201	1000 U	0.5 U	2	1	4	814	64	–	5 U	5 U	
		10/24/92	DOF	Unknown	640	–	–	0.5 U	1.8	0.5 U	3.1	31	2.8	2.0 U	–	2.0 U	
Decommissioned before 2009																	
MW-1 (--)	800 Aloha St Parcel	03/22/93	EPJ	Bailer	5,100	500 U	1000 U	10,000	270	480	427	–	–	–	–	–	
		06/17/93	Retec	Unknown	–	–	–	20,000	14,000	840	6,700	–	–	–	–	–	
Decommissioned on October 12, 1993																	
MW-2 (--)	8th Ave North ROW	03/22/93	EPJ	Bailer	650	500 U	1000 U	100	42	24	67	–	–	–	–	–	
		06/17/93	Retec	Unknown	–	–	–	28	7.2	1 U	2 U	170	1,400	9,300	25	1,100	
Decommissioned on October 12, 1993																	
MW-3 (--)	800 Aloha St Parcel	03/22/93	EPJ	Bailer	27,000	500 U	1000 U	1,500	3,300	690	3,500	–	–	–	–	–	
		06/17/93	Retec	Unknown	–	–	–	4,800	21,000	1,900	12,300	–	–	–	–	–	
Decommissioned on October 12, 1993																	

Table 4

**Groundwater Analytical Data for Shallow Zone Wells
American Linen Supply Co–Dexter Avenue Site, 700 Dexter Avenue North, Seattle, Washington**

Sample Location	Area Location	Sample Date	Sampled By	Sampling Method	Analytical Results (micrograms per liter)											
					GRO	DRO	ORO	Benzene	Toluene	Ethylbenzene	Total Xylenes	PCE	TCE	cDCE	tDCE	VC
Screening Level					800	500	500	0.5	72	29	10,000	2.4	1	16	100	0.2
MW-4 (--)	800 Aloha St Parcel	03/22/93	EPJ	Bailer	940	500 U	1000 U	82	390	39	108	–	–	–	–	–
		06/17/93	Retec	Unknown	–	–	–	1 U	1 U	1 U	2 U	–	–	–	–	–
Decommissioned on October 12, 1993																
MW-5 (--)	8th Ave North ROW	03/22/93	EPJ	Bailer	670	500 U	1000 U	49	140	9.8	80	–	–	–	–	–
		06/17/93	Retec	Unknown	–	–	–	1 U	1 U	1 U	2 U	–	–	–	–	–
Decommissioned on October 12, 1993																
Number of Analytes Measured					121	25	25	178	178	178	178	184	184	180	178	184
Number of Analytes Detected					52	16	8	71	65	40	45	103	90	117	54	96
Frequency of Detection					43%	64%	32%	40%	37%	22%	25%	56%	49%	65%	30%	52%
Maximum Detection					150,000	26,000	25,000	20,000	22,000	3,100	15,000	176,000	13,000	9,300	1,000	1,100
Minimum Detection					31.6 U	34.0	250 U	0.001 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U
<u>Notes:</u>					<u>Laboratory and Results Notes:</u>											
Petroleum hydrocarbons analyzed by EPA Method 418.1, NWTPH-HCID, or NWTPH-Gx, NWTPH-Dx, or 8015-M					Detected results shown in bold, detections above the screening level highlighted in gray											
VOCs analyzed by EPA Method 601, 8010S, 8015, 8020, 8021B, 8240, 8260B, or 8260C or by Purge and Trap Gas Chromatogram/Mass Spectrometry.					– = Not analyzed or results not available											
cDCE = cis-1,2-dichloroethene					B = the same analyte is found in the associated blank											
DOF = Dalton, Olmsted & Fuglevand, Inc.					c = Reported as total 1,2,-DCE (sum of cis,-1,2- and trans,1-2-DCE isomers)											
DRO = diesel-range organics					E = Estimated value. The reported range exceeds the calibration range of the analysis											
GeoE = GeoEngineers, Inc.					f = Analyte was detected in the associated method blank. Analyte concentration in the sample is greater than 10x the concentration found in the method blank											
GRO = gasoline-range organics					g = Estimated value. The reported range exceeds the calibration range of the analysis											
HC = Hart Crowser					J = the identification of the analyte is acceptable; the reported value is an estimate											
ORO = oil-range organics					J+ = The result is an estimated quantity, but the result may be biased high.											
PCE = perchloroethylene (tetrachloroethene)					qp = Hydrocarbon result partly due to individual peak(s) in quantitation range											
Retec = Remediation Technologies, Inc.					U = not detected at or above the laboratory method detection limit (MDL)											
Roux = Roux Associates					x = The sample chromatographic pattern does not resemble the fuel standard used for quantitation											
ROW = right of way					y = The GRO result in the sample is due to a pattern of peaks that is consistent with the chlorinated volatiles detected by the 8260C analysis											
SES = SoundEarth Strategies, Inc.																
TCE = trichloroethene																
tDCE = trans-1,2-dichloroethene																
Urban =																
VC = vinyl chloride																
Well screen elevations indicated below Sample Location in parentheses.																
(--) = unknown screen elevation																

Table 5

**Groundwater Analytical Data for Intermediate Zone Wells
American Linen Supply Co–Dexter Avenue Site, 700 Dexter Avenue North, Seattle, Washington**

Sample Location	Area Location	Sample Date	Sampled By	Sampling Method	Analytical Results (micrograms per liter)												
					GRO	DRO	ORO	Benzene	Toluene	Ethylbenzene	Total Xylenes	PCE	TCE	cDCE	tDCE	VC	
Screening Level					800	500	500	0.5	72	29	10,000	2.4	1	16	100	0.2	
Intermediate A Zone, On Property																	
G-MW1 (9.0 to 4.0) (duplicate)	The Property	07/24/01	GeoE	Peristaltic	–	–	–	0.449	17.6 E	0.798	5.52	85,500	1,130	23.3 g	0.956	74.5 g	
		01/29/09	DOF	Peristaltic	41,300 qp	–	–	20.0 U	20.0 U	28.6	55.1	78,400 f	1,160	34.4	1.49	0.200 U	
		06/03/11	SES	Peristaltic	29,000 x	92 x	250 U	–	–	–	–	78,000	1,100	22	–	33	
		09/06/12	SES	Peristaltic	–	–	–	0.35 U	7.4	1 U	1.1	66,000	1,100	32	1.5	35	
		09/06/12	SES	Peristaltic	–	–	–	0.35 U	7.6	1 U	1.0	64,000	1,100	30	1.4	33	
		Decommissioned															
G-MW3 (13.6 to 3.6)	The Property	07/24/01	GeoE	Peristaltic	–	–	–	0.524	6.93 E	0.459	2.10	47,700	385 g	0.200 U	3.71	42.5 g	
		12/10/04	DOF	Bailer	–	–	–	2 U	7	2 U	2	220,000	1,200	570	6	19	
		01/29/09	DOF	Peristaltic	26,600 qp	–	–	12.5 U	12.5 U	12.5 U	25.0 U	64,000 f	1,580	4,050	13.9	0.200 U	
		06/02/11	SES	Peristaltic	19,000 xy	210 x	250 U	350 U	1,000 U	1,000 U	3,000 U	33,000	1,400	1,500	1000 U	290	
		09/06/12	SES	Peristaltic	–	–	–	0.35 U	1.5	1 U	3 U	31,000	1,200	1,600	5.9	290	
		Decommissioned															
MW131 (-4.6 to -14.6)	Property	03/27/17	SES	Peristaltic	91.9 J	–	–	0.199 J	0.462 J	0.158 U	0.316 U	0.199 U	0.153 U	243	0.981	804	
		06/20/17	PES	Peristaltic	31.6 U	–	–	0.448 U	2.06 U	0.790 U	1.58 U	0.995 U	0.765 U	2.55	0.760 U	435	
		04/16/18	PES	Peristaltic	55.3 U	–	–	0.142 J	0.412 U	0.158 U	0.316 U	7.05	3.25	10.4	0.276 J	18.0	
		10/25/18	PES	Peristaltic	57.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.895	0.347 J	1.65 J+	0.152 U	1.83	
		12/12/18	PES	Peristaltic	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.172 J	1.2	0.152 U	1.39	
		1/29/19	PES	Peristaltic	43.7 J	–	–	0.182 J	0.516 J+	0.158 U	0.316 U	0.199 U	0.153 U	0.774	0.152 U	0.539	
		3/11/19	PES	Peristaltic	31.6 U	–	–	0.152 J	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.250 J	0.152 U	0.118 U	
		Decommissioned March 2019															
MW-149 (0.7 to -9.3) (duplicate)	Property	04/10/18	PES	Peristaltic	11,700 z	–	–	44.8 U	2.06 U	0.813 J	1.64 J	19,200	8,050	10,500	29.8	863	
		10/25/18	PES	Peristaltic	4,570 zJ+	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	6,100	2,720	3,320	15.3	100	
		12/13/18	PES	Peristaltic	11,400 zJ+	–	–	0.0896 U	0.717	0.158 U	0.414 J	23,300	5,470	5,150	18.2	253	
		12/13/18	PES	Peristaltic	11,400 zJ+	–	–	0.0896 U	0.717	0.158 U	0.392 J	24,500	5,780	5,210	18.2	243 J	
		01/29/19	PES	Peristaltic	14,400 zJ+	–	–	8.96 U	41.2 U	15.8 U	31.6 U	23,700	3,800	4,350	15.2 U	155	
		03/13/19	PES	Peristaltic	15,300 zJ+	–	–	0.222 J	0.862	0.843	0.490 J	2,630	2,770	30,800	129	285	
		Decommissioned March 2019															
MW-151 (4.9 to -5.1)	Property	04/10/18	PES	Peristaltic	74.6 U	–	–	0.253 J	0.412 UJ	0.158 UJ	0.316 U	1.13	0.310 J	59.1 J-	0.388 J-	11.4	
		10/25/18	PES	Peristaltic	99.4 U	–	–	0.167 J	0.412 U	0.158 U	0.316 U	2.28	1.38	5.80	0.346 J	7.7	
		12/14/18	PES	Peristaltic	1,040 zJ+	–	–	0.342 J	0.44 J	0.158 U	0.316 U	1,460	155	1,690	4.56	530	
		1/31/19	PES	Peristaltic	340 zJ+	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	106	40.4	466	3.52	158	
		3/12/19	PES	Peristaltic	143 zJ+	–	–	0.159 J	0.412 U	4.88	0.316 U	0.981	1.36	196	1.60	24.9	
		Decommissioned March 2019															
Intermediate A Zone, Off Property																	
BB-5	North of Mercer St ROW	11/17/97	B&V	Bailer	250 U	630 U	630 U	ND	ND	ND	ND	ND	ND	ND	1.1	ND	ND
		Decommissioned															
BB-7	Westlake Ave North ROW	11/17/97	B&V	Bailer	250 U	630 U	630 U	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
		Decommissioned															
BB-8 (13. to 3.7)	Roy St ROW	06/24/97	B&V	Bailer	200 U	500 U	1000 U	1.8	1.3	1.0 U	1.0 U	11,000	1,500	4,200	14	280	
		01/29/09	DOF	–	499	–	–	0.694	0.500 U	0.500 U	1.00 U	896 f	258	441	2.45	1.48	
		05/03/10	SES	Peristaltic	–	–	–	–	–	–	–	510	120	110	1 U	0.27	
		06/02/11	SES	Peristaltic	130 xy	50 U	250 U	0.35 U	1 U	1 U	3 U	170	59	44	1 U	0.2 U	
		09/05/12	SES	Peristaltic	–	–	–	0.35 U	1 U	1 U	3 U	200	41	28	1 U	0.2 U	
		12/29/13	SES	Bladder	–	–	–	0.35 U	1 U	1 U	3 U	200	38	24	1 U	0.2 U	
		06/17/15	SES	Peristaltic	–	–	–	–	–	–	–	170	40	37	10 U	2.0	
		03/22/17	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	30.4	4.95	3.10	0.152 U	0.118 U	
		06/14/17	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	26.0	8.57	12.6	0.155 J	0.118 U	
04/11/18	PES	Peristaltic	40.9 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	33.7 J	6.13 J	4.64 J	0.152 U	0.118 U			

Table 5

**Groundwater Analytical Data for Intermediate Zone Wells
American Linen Supply Co–Dexter Avenue Site, 700 Dexter Avenue North, Seattle, Washington**

Sample Location	Area Location	Sample Date	Sampled By	Sampling Method	Analytical Results (micrograms per liter)																							
					GRO	DRO	ORO	Benzene	Toluene	Ethylbenzene	Total Xylenes	PCE	TCE	cDCE	tDCE	VC												
Screening Level					800	500	500	0.5	72	29	10,000	2.4	1	16	100	0.2												
(duplicate)		04/11/18	PES	Peristaltic	41.5	U	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	46.8	J	8.41	J	6.28	J	0.152	U	0.118	U		
		01/23/19	PES	Peristaltic	99.6	J	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	133		43.1		81.5		0.402	J	0.618			
		04/23/19	PES	Peristaltic	31.6	U	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	48.8		9.09		7.57		0.152	U	0.118	U		
		07/17/19	PES	Bladder	112	J+	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	169		28.9		19.3		0.262	J	0.118	U		
		10/22/19	PES	Bladder	176		–	–	0.0896	U	0.412	U	0.158	U	0.316	U	135		46.6		31.8		0.398	J	0.162	J		
		10/22/19	PES	Bladder	174		–	–	0.0896	U	0.412	U	0.158	U	0.316	U	169		48.3		30.4		0.426	J	0.152	J		
BB-8A	Roy St ROW	01/29/09	DOF	Peristaltic	669		–	–	0.500	U	0.500	U	0.500	U	1.00	U	1,290	f	285		549		2.96		3.86			
		05/03/10	SES	Peristaltic	–		–	–	–		–		–		–		810		180		140		1.6		0.78			
		06/02/11	SES	Peristaltic	380	xy	50	U	250	U	3.5	U	10	U	10	U	30	U	710		170		10	U	2	U		
BB-12	9th Ave North ROW	05/19/98	B&V	Bailer	250	U	630	U	630	U	ND		ND		ND		ND		ND		540		ND		380			
		05/02/10	SES	Peristaltic	–		–	–	–		–		–		1	U	1	U	1	U	1	U	1	U	0.2	U		
BB-12A	9th Ave North ROW	05/02/10	SES	Peristaltic	–		–	–	–		–		–		1	U	1	U	1	U	1	U	1	U	0.2	U		
		Decommissioned																										
FMW-142 (2.4 to -7.6)	9th Ave N ROW	10/31/19	PES	Peristaltic	–		–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U		
GEI-MW-1	739 9th Ave N	09/06/14	GeoE	Peristaltic	50.0	U	50.0	U	100	U	1.00	U	1.00	U	1.00	U	0.250		0.240		1.00	U	0.500	U	0.200	U		
GEI-MW-2	739 9th Ave N	09/06/14	GeoE	Peristaltic	28.9		50.0	U	100	U	14.1		4.44		1.00	U	1.00	U	0.410		1.00	U	0.500	U	1.34			
GEI-MW-3	739 9th Ave N	09/06/14	GeoE	Peristaltic	50.0	U	50.0	U	100	U	1.00	U	9.03		1.00	U	1.00	U	0.610		1.00	U	0.500	U	3.14			
GEI-1 (1.2 to -8.8)	Block 37	03/24/17	PES	Peristaltic	–		–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U		
		06/13/17	PES	Bladder	–		–	–	0.0896	U	0.412	U	0.244	J	0.316	U	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U		
		04/22/19	PES	Peristaltic	–		–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U		
		07/16/19	PES	Bladder	–		–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U		
		10/21/19	PES	Peristaltic	–		–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U		
HMW-2IA (12.8 to 2.8)	Mercer Megablock	03/25/19	HC	Peristaltic	100	U	200	U	500	U	1.0	U	1.0	U	1.0	U	240		74		120		1.0	U	1.2			
HMW-3IA (20.0 to 10.0)	Mercer Megablock	03/25/19	HC	Peristaltic	100	U	200	U	500	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	0.2	U		
HMW-4IA (8.8 to -1.2)	Mercer Megablock	03/25/19	HC	Peristaltic	100	U	200	U	500	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	0.2	U		
MW107 (8.8 to -1.2)	8th Ave North ROW (duplicate)	12/21/12	SES	Peristaltic	240,000	xy	190	x	250	U	3.5	U	10	U	10	U	30	U	47,000		2,800		5,100		41		200	
		12/21/12	SES	Peristaltic	–		–	–	–		–		–		–		50,000		3,000		5,200		44		270			
		12/16/13	SES	Peristaltic	–		–	–	0.37	U	1.8		1	U	3.3		32,000		2,400		4,000		34		76			
		06/17/15	SES	Peristaltic	–		–	–	–		–		–		–		1,900		5,000		5,000		100	U	40			
		10/20/15	SES	Peristaltic	–		–	–	–		–		–		–		2,300		5,100		3,600		60		27			
		11/10/15	SES	Peristaltic	–		–	–	–		–		–		–		620		3,800		4,400		54		31			
		12/11/15	SES	Peristaltic	–		–	–	–		–		–		–		1,200		4,200		4,200		57		22			
		01/08/16	SES	Peristaltic	–		–	–	–		–		–		–		1,000		3,600		3,900		50		20			
		02/01/16	SES	Peristaltic	–		–	–	–		–		–		–		61		220		10,000		33		73			
		03/27/17	PES	Peristaltic	–		–	–	0.204	J	0.690	J	0.158	U	0.316	U	0.224	J	0.370	J	6.82		14.0		34.5			
		06/19/17	PES	Peristaltic	–		–	–	0.238	J	0.700		0.158	U	0.316	U	0.199	U	0.290	J	7.29		12.6		15.0			
		04/09/18	PES	Peristaltic	–		–	–	0.193	J	0.412	U	0.158	U	0.316	U	0.879	J-	0.581	J-	72.1	J-	10.5		123			
		01/30/19	PES	Peristaltic	663	J+	–	–	0.215	J	0.715		0.158	U	0.316	U	0.199	U	41.1		1,130		14.4		474			
		05/01/19	PES	Peristaltic	481	J+	–	–	0.188	J	0.412	U	0.158	U	0.316	U	0.199	U	99.9		1,250		14.1		374			
07/22/19	PES	Bladder	210	J+	–	–	0.188	J	0.758		0.158	U	0.609	J	1.99	U	2.62	J	290		7.08		307					

Table 5

**Groundwater Analytical Data for Intermediate Zone Wells
American Linen Supply Co–Dexter Avenue Site, 700 Dexter Avenue North, Seattle, Washington**

Sample Location	Area Location	Sample Date	Sampled By	Sampling Method	Analytical Results (micrograms per liter)												
					GRO	DRO	ORO	Benzene	Toluene	Ethylbenzene	Total Xylenes	PCE	TCE	cDCE	tDCE	VC	
Screening Level					800	500	500	0.5	72	29	10,000	2.4	1	16	100	0.2	
		10/15/19	PES	Bladder	365	–	–	0.167 J	0.572	0.158 U	0.316 U	41.7	138	333	7.04	216	
MW108 (-7.2 to -17.2)	Alley Between 8th and 9th Ave North (duplicate)	12/21/12	SES	Peristaltic	–	–	–	–	–	–	–	–	3.4	1.8	400	2.1	210 pr
		12/17/13	SES	Peristaltic	–	–	–	1.9	1 U	1 U	3 U	3.8	4.6	360	3.6	150	
		06/17/15	SES	Peristaltic	–	–	–	–	–	–	–	–	4.0	11	370	3.5	260
		10/20/15	SES	Peristaltic	–	–	–	–	–	–	–	–	3.0	6.4	220	1.8	140
		02/02/16	SES	Peristaltic	–	–	–	–	–	–	–	–	15	7.9	290	1.8	180
		03/28/17	PES	Peristaltic	–	–	–	1.59	0.479 U	0.158 U	0.316 U	73.1	12.5	278	0.899	52.3	
		06/27/17	PES	Bladder	–	–	–	1.26	0.479 U	0.158 UJ	0.316 U	194	22.1	165	0.748	52.8	
		04/06/18	PES	Peristaltic	–	–	–	4.00	0.599	0.158 UJ	0.316 U	1,970	284	1,030	7.13	217	
		04/06/18	PES	Peristaltic	–	–	–	3.83	0.597	0.158 UJ	0.316 U	1,980	287	1,020	7.91	231	
		01/22/19	PES	Peristaltic	–	–	–	1.67	0.562	0.158 U	0.316 U	4,190	587	1,180	6.03	90.8	
		04/29/19	PES	Peristaltic	–	–	–	3.20	0.412 U	0.158 U	0.316 U	419	171	970	3.22	125 J	
		07/15/19	PES	Peristaltic	–	–	–	2.90	0.412 U	0.158 U	0.316 U	567	189	918	3.48	197	
10/10/19	PES	Peristaltic	–	–	–	3.16	0.412 U	0.327 J	0.316 U	524	483	1,080	5.55	194			
MW109 (0.0 to -10.0)	Alley Between 8th and 9th Ave North	12/21/12	SES	Peristaltic	–	–	–	–	–	–	–	–	91	64	18	1 U	1.5
		12/17/13	SES	Peristaltic	–	–	–	0.35 U	1 U	1 U	3 U	4.0	18	310	1 U	27	
		06/17/15	SES	Peristaltic	–	–	–	–	–	–	–	370	890	520	1.2	26	
		10/20/15	SES	Peristaltic	–	–	–	–	–	–	–	230	790	400	20 U	22	
		02/02/16	SES	Peristaltic	–	–	–	–	–	–	–	34	330	270	1 U	19	
		03/29/17	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.198 J	12.6	0.152 U	3.49	
		06/27/17	PES	Bladder	–	–	–	0.0896 U	0.412 U	0.158 UJ	0.316 U	9.69 J	1.17	163	1.17	6.06	
		04/06/18	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	1.99 UJ	210	629	3.34	42.2	
		01/23/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.995 U	43.8	403	2.08	36.8	
		04/29/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	4.78	0.152 U	3.06 J	
		07/15/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.265 J	30.8	0.199 J	24.4	
		10/15/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	1.03	397	0.891	109	
MW110 (4.7 to -5.3)	Alley Between 8th and 9th Ave North (duplicate)	12/21/12	SES	Bladder	–	–	–	–	–	–	–	–	1,100	220	470	3.0	33
		12/19/13	SES	Peristaltic	–	–	–	0.35 U	1 U	1 U	3 U	930	240	840	3.9	31	
		04/22/15	SES	Peristaltic	–	–	–	–	–	–	–	1,000	210	340	2.4	1	
		06/17/15	SES	Peristaltic	–	–	–	–	–	–	–	1,000	200	470	10 U	12	
		10/20/15	SES	Peristaltic	–	–	–	–	–	–	–	890	180	380	2.2	13	
		02/01/16	SES	Peristaltic	–	–	–	–	–	–	–	1,300	290	460	3.0	1.1	
		03/23/17	PES	Peristaltic	–	–	–	0.330 J	0.412 U	0.158 U	0.316 U	1,070	389	644	4.72	1.45	
		06/27/17	PES	Bladder	–	–	–	0.0896 U	0.412 U	0.158 UJ	0.316 U	259	176	1,120	2.66	152	
		04/09/18	PES	Bladder	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	375 J-	253 J-	675 J-	3.72	3.54	
		01/23/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	1,260	490	673	5.83	1.39	
		01/23/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	1,120	499	718	6.49	1.51	
		04/26/19	PES	Bladder	–	–	–	0.291 J	0.412 U	0.158 U	0.316 U	1,500	613	710	5.59	0.900 J	
07/15/19	PES	Bladder	–	–	–	0.285 J	0.412 U	0.158 U	0.316 U	1,220	455	578	5.87	1.26			
10/15/19	PES	Bladder	–	–	–	0.233 J	0.412 U	0.158 U	0.316 U	1,180	498	574	3.86	0.853			
MW114 (10.8 to 0.8)	SDOT property south of Roy Street	12/21/12	SES	Peristaltic	–	–	–	–	–	–	–	1,400	290	260	1 U	14	
		12/18/13 Destroyed	SES	Peristaltic	–	–	–	17 U	50 U	50 U	150 U	8,400	1,300	640	50 U	22	
MW115 (-0.9 to -10.9)	9th Ave North ROW	12/13/12	SES	Peristaltic	–	–	–	–	–	–	–	15	1.1	3.0	1 U	2.6	
		12/21/12	SES	Peristaltic	–	–	–	–	–	–	–	1 U	3.0	38	1 U	16	
		12/19/13	SES	Peristaltic	–	–	–	0.35 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U	0.75	
		04/21/15	SES	Peristaltic	–	–	–	–	–	–	–	1 U	17	170	1 U	20	

Table 5

**Groundwater Analytical Data for Intermediate Zone Wells
American Linen Supply Co–Dexter Avenue Site, 700 Dexter Avenue North, Seattle, Washington**

Sample Location	Area Location	Sample Date	Sampled By	Sampling Method	Analytical Results (micrograms per liter)												
					GRO	DRO	ORO	Benzene	Toluene	Ethylbenzene	Total Xylenes	PCE	TCE	cDCE	tDCE	VC	
Screening Level					800	500	500	0.5	72	29	10,000	2.4	1	16	100	0.2	
		06/25/15	SES	Peristaltic	–	–	–	–	–	–	–	–	1 U	1 U	1 U	1 U	6.2
		10/27/15	SES	Peristaltic	–	–	–	–	–	–	–	–	1 U	1 U	1 U	1 U	0.31
		02/03/16	SES	Peristaltic	–	–	–	–	–	–	–	–	1 U	1 U	1 U	1 U	2.3
		03/22/17	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.643	0.152 U	15.7	
		06/22/17	PES	Bladder	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.523	0.152 U	8.45	
		04/11/18	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.272 J	0.152 U	5.81	
		01/30/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.316 J	0.152 U	12.4	
		07/17/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.787	0.152 U	24.3	
		10/22/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.819	0.152 U	23.2	
MW116 (-3.6 to -13.6)	9th Ave North ROW	12/07/12	SES	Peristaltic	–	–	–	–	–	–	–	–	6.8	1 U	1 U	1 U	0.2 U
		12/21/12	SES	Peristaltic	–	–	–	–	–	–	–	–	2.7	1 U	1 U	1 U	0.2 U
		12/19/13	SES	Peristaltic	–	–	–	0.35 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U	1 U	0.2 U
		06/25/15	SES	Peristaltic	–	–	–	–	–	–	–	–	1 U	1 U	1 U	1 U	0.2 U
		10/27/15	SES	Peristaltic	–	–	–	–	–	–	–	–	1 U	1 U	1 U	1 U	0.2 U
		02/03/16	SES	Peristaltic	–	–	–	–	–	–	–	–	1 U	1 U	1 U	1 U	0.2 U
		03/21/17	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U	
		06/16/17	PES	Bladder	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.303 J	0.0933 U	0.152 U	0.118 U	
		04/11/18	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U	
		01/30/19	PES	Bladder	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.655	0.152 U	0.118 U	
07/17/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U			
10/31/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U			
MW117 (16.9 to 1.9)	Dexter Ave North ROW	02/08/13	SES	Peristaltic	–	–	–	–	–	–	–	–	1 U	1 U	1 U	1 U	0.2 U
		12/18/13 Destroyed	SES	Peristaltic	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U	1 U	0.2 U
MW118 (12.9 to 2.9)	Mercer St ROW	03/25/13	SES	Peristaltic	–	–	–	–	–	–	–	–	1 U	1 U	1 U	1 U	0.2 U
		12/18/13 Destroyed	SES	Peristaltic	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U	1 U	0.2 U
MW119 (2.4 to -7.7)	9th Ave North ROW	03/25/13	SES	Peristaltic	–	–	–	–	–	–	–	–	1 U	1 U	3.3	1 U	0.2 U
		12/19/13	SES	Peristaltic	–	–	–	0.35 U	1 U	1 U	3 U	1 U	1 U	2.5	1 U	0.76	
		04/21/15	SES	Peristaltic	–	–	–	–	–	–	–	–	34	42	50	1 U	3.1
		06/17/15	SES	Peristaltic	–	–	–	–	–	–	–	–	4.9	7.1	52	1 U	2.7
		10/20/15	SES	Peristaltic	–	–	–	–	–	–	–	–	15	22	74	1 U	0.45
		02/02/16	SES	Peristaltic	–	–	–	–	–	–	–	–	7.3	24	100	1 U	0.45
		03/29/17	PES	Peristaltic	–	–	–	0.139	0.412 U	0.158 U	0.316 U	5.47	10.7	42.9	0.334 J	0.272 J	
		06/28/17	PES	Bladder	–	–	–	0.0896 U	0.726	0.158 U	0.562 J	19.0	12.4	5.99	0.167 J	0.118 U	
		04/05/18	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	2.14	3.02	18.3	0.203 J	0.118 U	
		01/21/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	1.24	0.153 U	0.0933 U	0.152 U	0.118 U	
		04/29/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.224 J	1.12	10.9	0.161 J	0.118 U	
07/19/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.303 J	0.153 U	0.340 J	0.152 U	0.118 U			
10/10/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.876	7.54	12.6	0.159 J	0.118 U			
MW120 (0 to -10)	8th Ave North ROW	12/19/13	SES	Peristaltic	100 U	50 U	440 x	0.35 U	1 U	1 U	3 U	2.8	2.3	19	1 U	9.6	
		06/16/15	SES	Peristaltic	–	–	–	–	–	–	–	1 U	1 U	4.3	1 U	0.2 U	
		10/20/15	SES	Peristaltic	–	–	–	–	–	–	–	1 U	1.1	5.2	1 U	0.94	
		02/01/16	SES	Peristaltic	–	–	–	–	–	–	–	1.3	1.6	6.7	1 U	1.1	
		03/28/17	PES	Peristaltic	–	–	–	0.0896 U	0.458 U	0.158 U	0.316 U	13.9	5.81	18.4	0.152 U	0.871	
		06/28/17	PES	Bladder	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	18.0	6.97	16.0	0.152 U	0.988	
		04/09/18	PES	Peristaltic	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199	0.153 U	0.811	0.152 U	0.118 U	

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American Linen Supply Co–Dexter Avenue Site, 700 Dexter Avenue North, Seattle, Washington**

Sample Location	Area Location	Sample Date	Sampled By	Sampling Method	Analytical Results (micrograms per liter)																					
					Screening Level					GRO	DRO	ORO	Benzene	Toluene	Ethylbenzene	Total Xylenes	PCE	TCE	cDCE	tDCE	VC					
					800	500	500	0.5	72	29	10,000	2.4	1	16	100	0.2										
	(duplicate)	01/24/19	PES	Peristaltic	105	J+	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	125	34.3	60.5	0.194	J	1.64				
		05/03/19	PES	Peristaltic	111	J+	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	155	46.9	87.2	0.258	J	1.28				
		05/03/19	PES	Peristaltic	138	J+	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	182	51.1	89.0	0.227	J	1.30				
		07/16/19	PES	Peristaltic	152	J+	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	134	40.1	74.9	0.217	J	1.01				
		10/17/19	PES	Bladder	106	–	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	61.5	22.3	48.8	0.220	J	2.31				
		10/17/19	PES	Bladder	113	–	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	73.9	26.9	49.8	0.243	J	2.25				
MW127 (-1.0 to -11.0)	8th Ave North ROW	01/03/14	SES	Peristaltic	–	–	–	–	0.35	U	1	U	1	U	3	U	1	U	1	U	1	U	0.29			
		01/13/14	SES	Peristaltic	–	–	–	–	0.35	U	1	U	1	U	3	U	1	U	1	U	1	U	0.30			
		08/01/19	PES	Peristaltic	31.6	U	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.153	U	0.489	J	0.152	U	0.118	U
		10/17/19	PES	Bladder	31.6	U	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.153	U	0.656	J	0.152	U	0.118	U
MW-142 (2.4 to -7.6)	8th Ave North ROW (duplicate)	04/27/18	PES	Peristaltic	49.3	U	–	–	0.514	J	0.412	U	0.158	U	0.316	U	0.523	1.40	46.1	0.474	J	17.2				
		01/28/19	PES	Peristaltic	31.6	U	–	–	0.442	J	0.412	U	0.158	U	0.316	U	0.199	U	0.153	U	5.62	0.152	U	3.45		
		01/28/19	PES	Peristaltic	31.6	U	–	–	0.410	J	0.412	U	0.158	U	0.316	U	0.199	U	0.208	J	5.67	0.152	U	3.38		
		04/24/19	PES	Peristaltic	31.6	U	–	–	0.361	J	0.412	U	0.158	U	0.316	U	0.199	U	0.156	J	5.67	0.152	U	4.39	J	
		07/25/19	PES	Bladder	31.6	U	–	–	0.413	J	0.412	U	0.158	U	0.316	U	0.199	U	0.218	J	7.70	0.169	J	6.57		
		10/16/19	PES	Bladder	31.6	U	–	–	0.38	J	0.412	U	0.158	U	0.316	U	0.199	U	0.360	J	50.4	0.282	J	11.3		
MW-144 (3.9 to -6.1)	8th Ave North ROW	04/27/18	PES	Peristaltic	364	J	–	–	0.0896	U	1.40	U	0.158	U	0.316	U	1.86	3.31	662	4.65	888					
		01/28/19	PES	Peristaltic	31.6	U	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.251	J	10.4	0.489	J	40.4		
		04/23/19	PES	Peristaltic	31.6	U	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.158	J	4.09	0.472	J	7.30	J	
MW-144R (2.8 to -7.3)	8th Ave North ROW	12/16/19	PES	Bladder	325	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	11.0	11.5	251	0.818	71.6						
MW-146 (12.9 to 2.9)	Roy St (duplicate)	04/30/18	PES	Bladder	597	zJ+	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	3.56	48.4	900	6.12	2,100					
		01/22/19	PES	Peristaltic	509	zJ+	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	2.29	21.6	1,080	7.25	1,370					
		04/24/19	PES	Bladder	88.0	zJ+	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	1.50	12.4	257	1.94	383					
		07/19/19	PES	Bladder	46.3	zJ+	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	3.08	14.4	257	J	3.29	580	J			
		07/19/19	PES	Bladder	262	zJ+	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	2.80	15.9	371	3.50	842	J				
		10/14/19	PES	Bladder	1,310	zJ+	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	2.03	6.77	1,350	7.85	2,830					
MW-156 (2.0 to -8.0)	8th Ave North ROW (duplicate)	04/26/18	PES	Peristaltic	1,690	z	–	–	0.283	J	0.479	J	0.158	U	0.316	U	9.95	U	581	2,850	9.97	407				
		01/24/19	PES	Peristaltic	1,480	zJ+	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	1,720	723	2,050	11.5	11.8	U				
		04/24/19	PES	Peristaltic	2,570	zJ+	–	–	0.339	J	0.412	U	0.158	U	0.316	U	1,430	727	1,770	9.41	3.21	J				
		04/24/19	PES	Peristaltic	2,600	zJ+	–	–	0.33	J	0.412	U	0.158	U	0.316	U	1,440	717	1,760	9.31	3.34	J				
		07/22/19	PES	Bladder	3,100	zJ+	–	–	0.492	J	0.412	U	0.158	U	0.316	U	232	1,270	2,310	14.5	82.0					
		10/17/19	PES	Bladder	1,450	zJ+	–	–	0.896	U	4.12	U	1.58	U	3.16	U	682	430	1,420	6.04	51.1					
MW-189 (-1.2 to -11.2)	Valley St ROW	10/14/19	PES	Bladder	31.6	U	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.153	U	2.23	0.152	U	18.2		
MW-302 (3.0 to -7.0)	Dexter Ave N ROW	10/21/19	PES	Bladder	98.5	J	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
MW-306 (17.2 to 7.2)	Dexter Ave N ROW	10/15/19	PES	Bladder	31.6	U	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
MW-308 (-4.7 to -14.7)	Alley Between 8th and 9th	10/11/19	PES	Peristaltic	–	–	–	–	12.5	–	4.38	–	0.158	U	0.316	U	0.199	U	0.153	U	38.9	0.492	J	20.3		
MW-315 (12.2 to 2.3)	Mercer St ROW	10/03/19	PES	Bladder	–	–	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U

Table 5

**Groundwater Analytical Data for Intermediate Zone Wells
American Linen Supply Co–Dexter Avenue Site, 700 Dexter Avenue North, Seattle, Washington**

Sample Location	Area Location	Sample Date	Sampled By	Sampling Method	Analytical Results (micrograms per liter)													
					GRO	DRO	ORO	Benzene	Toluene	Ethylbenzene	Total Xylenes	PCE	TCE	cDCE	tDCE	VC		
Screening Level					800	500	500	0.5	72	29	10,000	2.4	1	16	100	0.2		
MW-317 (3.4 to -6.6)	9th Ave N ROW	10/09/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U		
MW-325 (7.0 to -3.0)	Mercer St ROW	10/03/19	PES	Bladder	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.607	0.152 U	0.118 U		
MW-327 (3.6 to -6.3)	Westlake Ave N	10/02/19	PES	Bladder	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U		
Intermediate B Zone, On Property																		
MW130 (-30.9 to -40.9)	Property (duplicate)	03/03/16	SES	Bladder	–	–	–	–	–	–	–	–	6,200	430	300	1 U	38	
		03/29/17	PES	Bladder	8,890 xy	–	–	1.79 U	8.24 U	3.16 U	6.32 U	721	830	7,880	39.3	186		
		06/30/17	PES	Bladder	10,300 zJ+	–	–	0.896 U	4.12 U	1.58 U	3.16 U	6,760 J	4,020	20,100	55.6	597		
		06/30/17	PES	Bladder	15,000 zJ+	–	–	0.896 U	4.12 U	1.58 U	3.16 U	11,100 J	5,310	21,300	57.3	549		
		05/21/18	PES	Bladder	19,700 zJ+	–	–	0.403 J	1.37	0.227 J	1.12 J	13,500	7,400	29,500	114	1,650		
		12/17/18	PES	Bladder	16,400 zJ+	–	–	4.48 U	20.6 U	7.90 U	15.8 U	9,650	3,220	26,400	83.5	1,420		
		01/31/19	PES	Bladder	22,400 zJ+	–	–	0.377 J	1.51 J+	0.279 J	1.22 J	23,700	4,640	27,700	107	1,740		
Decommissioned March 2019																		
MW-132 (-29.9 to -39.9)	Property	09/25/17	PES	Bladder	95.9 U	–	–	0.448 U	2.06 U	0.790 U	1.58 U	0.995 U	1.95 J	196	0.760 U	1.76 J		
		04/26/18	PES	Bladder	2,630 z	–	–	0.422 J	0.412 U	0.158 U	0.32 U	2,830	840	3,300	16.3	10.2		
		10/25/18	PES	Peristaltic	48.3 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	3.53	0.750	12.1	0.254 J	158		
		12/13/18	PES	Peristaltic	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.995 U	0.765 U	39.8	0.497 J	199		
		1/31/19	PES	Peristaltic	104 zJ+	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	22.9	1.95	108	0.506	269		
		3/11/19	PES	Peristaltic	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	7.03	1.22	22.8	0.302 J	57.3		
		Decommissioned March 2019																
MW-134 (-38.6 to -48.6)	Property	09/22/17	PES	Bladder	–	–	–	0.448 U	2.06 U	0.790 U	1.58 U	0.995 U	0.765 U	86.2	0.760 U	229		
		04/16/18	PES	Peristaltic	42.1 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	1.49	0.153 U	0.287 J	0.152 U	68.6		
		10/25/18	PES	Bladder	38.2 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	20.9		
		12/12/18	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.259 J	0.152 U	21.9		
		01/28/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.609	0.152 U	32.4		
		03/12/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.550	0.152 U	17.7		
		Decommissioned March 2019																
MW-135 (-30.9 to -40.9)	Property	09/25/17	PES	Bladder	10,900 z	–	–	8.96 U	41.2 U	15.8 U	31.6 U	10,400	2,480	16,100	15.2 U	82.0 J		
		04/25/18	PES	Peristaltic	347,000 z	–	–	0.434 J	3.09	0.484 J	2.61	75,800	7,890	27,700	30.7	989		
		10/25/18	PES	Peristaltic	31,800 zJ+	–	–	2.24 U	10.3 U	3.95 U	7.90 U	45,900	8,330	40,400	54.4	1,170		
		12/13/18	PES	Peristaltic	80,000 zJ+	–	–	4.48 U	20.6 U	7.90 U	15.8 U	97,200	11,000	42,100	66.6	1,380		
		01/31/19	PES	Bladder	42,700 zJ+	–	–	0.695 J	5.12 J+	0.571 J	3.43 J	56,500	9,530	37,400	68.6	1,090		
		03/13/19	PES	Bladder	32,700 zJ+	–	–	0.496 J	2.43	0.329 J	1.90	57,300	8,150	37,200	74.3	706		
		Decommissioned March 2019																
MW-136 (-32.7 to -42.7)	Property (duplicate)	09/25/17	PES	Bladder	55.2 U	–	–	0.332 J	0.412 U	0.158 U	0.316 U	15.4	10.7	18.7	0.152 U	0.118 U		
		04/16/18	PES	Submersible	256	–	–	0.260 J	1.83	4.83	25.9	2.59	0.365 J	4.73	0.152 U	8.57		
		10/29/18	PES	Bladder	31.9 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.177 J	1.44	0.152 U	0.236 J		
		12/13/18	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.237 J	0.962	0.152 U	0.118 U		
		02/01/19	PES	Bladder	44.5 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	1.26	0.293 U	0.851	0.152 U	0.186 J		
		03/12/19	PES	Peristaltic	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.206 J	0.153 U	0.330 J	0.152 U	0.118 U		
		03/12/19	PES	Peristaltic	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.262 J	0.153 U	0.378 J	0.152 U	0.118 U		
Decommissioned March 2019																		

Table 5

**Groundwater Analytical Data for Intermediate Zone Wells
American Linen Supply Co–Dexter Avenue Site, 700 Dexter Avenue North, Seattle, Washington**

Sample Location	Area Location	Sample Date	Sampled By	Sampling Method	Analytical Results (micrograms per liter)																					
					GRO	DRO	ORO	Benzene	Toluene	Ethylbenzene	Total Xylenes	PCE	TCE	cDCE	tDCE	VC										
Screening Level					800	500	500	0.5	72	29	10,000	2.4	1	16	100	0.2										
MW-139 (-30.2 to -40.2)	Property	09/25/17	PES	Bladder	62.2	U	–	–	0.0896	U	0.516	0.158	U	0.316	U	0.199	U	0.153	U	1.42	0.152	U	0.246	J		
		04/25/18	PES	Peristaltic	31.6	U	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.153	U	0.175	J	0.152	U	0.118	U
		10/25/18	PES	Peristaltic	47.4	U	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	1.29	0.282	J	0.454	U	0.152	U	0.118	U	
		12/12/18	PES	Peristaltic	31.6	U	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.153	U	0.216	J	0.152	U	0.118	U
		01/28/19	PES	Peristaltic	31.6	U	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
		03/11/19	PES	Peristaltic	31.6	U	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.153	U	0.187	J	0.152	U	5.77	
Decommissioned March 2019																										
MW-150 (-13.3 to -23.3)	Property	04/10/18	PES	Peristaltic	7,040	z	–	–	22.4	U	1.63	39.5	U	79.0	U	2,500	3,200	9,710	21.1	766						
		10/25/18	PES	Peristaltic	14,600	zJ+	–	–	0.413	J	2.53	0.226	J	1.13	J	15,200	8,800	17,700	49.7	1,430						
		12/12/18	PES	Peristaltic	17,500	zJ+	–	–	0.429	J	1.04	0.158	U	0.316	U	75.6	533	32,800	242	2,040						
		01/29/19	PES	Peristaltic	11,900	zJ+	–	–	8.96	U	41.2	U	15.8	U	31.6	U	303	548	18,100	36.7	J	1,370				
		03/13/19	PES	Peristaltic	7,540	zJ+	–	–	0.165	J	0.412	U	0.185	J	0.316	U	36.0	262	15,000	50.5	479					
Decommissioned March 2019																										
MW-152 (-10.2 to -20.2)	Property	04/10/18	PES	Peristaltic	40,600	z	–	–	224	U	8.24	U	3.27	J	790	U	67,300	6,550	35,300	42.1	3,660					
		10/26/18	PES	Peristaltic	36,700	zJ+	–	–	4.48	U	20.6	U	7.90	U	15.8	U	1,960	3,150	73,000	109	4,510					
		12/14/18	PES	Peristaltic	47,300	zJ+	–	–	2.24	U	10.3	U	3.95	U	7.90	U	23,600	J+	6,870	J+	77,100	J+	134	J+	7,830	J+
		01/31/19	PES	Peristaltic	44,300	zJ+	–	–	0.416	J	2.61	J+	0.342	J	2.10	38,300	3,920	58,400	101	9,600						
		03/12/19	PES	Peristaltic	55,900	zJ+	–	–	2.24	U	10.3	U	3.95	U	7.90	U	398	U	18,700	781	11,000					
Decommissioned March 2019																										
W-MW-03 (-30.8 to -40.8)	Property	02/03/12	WW	Bladder	–	–	–	–	20	U	20	U	20	U	60	U	5,300	220	160	20	U	20	U			
		09/06/12	SES	Peristaltic	–	–	–	–	0.35	U	1	U	1	U	3	U	13	2.6	20	1	U	120				
Decommissioned																										
W-MW-04* (-32.5 to -41.5)	Property	02/03/12	02/03/12	Bladder	–	–	–	–	20	U	20	U	20	U	60	U	5,400	160	54	20	U	20	U			
		09/06/12	SES	Peristaltic	–	–	–	–	0.35	U	1	U	1	U	3	U	460	440	1,900	4.0	630					
Decommissioned																										
Intermediate B Zone, Off Property																										
BB-10	Dexter Ave North ROW	11/13/97	B&V	Bailer	250	U	630	U	630	U	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				
BB-13	Westlake Ave North ROW	1998	B&V	Bailer	250	U	630	U	630	U	ND	ND	ND	ND	ND	ND	ND	ND	2.6	ND	1.1					
		05/02/10	SES	Peristaltic	–	–	–	–	–	–	–	–	–	–	1	U	1	U	1	U	1	U	0.2	U		
Decommissioned																										
BB-14	North Valley St ROW	1998	B&V	Bailer	300	U	630	U	630	U	–	–	–	–	–	–	–	–	–	–	–					
Decommissioned																										
FMW-141 (duplicate) (-12 to -22)	Alley Between 8th and 9th Ave North	10/30/19	PES	Peristaltic	–	–	–	–	0.230	J	0.412	U	0.158	U	0.316	U	0.199	U	2.18	1,200	7.13	1,760				
		10/30/19	PES	Peristaltic	–	–	–	–	0.212	J	0.412	U	0.158	U	0.316	U	0.199	U	12.7	2,250	10.5	1,710				
HMW-1IB (-15.9 to -25.9)	Mercer Megablock	03/25/19	HC	Peristaltic	100	U	200	U	500	U	1.0	U	1.0	U	1.0	U	20	6.7	22	1.0	U	0.2	U			
HMW-2IB (-5.6 to -15.6)	Mercer Megablock	03/25/19	HC	Peristaltic	100	U	200	U	500	U	1.0	U	3.4	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	0.2	U	
MW111 (-33.5 to -43.5)	Alley Between 8th and 9th Ave North	12/21/12	SES	Bladder	–	–	–	–	–	–	–	–	–	–	–	–	110	32	37	1	U	1.8				
		12/17/13	SES	Peristaltic	–	–	–	–	0.35	U	1	U	1	U	3	U	1	U	1	U	4.7	1	U	17		
		04/22/15	SES	Peristaltic	–	–	–	–	–	–	–	–	–	–	–	–	1	U	1	U	1.7	1	U	18		
		06/17/15	SES	Peristaltic	–	–	–	–	–	–	–	–	–	–	–	–	1	U	1	U	1.5	1	U	20		
		10/20/15	SES	Peristaltic	–	–	–	–	–	–	–	–	–	–	–	–	1	U	1	U	1	U	1	U	8.2	
		02/02/16	SES	Peristaltic	–	–	–	–	–	–	–	–	–	–	–	–	1	U	1	U	2.3	1	U	5.8		
		03/23/17	PES	Peristaltic	–	–	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.153	U	1.40	0.152	U	5.22		
06/14/17	PES	Bladder	–	–	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.408	J	1.24	0.152	U	3.22				

Table 5

**Groundwater Analytical Data for Intermediate Zone Wells
American Linen Supply Co–Dexter Avenue Site, 700 Dexter Avenue North, Seattle, Washington**

Sample Location	Area Location	Sample Date	Sampled By	Sampling Method	Analytical Results (micrograms per liter)													
					GRO		DRO	ORO	Benzene	Toluene	Ethylbenzene	Total Xylenes	PCE	TCE	cDCE	tDCE	VC	
					800	500	500	0.5	72	29	10,000	2.4	1	16	100	0.2		
		04/06/18	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.618	0.153 U	16.5	0.152 U	121		
		01/23/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.492 J	0.176 J	1.70	0.152 U	37.6		
		04/22/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	3.18	0.152 U	19.5 J		
		07/15/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.596	0.152 U	15.0		
		10/14/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.413 J	0.152 U	8.63		
MW112 (-17.5 to -27.5)	Dexter Ave North ROW	12/21/12	SES	Bladder	–	–	–	–	–	–	–	–	1 U	1 U	1 U	1 U	0.2 U	
		12/26/13	SES	Bladder	–	–	–	0.35 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U
		03/22/17	PES	Bladder	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U	0.118 U	
		06/16/17	PES	Bladder	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U	0.118 U	
		04/12/18	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U	0.118 U	
		12/21/18	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U	0.118 U	
		04/22/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U	0.118 U	
		07/16/19	PES	Bladder	31.7 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U	0.118 U	
		10/21/19	PES	Bladder	96.6 J	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U		
MW126 (-54.1 to -64.1)	Alley Between 8th and 9th Ave North	01/03/14	SES	Peristaltic	–	–	–	0.35 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U	1 U	0.2 U	
		03/28/17	PES	Peristaltic	–	–	–	0.148 J	0.563 U	0.158 U	0.316 U	0.199 U	0.153 U	0.283 J	0.152 U	0.118 U	0.118 U	
		06/15/17	PES	Bladder	–	–	–	0.0896 U	0.412 U	0.179 J	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U	0.118 U	
		04/06/18	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U	0.118 U	
		01/22/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U	0.118 U	
		04/29/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U	0.118 U	
		07/18/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U	0.118 U	
		10/15/19	PES	Bladder	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U	0.118 U	
		(duplicate)		10/15/19	PES	Bladder	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U
				10/15/19	PES	Bladder	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U
MW-143 (-27.7 to -37.7)	8th Ave North ROW	04/30/18	PES	Peristaltic	154	–	–	0.244 J	0.797	0.212 J	1.08 J	0.199 U	0.153 U	129	0.512	193		
		01/29/19	PES	Bladder	31.6 U	–	–	0.141 J	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.241 J	0.152 U	0.118 U		
		04/24/19	PES	Peristaltic	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U		
		07/19/19	PES	Bladder	– U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.309 J	0.152 U	0.118 U		
		10/16/19	PES	Bladder	2,000 zJ+	–	–	0.211 J	0.412 U	0.158 U	0.316 U	2.35	28.0	2,510	11.0	1,180		
MW-145 (-26.1 to -36.1)	8th Ave North ROW	04/27/18	PES	Bladder	52.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.212 J	2.29	0.152 U	3.88		
		01/29/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.316 J	0.152 U	0.335 J		
		04/26/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.392 J		
MW-145R (-27.5 to -37.5)	8th Ave North ROW	12/16/19	PES	Bladder	140	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.193 J	0.152 U	0.118 U		
MW-147 (-17.6 to -27.6)	Roy St ROW	05/01/18	PES	Bladder	484 zJ+	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	19.8	83.4	399	2.09	1,150		
		01/22/19	PES	Bladder	663 zJ+	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	98.2	179	1,230	2.88	738		
		04/23/19	PES	Bladder	139 zJ+	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	5.13	322	1.47	499		
	(duplicate)	07/18/19	PES	Bladder	175 zJ+	–	–	0.0896 U	0.412 U	3.16 U	6.32 U	0.199 U	4.79	219	2.49	446		
		07/18/19	PES	Bladder	170 zJ+	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	4.72	286	2.12	425		
		10/14/19	PES	Bladder	513 zJ+	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	3.38	597	2.91	1,410		
MW-148 (-25.7 to -35.7)	Roy St ROW (duplicate)	05/01/18	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U		
		05/01/18	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.216 J	0.152 U	0.118 U		
		01/23/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	1.24	0.347 J	0.0933 U	0.152 U	0.118 U		
		04/26/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.277 J		
		07/22/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.415 U	0.153 U	0.0933 U	0.152 U	0.253 J		
		10/16/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.463 J		

Table 5

**Groundwater Analytical Data for Intermediate Zone Wells
American Linen Supply Co–Dexter Avenue Site, 700 Dexter Avenue North, Seattle, Washington**

Sample Location	Area Location	Sample Date	Sampled By	Sampling Method	Analytical Results (micrograms per liter)																				
					GRO	DRO	ORO	Benzene	Toluene	Ethylbenzene	Total Xylenes	PCE	TCE	cDCE	tDCE	VC									
Screening Level					800	500	500	0.5	72	29	10,000	2.4	1	16	100	0.2									
MW-157 (-28.3 to -38.2)	8th Ave North ROW	04/26/18	PES	Peristaltic	65.7	zJ+	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.950	0.240	J	10.4	0.246	J	104		
		01/24/19	PES	Peristaltic	1,870	zJ+	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	1.65	4,250	14.2	674			
		04/24/19	PES	Peristaltic	3,210	zJ+	–	–	0.254	J	0.412	U	0.158	U	0.316	U	9.95	U	8.52	J	3,550	15.9	622		
		07/22/19	PES	Bladder	3,880	zJ+	–	–	0.327	J	0.412	U	0.158	U	0.316	U	19.9	U	27.6	4,530	18.4	666			
		10/16/19	PES	Bladder	31.6	U	–	–	0.0896	U	0.561	0.158	U	0.316	U	0.199	U	0.153	U	0.188	J	0.152	U	0.118	U
MW-190 (-30.2 to -40.2)	Valley St ROW	10/14/19	PES	Bladder	31.6	U	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.153	U	7.78	0.152	U	0.994	
MW-303 (-13.8 to -23.8)	Dexter Ave N ROW	10/21/19	PES	Submersible	99.6	J	–	–	0.0896	U	1.63	0.158	U	0.316	U	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
MW-307 (-12.4 to -22.4)	Dexter Ave N ROW	10/11/19	PES	Bladder	31.6	U	–	–	0.0896	U	1.05	0.158	U	0.316	U	0.199	U	0.153	U	0.935	0.152	U	0.289	J	
MW-309 (-32.0 to -42.0)	Alley Between 8th and 9th	10/14/19	PES	Peristaltic	–	–	–	0.295	J	2.01	0.158	U	0.316	U	1.11	0.497	J	1.47	0.152	U	6.37				
MW-311 (-29.0 to -39.0)	Alley Between 8th and 9th	10/10/19	PES	Peristaltic	–	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	20.4	46.1	173	0.221	J	25.1				
MW-314 (-28.0 to -38.0)	Alley Between 8th and 9th	10/10/19	PES	Bladder	–	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	26.1	106	491	1.63	43.6					
MW-316 (-10.0 to -20.0)	Mercer St ROW	10/02/19	PES	Bladder	–	–	–	0.0896	U	0.570	0.158	U	0.316	U	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U	
MW-318 (-23.1 to -33.1)	9th Ave N ROW	10/08/19	PES	Bladder	–	–	–	5.75	0.495	J	0.158	U	0.316	U	0.199	U	0.153	U	6.52	0.152	U	8.65			
MW-322 (-21.2 to -31.2)	9th Ave N ROW	10/07/19	PES	Peristaltic	–	–	–	7.12	0.612	0.158	U	0.316	U	0.699	21.0	497	1.17	268							
PW-1	North Valley St ROW	1997 (8 hour)	B&V	Bailer	250	U	630	U	630	U	ND	ND	ND	ND	1.0	ND	ND	ND	ND	ND	ND				
		1997 (Final) Decommissioned	B&V	Bailer	250	U	630	U	630	U	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				
W-MW-01 (-25.1 to -35.1)	8th Ave North ROW	02/02/12	WW	Bladder	–	–	–	20	U	0.1	J	0.2	U	0.6	U	46	3.9	11	0.2	U	0.5				
		09/06/12	SES	Peristaltic	–	–	–	0.35	U	1.7	1	U	3	U	1	U	1	U	2.0	1	U	2.8			
		06/17/15	SES	Peristaltic	–	–	–	–	–	–	–	–	–	–	1	U	1	U	1	U	1	U	0.46		
		10/20/15	SES	Peristaltic	–	–	–	–	–	–	–	–	–	–	1	U	1	U	1	U	1	U	0.88		
		01/08/16	SES	Peristaltic	–	–	–	–	–	–	–	–	–	–	1	U	1	U	1	U	1	U	2.5		
		02/01/16	SES	Peristaltic	–	–	–	–	–	–	–	–	–	–	1	U	1	U	1	U	1	U	2.8		
		03/30/17	PES	Peristaltic	–	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.330	J	0.203	J	0.491	J	0.152	U	1.83	J
		06/19/17	PES	Bladder	–	–	–	0.158	J	0.931	0.158	U	0.316	U	0.199	U	0.153	U	0.320	J	0.152	U	1.09		
		04/13/18	PES	Bladder	37.6	U	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	5.33	1.68	1.31	0.152	U	8.79			
		10/29/18	PES	Bladder	31.6	U	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.22	J	0.696	0.629	0.152	U	3.9		
		12/13/18	PES	Bladder	31.6	U	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	1.77	0.538	0.152	U	3.86		
		01/25/19	PES	Bladder	31.6	U	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.587	0.459	J	0.152	U	5.46	
		03/11/19	PES	Bladder	31.6	U	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.520	0.301	J	0.396	J	0.152	U	7.24	
		04/25/19	PES	Bladder	31.6	U	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.373	J	0.572	0.152	U	6.61	J
07/23/19	PES	Bladder	31.6	U	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.304	J	0.547	0.152	U	9.00			
10/15/19	PES	Bladder	31.6	U	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.350	J	0.408	J	0.152	U	7.36		
W-MW-02 (-26.5 to -36.5)	8th Ave North ROW	02/03/12	WW	Bladder	–	–	–	20	U	20	U	20	U	60	U	6,900	1,700	2,000	20	U	120				
		08/13/12	SES	Peristaltic	–	–	–	–	–	–	–	–	–	–	3,000	1,300	2,200	4.1	66						
		09/05/12	SES	Peristaltic	–	–	–	0.35	U	1.4	1	U	3	U	2,600	1,300	2,800	5.0	69						

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Sample Location	Area Location	Sample Date	Sampled By	Sampling Method	Analytical Results (micrograms per liter)											
					GRO	DRO	ORO	Benzene	Toluene	Ethylbenzene	Total Xylenes	PCE	TCE	cDCE	tDCE	VC
Screening Level					800	500	500	0.5	72	29	10,000	2.4	1	16	100	0.2
		01/03/14	SES	Peristaltic	–	–	–	0.35 U	1 U	1 U	3 U	490	1,200	4,400	7.3	67
		06/17/15	SES	Peristaltic	–	–	–	–	–	–	–	10 U	10 U	13,000	95	2,400
		10/20/15	SES	Peristaltic	–	–	–	–	–	–	–	5 Uht	5 Uht	12,000 ht	97 ht	1,700 ht
		11/10/15	SES	Peristaltic	–	–	–	–	–	–	–	1 U	3.4	480	3.6	110
		12/11/15	SES	Peristaltic	–	–	–	–	–	–	–	1 U	4.9	900	6.2	2,900
		01/08/16	SES	Peristaltic	–	–	–	–	–	–	–	1 U	3.1	750	26	7,500
		02/01/16	SES	Peristaltic	–	–	–	–	–	–	–	1 U	4.6	2,900	35	2,800
	(duplicate)	03/27/17	PES	Peristaltic	–	–	–	0.270 J	0.961 J	0.158 U	0.316 U	0.199 U	0.259 J	33.0	2.16	36.4
		06/19/17	PES	Bladder	–	–	–	0.307 J	0.970	0.158 U	0.316 U	0.199 U	0.153 U	18.2	0.746	25.6
		06/12/18	PES	Bladder	32 U	–	–	0.0896 U	0.829	0.158 U	0.316 U	0.199 U	0.153 U	4.72	0.279 J	4.95
		10/26/18	PES	Peristaltic	90.2 UJ	–	–	0.0896 U	0.641	0.158 U	0.316 U	0.199 U	0.153 U	2.01	0.410 J	1.41
		10/26/18	PES	Peristaltic	246 J+	–	–	0.0896 U	0.587	0.158 U	0.316 U	0.199 U	0.153 U	2.11 J+	0.435 J	1.80
		12/12/18	PES	Peristaltic	158 UJ	–	–	0.0896 U	1.05	0.158 U	0.316 U	0.199 U	0.153 U	1.80	0.463 J	2.30
		01/25/19	PES	Peristaltic	37.4 J	–	–	0.133 J	2.09	0.158 U	0.316 U	0.199 U	0.153 U	1.83	0.263 J	2.01
		03/11/19	PES	Peristaltic	31.6 U	–	–	0.0896 U	1.12	0.158 U	0.316 U	0.199 U	0.153 U	2.41	0.316 J	2.43
		04/23/19	PES	Peristaltic	429 zJ+	–	–	0.0896 U	0.56	0.158 U	0.316 U	0.199 U	40.1	672	2.35	81.0 J
		07/23/19	PES	Bladder	31.6 U	–	–	0.0896 U	1.35	0.158 U	0.316 U	0.199 U	0.153 U	3.30	0.386 J	6.79
	10/18/19	PES	Bladder	316 U	–	–	0.0896 U	1.79	0.158 U	0.316 U	0.199 U	0.153 U	2.07	0.278 J	3.56	
		Number of Analytes Measured			176	25	25	295	295	292	295	361	361	361	360	361
		Number of Analytes Detected			70	0	0	61	52	14	11	179	216	280	158	263
		Frequency of Detection			40%	0%	0%	21%	18%	5%	4%	50%	60%	78%	44%	73%
		Maximum Detection			80,000 zJ+	–	–	14.1	17.6 E	28.6	55.1	220,000	18,700	127,000	781	11,000
		Minimum Detection			28.9	50 U	100 U	0.0896 U	0.1 J	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U

Notes:
 Petroleum hydrocarbons analyzed by EPA Method 418.1, NWTPH-HCID, or NWTPH-Gx, NWTPH-Dx, or 8015-M
 VOCs analyzed by EPA Method 601, 8010S, 8015, 8020, 8021B, 8240, 8260B, or 8260C or by Purge and Trap Gas Chromatogram/Mass Spectrometry.
 B&V = Black & Veatch
 cDCE = cis-1,2-dichloroethene
 DOF = Dalton, Olmsted & Fuglevand, Inc.
 DRO = diesel-range organics
 GeoE = GeoEngineers Inc.
 GRO = gasoline-range organics
 HC = Hart Crowser
 ORO = oil-range organics
 PCE = perchloroethylene (tetrachloroethene)
 ROW = right-of-way
 SES = SES Strategies, Inc.
 TCE = trichloroethene
 tDCE = trans-1,2-dichloroethene
 VC = vinyl chloride
 WW = Windward
 Well screen elevations indicated below Sample Location in parentheses.
 (--) = unknown screen elevation.
^a = approximate screen elevation

Laboratory and Results Notes:
 Detected results shown in bold, detections above the screening level highlighted in gray
 – = Not analyzed or results not available
 E = Estimated value. The reported range exceeds the calibration range of the analysis.
 f = Analyte was detected in the associated method blank. Analyte concentration in the sample is greater than 10x the concentration found in the method blank.
 g = Estimated value. The reported range exceeds the calibration range of the analysis
 ht = The analysis was performed outside the method the method or client-specified holding time requirement.
 J = the identification of the analyte is acceptable; the reported value is an estimate
 J+ = The result is an estimated quantity, but the result may be biased high.
 J- = The result is an estimated quantity, but the result may be biased low.
 ND = not detected at a concentration exceeding laboratory reporting limit; detection limit not provided
 pr = The sample was received with incorrect preservation. The value reported should be considered an estimate.
 U = not detected at or above the laboratory method detection limit (MDL)
 qp = Hydrocarbon result partly due to individual peak(s) in quantitation range
 x = The sample chromatographic pattern does not resemble the fuel standard used for quantitation.
 y = The GRO result in the sample is due to a pattern of peaks that is consistent with the chlorinated volatiles detected by the 8260C analysis.
 z = No/low level gasoline/petroleum detection; result is likely elevated due to high detections of CVOCs.

Table 6

**Groundwater Analytical Data for Deep Zone Wells
American Linen Supply Co–Dexter Avenue Site, 700 Dexter Avenue North, Seattle, Washington**

Sample Location	Area Location	Sample Date	Sampled By	Sampling Method	Analytical Results (micrograms per liter)												
					GRO	DRO	ORO	Benzene	Toluene	Ethylbenzene	Total Xylenes	PCE	TCE	cDCE	tDCE	VC	
Screening Level					800	500	500	0.5	72	29	10,000	2.4	1	16	100	0.2	
On Property																	
MW101 (-65.5 to -75.5)	Property	07/20/12	SES	Bladder	–	–	–	–	–	–	–	–	1 U	1 U	1 U	1 U	0.2 U
		09/06/12	SES	Peristaltic	–	–	–	0.35 U	1.4	1 U	3 U	1 U	1 U	1 U	1 U	1 U	0.2 U
Decommissioned																	
MW-133	Property	09/25/17	PES	Bladder	41.2 U	–	–	0.0896 U	0.748	0.158 U	0.316 U	12.7	16.2	13.3	1.13	0.239 J	
		04/25/18	PES	Bladder	31.6 U	–	–	0.0896 U	0.837	0.158 U	0.316 U	0.646	0.516	10.7	0.315 J	3.51	
		10/26/18	PES	Bladder	458 zJ+	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	1.92 J+	1.63 J+	7.94	0.257 J	3.43	
		12/12/18	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	1.71	2.75	7.88	0.454 J	5.95	
		02/01/19	PES	Bladder	46.4 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	22.4	9.29	12.4	0.588	4.36	
		03/13/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	4.45	5.92	7.48	0.483 J	10.8	
Decommissioned March 2019																	
MW-137	Property	09/25/17	PES	Bladder	58.5 U	–	–	0.0896 U	3.90	0.158 U	0.316 U	15.0	19.1	62.0	0.152 U	0.118 U	
		04/12/18	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	1.79	0.152 U	4.26	
		10/26/18	PES	Bladder	86.9 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.896 J+	0.463 U	0.893 J+	0.152 U	0.118 U	
		12/12/18	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.437 J	0.152 U	0.357 J	
		02/01/19	PES	Bladder	58.4 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	1.48	0.153 U	0.616	0.152 U	0.365 J	
		03/11/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.344 J	0.153 U	0.275 J	0.152 U	0.179 J	
Decommissioned March 2019																	
MW-141	Property	09/22/17	PES	Bladder	–	–	–	0.0896 U	0.941	0.158 U	0.316 U	0.199 U	0.153 U	0.345 J	0.152 U	0.457 J	
		04/12/18	PES	Submersible	326 zJ+	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	71.3 J+	25.6 J+	91.6 J+	5.68 J+	7.01 J+	
		10/25/18	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	3.10	0.152 U	0.118 U	
		12/12/18	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	1.46	0.152 U	0.520	
		01/30/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.479 J	0.152 U	0.118 U	
		03/11/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.701	0.153 U	1.30	0.152 U	0.557	
Decommissioned March 2019																	
MW-162	Property	02/05/19	PES	Bladder	–	–	–	1.00 U	1.00 U	1.00 U	1.00 U	2,800	613	1,070	9.58	128	
		03/12/19	PES	Peristaltic	690 zJ+	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	613	538	758	2.63	46.5	
Decommissioned March 2019																	
MW-163 (duplicate)	Property	02/05/19	PES	Bladder	–	–	–	1.00 U	1.00 U	1.00 U	1.00 U	218	150	42.2	1.00 U	2.95	
		02/05/19	PES	Bladder	–	–	–	1.00 U	1.00 U	1.00 U	1.00 U	220	153	40.3	1.00 U	3.45	
		03/12/19	PES	Bladder	319 zJ+	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	282	334	56.9	2.87	1.10	
Decommissioned March 2019																	
MW-164	Property	02/05/19	PES	Bladder	–	–	–	1.00 U	1.80	1.00 U	1.00 U	871	372	385	3.41	4.41	
		03/12/19	PES	Bladder	565 zJ+	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	444	327	529	4.24	7.80	
Decommissioned March 2019																	
Off Property																	
FMW-129 (-45 to -50)	SDOT Property South of Roy St	05/23/14	Farallon	Unknown	–	–	–	–	–	–	–	0.40	0.57	17	ND	7.6	
		10/20/15	SES	Peristaltic	–	–	–	–	–	–	–	25	39	250	1 U	0.2 U	
		02/02/16	SES	Peristaltic	–	–	–	–	–	–	–	13	61	240	1 U	0.330	
		04/10/17	PES	Peristaltic	–	–	–	0.448 U	2.06 U	0.790 U	1.58 U	194	492	1,420	5.05	0.885 J	
		06/23/17	PES	Bladder	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	81.1	182	474	1.21	0.413	
		05/01/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	101	166	372	1.22	0.590 U	
		07/16/19	PES	Bladder	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	159	84.1	272	1.61	0.296 J	
10/21/19	PES	Peristaltic	141 zJ+	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	114	198	350	1.61	0.259 J			

Table 6

**Groundwater Analytical Data for Deep Zone Wells
American Linen Supply Co–Dexter Avenue Site, 700 Dexter Avenue North, Seattle, Washington**

Sample Location	Area Location	Sample Date	Sampled By	Sampling Method	Analytical Results (micrograms per liter)												
					GRO		DRO	ORO	Benzene	Toluene	Ethylbenzene	Total Xylenes	PCE	TCE	cDCE	tDCE	VC
					800	500	500	0.5	72	29	10,000	2.4	1	16	100	0.2	
FMW-131 (-34.7 to -44.7)	Block 37	09/02/16	Farallon	Unknown	–	–	–	–	–	–	–	–	0.20 U	0.20 U	41	0.20 U	1.7
		03/24/17	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	45.6	0.152 U	0.249 J	
		06/23/17	PES	Bladder	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	3.61	0.152 U	0.264 J	
		12/18/17	Farallon	Unknown	–	–	–	–	–	–	–	0.20 U	0.20 U	0.61	0.20 U	0.20 U	
		04/22/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	10.8	0.152 U	0.195 J	
		10/21/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	10.5	0.152 U	0.140 J	
FMW-137 (-42 to -52)	Block 38	11/20/18	Farallon	Unknown	–	–	–	–	–	–	–	–	0.20 U	0.20 U	1.2	0.20 U	0.20 U
		12/28/18	Farallon	Unknown	–	–	–	–	–	–	–	–	0.20 U	0.20 U	1.1	0.20 U	0.20 U
		05/06/19	Farallon	Unknown	–	–	–	–	–	–	–	–	0.20 U	0.20 U	1.3	0.20 U	0.20 U
		07/08/19	Farallon	Unknown	–	–	–	–	–	–	–	–	0.20 U	0.20 U	1.3	0.20 U	0.20 U
		11/06/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	1.27	0.152 U	0.118 U	
FMW-138 (--)	Block 38	11/20/18	Farallon	Unknown	–	–	–	–	–	–	–	–	0.20 U	0.20 U	0.29	0.20 U	0.20 U
		12/28/18	Farallon	Unknown	–	–	–	–	–	–	–	–	0.20 U	0.20 U	0.34	0.20 U	0.20 U
		05/06/19	Farallon	Unknown	–	–	–	–	–	–	–	–	0.20 U	0.20 U	0.38	0.20 U	0.20 U
		07/08/19	Farallon	Unknown	–	–	–	–	–	–	–	–	0.20 U	0.20 U	0.34	0.20 U	0.20 U
FMW-140 (-35.5 to -46.5)	900 Roy St	10/31/19	PES	Peristaltic	–	–	–	18.5	1.43	0.158 U	0.316 U	0.199 U	0.153 U	0.160 J	0.152 U	189	
FMW-3D (--)	Block 31	03/24/17	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U	
		06/23/17	PES	Bladder	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U	
GEI-2 (-21.1 to -31.1)	Block 37	03/24/17	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	2.25	0.152 U	6.94	
		06/23/17	PES	Bladder	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	16.3	0.152 U	127	
		04/22/19	PES	Peristaltic	–	–	–	1.05	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	11.5	0.152 U	57.7 J	
		07/16/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	1.37	0.152 U	46.4	
		10/21/19	PES	Peristaltic	–	–	–	3.80	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	20.1	0.152 U	88.2	
HMW-1D (-42 to -52)	Mercer Megablock	03/25/19	HC	Peristaltic	100 U	200 U	500 U	1.0 U	1.0 U	1.0 U	1.0 U	3.4	27	410	1.2	4.0	
HMW-2D (-32.8 to -42.8)	Mercer Megablock	03/25/19	HC	Peristaltic	100 U	200 U	500 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	0.2 U	
HMW-3D (-26.3 to -36.3)	Mercer Megablock	03/25/19	HC	Peristaltic	100 U	200 U	500 U	1.0 U	1.1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.2 U	
MW102 (-65.8 to -75.8)	Valley St ROW	08/16/12	SES	Peristaltic	–	–	–	–	–	–	–	–	1 U	1 U	1 U	1 U	0.2 U
		09/05/12	SES	Bladder	–	–	–	0.35 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U	1 U	0.2 U
		12/17/13	SES	Bladder	–	–	–	0.35 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U	1 U	0.2 U
		10/27/15	SES	Bladder	–	–	–	–	–	–	–	1 U	1 U	1 U	1 U	1 U	0.2 U
		02/02/16	SES	Bladder	–	–	–	–	–	–	–	1 U	1 U	1 U	1 U	1 U	0.2 U
		03/29/17	PES	Bladder	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.223 J	0.152 U	0.118 U	
		06/15/17	PES	Bladder	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U	
		04/25/18	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.352 J	0.153 U	0.0933 U	0.152 U	0.118 U	
		01/24/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.22 J	0.153 U	0.0933 U	0.152 U	0.118 U	
		05/01/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U	
		07/18/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U	
11/14/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U			

Table 6

Groundwater Analytical Data for Deep Zone Wells
American Linen Supply Co-Dexter Avenue Site, 700 Dexter Avenue North, Seattle, Washington

Sample Location	Area Location	Sample Date	Sampled By	Sampling Method	Analytical Results (micrograms per liter)													
					GRO	DRO	ORO	Benzene	Toluene	Ethylbenzene	Total Xylenes	PCE	TCE	cDCE	tDCE	VC		
					800	500	500	0.5	72	29	10,000	2.4	1	16	100	0.2		
MW103 (-67.6 to -77.6) (duplicate)	Alley East of 8th Ave North	07/31/12	SES	Peristaltic	Screening Level													
		09/05/12	SES	Peristaltic	–	–	–	–	–	–	–	–	–	12	25	150	10 U	79
		09/05/12	SES	Peristaltic	–	–	–	0.35 U	1.6	1 U	3 U	8.3	22	80	1 U	110		
		12/18/13	SES	Peristaltic	–	–	–	0.35 U	1.6	1 U	3 U	8.1	22	85	1 U	120		
		12/18/13	SES	Peristaltic	–	–	–	0.35 U	2.4	1 U	3 U	4.3	6.1	8.6	1 U	1.2		
		06/17/15	SES	Peristaltic	–	–	–	0.35 U	2.4	1 U	3 U	4.0	5.2	7.1	1 U	0.94		
		10/20/15	SES	Peristaltic	–	–	–	–	–	–	–	1.8	1.4	1 U	1 U	0.94		
		02/02/16	SES	Peristaltic	–	–	–	–	–	–	–	3.6	1.4	1 U	1 U	1.6		
		03/29/17	PES	Peristaltic	–	–	–	–	–	–	–	1.0	1 U	1.2	1 U	0.53		
		06/14/17	PES	Peristaltic	–	–	–	0.0896 U	0.464 J	0.158 U	0.316 U	1.99 U	23.1	240	0.405 J	157		
		04/06/18	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.626	23.0	120	0.369 J	69.2		
		01/23/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	1.81	32.4	0.152 U	22.4		
		04/22/19	PES	Peristaltic	–	–	–	0.0896 U	1.35	0.158 U	0.316 U	0.199 U	0.365 J	1.48	11.4	0.152 U	6.68	
		07/15/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	3.09	88.0	0.209 J	32.3 J		
10/14/19	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	2.37	118	0.232 J	55.4				
MW104 (-76.3 to -86.3)	8th Ave North ROW	08/16/12	SES	Peristaltic	–	–	–	–	–	–	–	–	1 U	1 U	1 U	1 U	0.2 U	
		09/06/12	SES	Bladder	–	–	–	0.35 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U	1 U	0.2 U	
		12/17/13	SES	Bladder	–	–	–	0.35 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U	1 U	0.2 U	
		10/27/15	SES	Peristaltic	–	–	–	–	–	–	–	2.6	4.4	4.3	1 U	0.2 U		
		02/02/16	SES	Bladder	–	–	–	–	–	–	–	1 U	1.2	19	1 U	0.2 U		
		03/30/17	PES	Bladder	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	3.97	0.152 U	0.118 U		
		06/30/17	PES	Bladder	–	–	–	0.387 J	0.903	0.158 U	0.396 J	5.83	5.21	1.54	0.152 U	0.118 U		
		04/09/18	PES	Peristaltic	81.3 J	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.541	2.00	176	1.02	32.3		
		10/26/18	PES	Bladder	1,570 zJ+	–	–	0.0896 U	0.618 J+	0.158 U	0.316 U	1.87 J+	2.94 J+	71.2	0.257 J	43.5		
		02/01/19	PES	Bladder	191 J	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	12.1	3.22	30.6	0.326 J	32.4		
		03/13/19	PES	Bladder	124 J+	–	–	0.0896 U	0.455 J	0.158 U	0.316 U	31.6	75.7	83.0	1.93	25.9		
		04/23/19	PES	Bladder	174 J+	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	15.9	56.9	162	2.49	21.1 J		
		07/22/19	PES	Bladder	50.4 J	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.282 J	28.3	160	2.10	57.1		
		10/18/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	1.54	16.3	0.329 J	33.2		
MW105 (-85.8 to -95.8) (duplicate)	Roy Street ROW	08/16/12	SES	Peristaltic	–	–	–	–	–	–	–	–	1 U	1 U	1 U	1 U	0.32	
		09/05/12	SES	Peristaltic	–	–	–	0.35 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U	1 U	0.23	
		12/29/13	SES	Bladder	–	–	–	0.35 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U	1 U	0.2 U	
		04/12/15	SES	Peristaltic	–	–	–	–	–	–	–	1.2	1.6	1 U	1 U	0.2 U		
		06/17/15	SES	Peristaltic	–	–	–	–	–	–	–	1 U	1 U	1 U	1 U	0.2 U		
		10/27/15	SES	Bladder	–	–	–	–	–	–	–	1 U	1 U	1 U	1 U	0.2 U		
		02/03/16	SES	Bladder	–	–	–	–	–	–	–	1 U	1 U	1 U	1 U	1.6		
		04/21/17	PES	Bladder	–	–	–	0.0896 U	0.544 J	0.158 U	0.316 U	0.199 U	0.153 U	0.155 J	0.152 U	1.95		
		06/14/17	PES	Bladder	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.356 J	0.180 J	0.152 U	0.514		
		04/11/18	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	1.67	0.152 U	0.205 J		
		01/23/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.790	0.317 J	1.51	0.152 U	0.392 J		
		04/23/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.917	0.152 U	0.238 J		
		07/17/19	PES	Bladder	37.8 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.891	0.152 U	0.265 J		
		10/22/19	PES	Bladder	96.4 J	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.945	0.152 U	0.214 J		
10/22/19	PES	Bladder	90.8 J	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.720	0.152 U	0.118 U				

Table 6

**Groundwater Analytical Data for Deep Zone Wells
American Linen Supply Co–Dexter Avenue Site, 700 Dexter Avenue North, Seattle, Washington**

Sample Location	Area Location	Sample Date	Sampled By	Sampling Method	Analytical Results (micrograms per liter)																								
					GRO		DRO	ORO	Benzene		Toluene		Ethylbenzene		Total Xylenes		PCE	TCE	cDCE	tDCE	VC								
Screening Level					800	500	500	0.5		72		29		10,000		2.4	1	16	100	0.2									
MW106 (-78.0 to -88.0)	SDOT Property South of Roy St	08/22/12	SES	Bladder	–	–	–	–	–	–	–	–	–	–	1	U	1	U	1	U	1	U							
		09/05/12	SES	Bladder	–	–	–	0.35	U	1	U	1	U	3	U	1	U	1	U	1	U	0.2	U						
		12/17/13	SES	Bladder	–	–	–	0.35	U	1	U	1	U	3	U	1	U	1	U	1	U	0.2	U						
		10/27/15	SES	Bladder	–	–	–	–	–	–	–	–	–	–	–	1	U	1	U	1	U	0.2	U						
		02/02/16	SES	Bladder	–	–	–	–	–	–	–	–	–	–	–	1	U	1	U	1	U	0.2	U						
		04/14/17	PES	Bladder	–	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U				
		06/30/17	PES	Bladder	–	–	–	0.0896	U	0.419	J	0.158	U	0.316	U	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U				
		05/04/18	PES	Bladder	–	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U				
		04/26/19	PES	Bladder	–	–	–	31.6	U	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
		07/19/19	PES	Bladder	–	–	–	31.6	U	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
10/18/19	PES	Bladder	–	–	–	31.6	U	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U		
MW113 (-37.1 to -47.1)	9th Ave North ROW	12/21/12	SES	Peristaltic	–	–	–	–	–	–	–	–	–	–	1.3	i	440	5,500	4.1	150									
		12/19/13	SES	Peristaltic	–	–	–	0.35	U	1	U	1	U	3	U	1	U	13	140	1	U	0.41							
		06/25/15	SES	Peristaltic	–	–	–	–	–	–	–	–	–	–	–	1	U	19	670	1	U	17							
		10/27/15	SES	Peristaltic	–	–	–	–	–	–	–	–	–	–	–	1	U	4.5	670	1.2	17								
		02/03/16	SES	Peristaltic	–	–	–	–	–	–	–	–	–	–	–	1	U	1.1	1,500	2.2	13								
		03/22/17	PES	Peristaltic	–	–	–	2.60		0.412	U	0.158	U	0.316	U	0.199	U	27.1	7,280	25.4	63.5								
		06/16/17	PES	Bladder	–	–	–	0.468	J	0.412	U	0.158	U	0.316	U	0.522	148	4,750	28.2	53.3									
		04/11/18	PES	Peristaltic	–	–	–	0.880		0.412	U	0.158	U	0.316	U	191	1,100	3,720	21.3	34.9									
		01/30/19	PES	Peristaltic	–	–	–	1.02	J	2.06	U	0.790	U	1.580	U	0.995	U	2.81	6,330	22.8	34.8								
		02/07/19	PES	Peristaltic	–	–	–	3,100	zJ+	–	–	0.811		0.412	U	0.158	U	0.316	U	0.199	U	1.77	6,990	25.7	46.0				
07/17/19	PES	Peristaltic	–	–	–	2,560	zJ+	–	–	0.172	J	0.412	U	0.158	U	0.316	U	3.14	20.4	4,940	13.1	103							
10/22/19	PES	Peristaltic	–	–	–	–	–	–	–	0.0896	U	0.412	U	0.158	U	1.99	U	0.153	U	1,420	4.45	66.2							
MW122 (-75 to -89)	Alley East of 800 Aloha St	12/23/13	SES	Peristaltic	–	–	–	0.35	U	1	U	1	U	3	U	1	U	1	U	1	U	0.2	U						
		10/20/15	SES	Peristaltic	–	–	–	–	–	–	–	–	–	–	–	1	U	1	U	1	U	1	U	0.2	U				
		02/02/16	SES	Peristaltic	–	–	–	–	–	–	–	–	–	–	–	1	U	1	U	1	U	1	U	0.2	U				
		03/28/17	PES	Peristaltic	–	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U				
		06/14/17	PES	Bladder	–	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.162	J	0.0933	U	0.152	U	0.118	U				
		04/06/18	PES	Peristaltic	–	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U				
10/14/19	PES	Peristaltic	–	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.223	J	0.153	U	0.0933	U	0.152	U	0.118	U						
MW123 (-42.5 to -52.5)	Westlake Ave North ROW	12/23/13	SES	Peristaltic	–	–	–	0.35	U	1	U	1	U	3	U	1	U	1	U	1	U	0.2	U						
		04/01/17	PES	Peristaltic	–	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U				
		06/24/17	PES	Bladder	–	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U				
		04/14/18	PES	Peristaltic	–	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.284	J	0.153	U	0.0933	U	0.152	U	0.118	U				
		10/18/19	PES	Peristaltic	–	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U				
MW124 (-53.8 to -63.8) (duplicate)	Valley Street ROW	12/26/13	SES	Bladder	–	–	–	0.35	U	1	U	1	U	3	U	1	U	1	U	1	U	0.2	U						
		03/29/17	PES	Bladder	–	–	–	0.0896	U	0.785	U	0.158	U	0.316	U	1.60	0.596	0.661		0.152	U	0.118	U						
		03/29/17	PES	Bladder	–	–	–	0.0896	U	0.675	U	0.158	U	0.316	U	1.22	0.433	0.600		0.152	U	0.118	U						
		06/15/17	PES	Bladder	–	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U				
		04/13/18	PES	Bladder	–	–	–	39.4	U	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
		10/11/19	PES	Bladder	–	–	–	31.6	U	–	–	0.0896	U	0.412	U	0.158	U	0.316	U	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U

Table 6

**Groundwater Analytical Data for Deep Zone Wells
American Linen Supply Co–Dexter Avenue Site, 700 Dexter Avenue North, Seattle, Washington**

Sample Location	Area Location	Sample Date	Sampled By	Sampling Method	Analytical Results (micrograms per liter)														
					GRO		DRO	ORO	Benzene	Toluene	Ethylbenzene	Total Xylenes	PCE	TCE	cDCE	tDCE	VC		
Screening Level					800	500	500	0.5	72	29	10,000	2.4	1	16	100	0.2			
MW128 (-30.8 to -40.8)	Westlake Ave North ROW	01/13/14	SES	Peristaltic	–	–	–	0.35 U	1 U	1 U	3 U	1 U	1 U	960 ve	1 U	290 ve			
		04/22/15	SES	Peristaltic	–	–	–	–	–	–	–	1 U	1 U	150	1 U	59			
		10/20/15	SES	Peristaltic	–	–	–	–	–	–	–	1 U	1 U	7.0	1 U	95			
		02/02/16	SES	Peristaltic	–	–	–	–	–	–	–	1 U	1 U	70	1 U	140			
		03/29/17	PES	Peristaltic	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	7.16	0.152 U	72.4			
		06/21/17	PES	Bladder	–	–	–	3.84	0.541	0.158 U	0.316 U	0.199 U	0.153 U	109	0.152 U	195			
		04/09/18	PES	Peristaltic	–	–	–	28.3	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	3.07	0.152 U	31.0			
		07/18/19	PES	Peristaltic	–	–	–	12.2	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	1.88	0.152 U	108			
		10/11/19	PES	Peristaltic	–	–	–	0.984	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.619	0.152 U	13.3			
(duplicate)		10/11/19	PES	Peristaltic	–	–	–	1.34	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.841	0.152 U	24.1			
MW-138 (-47.5 to -57.5)	Dexter Ave N ROW	09/21/17	PES	Bladder	63.3 J	–	–	0.179 U	2.60	0.316 U	0.632 U	0.398 U	0.306 U	0.187 U	0.304 U	0.236 U			
		04/11/18	PES	Bladder	91.1 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U			
		10/29/18	PES	Bladder	38.5 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.169 J			
		01/03/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.442 J	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U			
		03/14/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	1.49	0.167 J	0.262 J	0.152 U	0.118 U			
		04/22/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U			
		07/19/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U			
10/21/19	PES	Bladder	92.7 J	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U					
MW-140 (duplicate)	Roy Street ROW	09/22/17	PES	Bladder	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.450 J	0.477 J	0.152 U	0.118 U			
		09/22/17	PES	Bladder	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.456 J	0.523	0.152 U	0.118 U			
		04/12/18	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.402 J+	0.572 J+	2.47 J+	0.152 U	0.246 J+			
Decommissioned																			
MW-153 (-65.3 to -75.3)	Roy Street ROW	05/01/18	PES	Bladder	31.6 J	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.756	0.153 U	0.612	0.152 U	9.56			
		01/22/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	1.41	0.152 U	15.9			
		04/24/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	1.07	0.152 U	2.69 J			
		04/24/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.975	0.152 U	1.66 J			
		07/22/19	PES	Bladder	31.6 U	–	–	0.177 J	0.716	0.227 J	0.819 J	0.199 U	0.190 J	0.384 J	0.152 U	0.235 J			
		10/15/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U			
MW-158A (-47.2 to -58.5)	8th Ave N ROW	04/30/18	PES	Bladder	101	–	–	0.0896 U	2.66	0.158 U	0.316 U	17.7	18.7	59.6 J	0.205 J	8.91			
		01/24/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.325 J	2.54	0.152 U	7.58			
		04/25/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.240 J	0.974	0.152 U	3.08 J			
		07/19/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.177 J	0.290 J	0.152 U	1.24			
		10/16/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.318 J	0.848	0.152 U	2.18			
MW-160 (-76.5 to -86.5)	8th Ave N ROW	05/21/18	PES	Bladder	51.0 J	–	–	0.0896 U	0.412 U	0.158 U	0.342 J	0.380 J	0.835	2.96	0.152 U	0.118 U			
		01/25/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.263 J	5.08	0.152 U	0.118 U			
		05/01/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.513	2.58	0.152 U	0.118 U			
		07/23/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.217 J	0.152 U	0.326 J			
		10/17/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.445 J	0.152 U	0.118 U			
MW-161 (-78.9 to -88.9)	8th Ave N ROW	05/21/18	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.329 J	2.01	1.79	1.89	0.152 U	0.118 U			
		01/25/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.472 J	1.66	1.26	0.152 U	0.118 U			
		05/01/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.482 J	1.66	1.15	0.152 U	0.118 U			
		07/18/19	PES	Bladder	31.6 U	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.264 J	1.53	1.58	0.152 U	0.118 U			
		10/14/19	PES	Bladder	54.7 J	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.978	1.30	0.152 U	0.118 U			
MW-304 (-47.6 to -57.6)	Dexter Ave N ROW	10/21/19	PES	Bladder	97.9 J	–	–	0.0896 U	0.728	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U			

Table 6

**Groundwater Analytical Data for Deep Zone Wells
American Linen Supply Co–Dexter Avenue Site, 700 Dexter Avenue North, Seattle, Washington**

Sample Location	Area Location	Sample Date	Sampled By	Sampling Method	Analytical Results (micrograms per liter)												
					GRO	DRO	ORO	Benzene	Toluene	Ethylbenzene	Total Xylenes	PCE	TCE	cDCE	tDCE	VC	
Screening Level					800	500	500	0.5	72	29	10,000	2.4	1	16	100	0.2	
MW-319 (-42.8 to -52.8)	9th Ave N ROW	10/08/19	PES	Bladder	–	–	–	0.0896 U	0.412 U	0.158 U	0.316 U	0.609	8.12	53.4	0.152 U	5.76	
MW-323 (-65.4 to -75.4)	9th Ave N ROW	10/09/19	PES	Peristaltic	–	–	–	0.0896 U	4.97	0.158 U	0.316 U	0.199 U	0.891	66.5	0.152 U	13.4	
MW-324 (-32.1 to -42.1)	9th Ave N ROW	10/02/19	PES	Bladder	–	–	–	0.401 J	5.45	0.158 U	0.316 U	0.199 U	0.642	1,550	3.21	61.9	
MW-326 (-48.7 to -58.7)	Mercer St ROW	10/03/19	PES	Bladder	–	–	–	0.0896 U	1.31	0.158 U	0.316 U	0.769	0.297 J	6.87	0.152 U	0.118 U	
MW-328 (-36.1 to -46.1)	East of Westlake Ave N	10/02/19	PES	Bladder	–	–	–	17.0	0.535	0.158 U	0.316 U	0.199 U	0.153 U	1.26	0.152 U	23.3	
MW-329 (-69.0 to -79.0) (duplicate)	East of Westlake Ave N	10/03/19	PES	Peristaltic	–	–	–	0.206 J	0.435 J	0.158 U	0.316 U	0.199 U	0.153 U	9.25	0.152 U	28.8	
		10/03/19	PES	Peristaltic	–	–	–	0.215 J	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	9.26	0.152 U	29.2	
Number of Samples					79	–	–	158	158	158	158	199	199	199	199	199	
Number of Detections					22	–	–	18	28	1	4	65	81	134	42	112	
Frequency of Detection					28%	–	–	11%	18%	1%	3%	33%	41%	67%	21%	56%	
Maximum					3,100	J+	–	28.3	5.45 #	0.227 #	0.819 J	2,800	1,100	7,280	28.2	290 ve	
Minimum					31.6	U	200 U	500 U	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U
Notes:					<p>Laboratory and Results Notes: Detected results shown in bold, detections above the screening level highlighted in gray – = Not analyzed or results not available i = the presence of the analyte indicated may be due to carryover from previous sample injections J = the identification of the analyte is acceptable; the reported value is an estimate J+ = The result is an estimated quantity, but the result may be biased high. ND = not detected at a concentration exceeding laboratory reporting limit; detection limit not provided U = not detected at or above the laboratory method detection limit (MDL) ve = estimated value due to the reported range exceeding the calibration range of the analysis z = No/low level gasoline/petroleum detection; result is likely elevated due to high detections of CVOCs</p>												
Petroleum hydrocarbons analyzed by EPA Method 418.1, NWTPH-HCID, or NWTPH-Gx, NWTPH-Dx, or 8015-M VOCs analyzed by EPA Method 601, 8010S, 8015, 8020, 8021B, 8240, 8260B, or 8260C or by Purge and Trap Gas Chromatogram/Mass Spectrometry. cDCE = cis-1,2-dichloroethene Farallon = Farallon Consulting, LLC DRO = diesel-range organics GRO = gasoline-range organics HC = Hart Crowser ORO = oil-range organics PCE = perchloroethylene (tetrachloroethene) ROW = right-of-way TCE = trichloroethene tDCE = trans-1,2-dichloroethene SES = SoundEarth Strategies, Inc. VC = vinyl chloride Well screen elevations indicated below Sample Location. ^a = approximate screen elevation (--) = unknown screen elevation.																	

Table 7

**Groundwater Analytical Data for On Property Treatment Zones
American Linen Supply Co–Dexter Avenue Site, 700 Dexter Avenue North, Seattle, Washington**

Sample Location	Sample Date	Sampled By	Sampling Method	Analytical Results (micrograms per liter)										
				GRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	PCE	TCE	cDCE	tDCE	VC	
Screening Level				800	0.5	72	29	10,000	2.4	1	16	100	0.2	
Treatment Zone A Wells														
MW-165 (1.3 to -8.8)	11/04/19	PES	Peristaltic	3,940 zJ+	0.0896 U	0.412 U	0.158 U	0.316 U	3.95	20.2	4,180	91.1	642	
MW-169 (1.2 to -8.8)	11/05/19	PES	Peristaltic	83.4 zJ+	0.13 J	0.412 U	0.158 U	0.316 U	2.72	1.15	48.8	11.9	1,500	
MW-173 (2.2 to -7.8)	11/01/19	PES	Peristaltic	31.6 U	0.141 J	0.412 U	0.158 U	0.316 U	0.704	0.484 J	15.6	2.31	67.2	
MW-177 (2.3 to -7.7)	11/06/19	PES	Peristaltic	127,000 zJ+	0.744	4.14	0.579	2.77	3,180	1,710	131,000	395 J	11,000	
MW-181 (1.5 to -8.5)	11/08/19	PES	Peristaltic	23,900 zJ+	0.672 J	2.06 U	0.790 U	1.58 U	99.5 U	76.5 U	30,800	237	10,700	
MW-185 (1.4 to -8.7)	10/31/19	PES	Flowing	446 zJ+	0.140 J	0.412 U	0.158 U	0.316 U	2.57	3.51	547	5.47	179	
Treatment Zone B Wells														
MW-166 (-12.6 to -22.6)	11/04/19	PES	Peristaltic	4,360 zJ+	0.0896 U	0.526	0.158 U	0.316 U	0.199 U	0.467 J	5,130	47	1,420	
MW-170 (-12.8 to -22.8)	11/05/19	PES	Peristaltic	22,700 zJ+	0.269 J	0.916	0.158 U	0.796 J	105	125	27,600	172	6,710	
MW-174 (-12.3 to -22.3)	11/01/19	PES	Peristaltic	31.6 U	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.286 J	1.07	6.85	
MW-178 (-11.7 to -21.7)	11/06/19	PES	Peristaltic	249 zJ+	0.0896 U	0.477 J	0.321 J	0.316 U	3.98 U	3.06 U	5.28 J	24.6	877	
MW-182 (-12.5 to -22.5)	11/08/19	PES	Peristaltic	14,100 zJ+	0.0896 U	0.519	0.344 J	0.573 J	1,570	794	19,200	89.4 J	1,560	
MW-186 (-12.7 to -22.7)	10/31/19	PES	Flowing	31.6 U	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 J	0.153 U	4.15	0.152 U	23.4	
Treatment Zone C Wells														
MW-167 (-27.9 to -37.9)	11/04/19	PES	Peristaltic	31.6 U	0.0896 U	0.567	0.158 U	0.316 U	0.326 J	0.297 J	14.6	0.599	17.3	
MW-171 (-27.6 to -37.6)	11/05/19	PES	Peristaltic	371 zJ+	0.0896 U	0.497 J	0.158 U	0.316 U	1.99 U	1.53 U	509	1.47	13.3	
MW-175 (-27.8 to -37.8)	11/01/19	PES	Peristaltic	31.6 U	0.0896 U	0.671	0.158 U	0.316 U	1.25	1.73	258	6.03	41.5	
MW-179 (-27.2 to -37.2)	11/06/19	PES	Peristaltic	2,310 zJ+	0.0896 U	0.443 J	0.273 J	0.316 U	50.5	46.2 J	3,780	15.2 U	533	
MW-183 (-27.4 to -37.4)	11/08/19	PES	Peristaltic	45 zJ+	0.0896 U	0.459 J	0.158 U	0.316 U	0.199 U	0.193 J	59.9	0.167 J	4.29	
MW-187 (27.0 to -37.0)	11/01/19	PES	Peristaltic	31.6 U	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	2.34	0.152 U	2.80	

Table 7

**Groundwater Analytical Data for On Property Treatment Zones
American Linen Supply Co–Dexter Avenue Site, 700 Dexter Avenue North, Seattle, Washington**

Sample Location	Sample Date	Sampled By	Sampling Method	Analytical Results (micrograms per liter)										
				GRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	PCE	TCE	cDCE	tDCE	VC	
Screening Level				800	0.5	72	29	10,000	2.4	1	16	100	0.2	
Treatment Zone D Wells														
MW-168 (-43.0 to -53.0)	11/04/19	PES	Peristaltic	65.0 J	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U	J
MW-172 (-42.5 to -52.5)	11/05/19	PES	Flowing	4,960 zJ+	0.0896 U	0.46 J	0.158 U	0.316 U	8,810	3,280	643	22.8	2.64	
MW-176 (-42.7 to -52.7)	11/01/19	PES	Flowing	31.6 U	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U	U
MW-180 (-42.7 to -52.7)	11/06/19	PES	Flowing	220 zJ+	0.0896 U	0.412 U	0.247 J	0.316 U	2.10 J	1.87 J	155	0.760 U	76.6	
MW-184 (-42.5 to -52.5)	11/08/19	PES	Flowing	2,310 zJ+	0.0896 U	0.412 U	0.158 U	0.316 U	1,590	733	79.0	2.77	11.8	U
MW-188 (-42.2 to -52.2)	10/31/19	PES	Flowing	31.6 U	0.0896 U	0.412 U	0.158 U	0.316 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U	U
<u>Notes:</u> Petroleum hydrocarbons analyzed by EPA Method 418.1, NWTPH-HCID, or NWTPH-Gx, NWTPH-Dx, or 8015-M VOCs analyzed by EPA Method 8260C cDCE = cis-1,2-dichloroethene DRO = diesel-range organics GRO = gasoline-range organics ORO = oil-range organics PCE = perchloroethylene (tetrachloroethene) TCE = trichloroethene tDCE = trans-1,2-dichloroethene VC = vinyl chloride Well screen elevations indicated below Sample Location in parentheses.				<u>Laboratory and Results Notes:</u> Detected results shown in bold, detections above the screening level highlighted in gray – = Not analyzed or results not available J = the identification of the analyte is acceptable; the reported value is an estimate J+ = The result is an estimated quantity, the result may be biased high. U = not detected at or above the laboratory method detection limit (MDL) z = No/low level gasoline/petroleum detection; result is likely elevated due to high detections of CVOCs										

Table 8

**Groundwater Geochemical Parameters
American Linen Supply Co–Dexter Avenue Site
700 Dexter Avenue North, Seattle, Washington**

Sample Location	Property	Sample Date	Sampled By	Alkalinity (mg CaCO ₃ /L)	Chloride (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Iron (mg/L)			Total Manganese (mg/L)	Dissolved Gases (µg/L)			
									Total	Ferrous	Ferric		Methane	Ethane	Ethene	
Shallow Zone																
F13	Property	03/27/17	PES	266	8.85	0.0227 U	68.3	10.0	24.2	1.0	23.2	0.651	510	0.296 U	0.422 U	
		06/22/17	PES	484	12.6	0.0227 U	6.13	10.9	29.3	1.5	27.8	0.806	2,610	0.296 U	0.422 U	
Decommissioned March 2019																
FMW-143	9th Ave N ROW	10/31/19	PES	405	68.4	0.0227 U	28.0	4.34	3.57	0.0	3.57	5.18	1,490	0.296 U	0.422 U	
J5	Property	03/21/17	PES	53.4	28.0	0.0584 J	16.3	4.10	1.09	0.6	0.5	0.474	2,370	0.296 U	29.4	
		06/26/17	PES	209	45.1	0.0227 U	8.85	11.4	2.91	–	–	2.24	9,600	19.6	34.4	
Decommissioned March 2019																
J15 (dup)	Property	03/27/17	PES	476	24.2	0.0227 U	55.8	20.0	5.52	2.0	3.5	3.34	3,100	0.296 U	0.422 U	
		06/26/17	PES	486	22.0	0.0227 U	60.3	19.1	2.66	1.5	1.2	3.09	2,220	0.296 U	0.422 U	
		06/26/17	PES	543	22.1	0.0227 U	60.4	19.0	3.02	1.5	1.5	3.03	2.34	0.296 U	0.422 U	
Decommissioned March 2019																
K8	Property	03/21/17	PES	70.3	10.1	0.103	27.2	5.93	0.0622 J	0.0	0.1	0.242	41.4	0.296 U	0.422 U	
		06/26/17	PES	97.5	14.7	0.307	25.8	6.45	0.0411 J	0.0	0.0	0.296	72.7	0.296 U	0.422 U	
Decommissioned March 2019																
M15 (dup)	Property	03/27/17	PES	830	11.6	0.0227 U	40.4	11.4	3.76	2.75	1.0	6.07	11,500	0.296 U	0.422 U	
		03/27/17	PES	817	11.6	0.0227 U	40.4	11.7	3.77	–	–	6.17	10,400	0.296 U	0.422 U	
		06/26/17	PES	904	11.0	0.0227 U	47.2	11.0	3.32	–	–	6.32	7,250	0.296 U	0.422 U	
Decommissioned March 2019																
MW121	8th Ave N ROW	12/26/13	SES	790	18.6	0.0250 U	200	–	2.39	1.90	0.5	6.47	346	5 U	5 U	
		03/28/17	PES	848	12.2	0.0227 U	643	17.9	33.3	2.0	31.3	13.2	479	2.04	0.422 U	
		06/20/17	PES	930	13.3	0.0227 U	61.2 J	16.5	27.1	3.0	24.1	11.0	2,140	8.88	0.422 U	
MW125	Valley Street ROW	12/26/13	SES	650	112	0.076	12.8	–	2.39	1.5	0.9	1.85	455	6.34	5 U	
		10/18/19	PES	481	10.9	0.0319 J	17.1	15.3	11.7	2.0	9.7	3.67	997	0.296 U	0.422 U	
MW-154	Roy St ROW	10/14/19	PES	186	18.4	1.58	87.8	1.92	0.173	0.0	0.173	0.129	0.287 U	0.296 U	0.422 U	
MW-155	Roy St ROW	10/16/19	PES	267	16.1	4.12	94.3	3.66	0.119	0.0	0.119	0.0716	36.1	17.5	0.422 U	
MW-305	Dexter Ave N ROW	10/15/19	PES	114	18	1.63	28.0	3.34	2.58	0.0	2.58	0.197	0.287 U	0.296 U	0.422 U	
MW-310	Alley between 8th and 9th Ave	10/10/19	PES	786	10.7	0.0227 U	88.0	8.93	11.2	4.0	7.2	3.01	558	0.296 U	0.422 U	
MW-312	Alley between 8th and 9th Ave	10/11/19	PES	1220	10.9	0.0227 U	5.71	14.7	5.18	2.8	2.4	0.845	768	0.296 U	0.422 U	
MW-313	Alley between 8th and 9th Ave	10/10/19	PES	378	11.6	0.199	66.3	4.39	2.15	0.5	1.7	1.59	76.2	0.296 U	0.422 U	
MW-320	9th Ave N ROW	10/07/19	PES	1780	12.7	0.0227 U	5.08	8.51	1.60	0.0	1.60	2.37	264	0.296 U	0.422 U	
MW-9	8th Ave N ROW	12/16/13	SES	56	3.76	0.059	6.08	–	3.32	3.4	-0.1	0.778	6.24	5 U	5 U	
		10/17/19	PES	612	20	0.0227 U	0.0774 U	4.42	21.6	2.0	19.6	3.76	1,770	8.51	0.422 U	
N7	Property	03/30/17	PES	118	4.73	6.87	25.2	1.35	0.120	0.0	0.1	1.50	11,000	0.296 U	0.422 U	
		06/27/17	PES	235	8.76	6.290	48.4	2.71	1.45	0.3	1.2	3.31	8,430	0.296 U	0.422 U	
R-MW5	Dexter Ave N ROW	03/23/17	PES	183	32.2	0.0549 J	33.0	3.94	2.94	1.0	1.9	4.24	118	0.296 U	0.422 U	
		06/16/17	PES	152	58.3	0.253	21.8	2.59	2.74	–	–	1.29	275	0.296 U	0.422 U	
		10/21/19	PES	112	41.4	0.0227 U	18.6	4.44	3.00	1.0	2.0	1.20	194	0.296 U	0.422 U	

Table 8

**Groundwater Geochemical Parameters
American Linen Supply Co–Dexter Avenue Site
700 Dexter Avenue North, Seattle, Washington**

Sample Location	Property	Sample Date	Sampled By	Alkalinity (mg CaCO ₃ /L)	Chloride (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Iron (mg/L)			Total Manganese (mg/L)	Dissolved Gases (µg/L)							
									Total	Ferrous	Ferric		Methane	Ethane	Ethene					
R-MW6	8th Ave N ROW	03/21/17	PES	586	5.72	0.191	119	6.28	5.02	–	–	6.24	9,410	0.296	U	0.422	U			
		06/20/17	PES	718	11.1	0.023 U	85.7	13.6	27.0	1.5	25.5	8.28	6,980	10.7		11.2				
Intermediate A Zone																				
BB-8 (dup) (dup)	Roy Street ROW	12/29/13	SES	270	12.6	3.68	84.6	–	0.085	0.0	0.1	0.252	5	U	5	U	5	U		
		03/22/17	PES	254	7.87	3.17	41.5	2.25	0.125	0.0	0.1	0.0705	0.412	J	0.296	U	0.422	U		
		06/14/17	PES	290	10.2	2.74	56.9	3.34	0.0348	J	0.0	0.0	0.0475	0.287	U	0.296	U	0.422	U	
		04/11/18	PES	258	7.43	3.41	3.98	3.24	0.145	0.0	0.1	0.0940	0.287	U	0.296	U	0.422	U		
		04/11/18	PES	262	7.42	3.17	3.98	3.14	0.0962	0.0	0.1	0.0544	0.287	U	0.296	U	0.422	U		
		01/23/19	PES	280	12.4	0.891	93.3	3.43	0.0954	J	–	–	0.0820	J	111		0.735	J	0.422	U
		04/23/19	PES	227	28.1	2.77	44.4	2.71	0.315	0.0	0.3	0.0637	0.287	U	0.296	U	0.422	U		
		07/17/19	PES	240	10.4	1.94	59.0	4.36	0.691	0.0	0.7	0.0979	62.2		0.296	U	0.422	U		
		10/22/19	PES	245	10.3	1.98	67.3	5.09	0.678	0.0	0.678	0.376	74.8		0.296	U	0.422	U		
		10/22/19	PES	246	10.5	2.17	70.0	4.27	0.339	0.0	0.339	0.313	0.287	U	0.296	U	0.422	U		
FMW-142	9th Ave N ROW	10/31/19	PES	276	25.5	0.0227 U	18.2	6.5	3.36	0.5	2.9	0.307	8,040	5.07		0.422	U			
GEI-1	Block 37	03/24/17	PES	564	8.9	0.0227 U	0.0774 U	11.7	23.8	1.0	22.8	3.10	20,500	0.296	U	0.422	U			
		06/13/17	PES	304	15	0.0792 J	25.3	6.73	9.05	–	–	1.50	10,600	0.296	U	0.422	U			
		07/16/19	PES	529	13.4	0.0227 U	0.0774 U	8.29	17.1	3.0	14.1	2.48	16,100	0.296	U	0.422	U			
		10/21/19	PES	589	14.7	0.0227 U	2.76 J	7.55	16.5	2.1	14.4	2.82	21,400	0.296	U	0.422	U			
MW107	8th Ave N ROW	12/16/13	SES	340	70.8	0.025 U	165	–	1.35	0.4	0.9	0.358	8.69	5	U	5	U			
		03/27/17	PES	559	122	0.0262	0.0774 U	147	17.6	2.0	15.6	1.12	8.38	0.296	U	159				
		06/19/17	PES	651	90	0.0227 U	0.0774 U	91.0	10.5	1.5	9.0	0.955	7350	0.296	U	205				
		04/09/18	PES	692	675	0.0227 U	3.54 J	26.3	4.84	4.0	0.8	1.21	6,700	44.2		38.1				
		01/30/19	PES	564	49.2	0.0227 U	37.1	14.5	2.35	–	–	0.947	14,500	89.2		70.3				
		05/01/19	PES	538	41.6	0.0227 U	51.8	14.2	2.67	2.0	0.7	1.08	18,000	122		93.2				
		07/22/19	PES	527	40.3	0.0227 U	30.3	18.9	3.08	3.0	0.1	1.04	16,400	133		81.5				
		10/15/19	PES	667	26.1	0.0227 U	68.7	11.3	4.60	3.4	1.2	1.17	12,900	34.1		29.6				
MW108	Alley Between 8th & 9th Ave N	12/17/13	SES	600	25.8	0.075	12.5	–	17.5	21.7	-4.2	1.96	2,110	22.8		5	U			
		03/28/17	PES	577	22.1	0.0227 U	106	7.32	19.7	2.5	17.2	2.27	1,740	36.4		2.20				
		06/27/17	PES	679	20.6	0.0227 U	101	8.62	21.8	2.0	19.8	2.20	3,940	47.8		0.42	U			
		10/10/19	PES	570	26.1	0.0227 U	43.7	5.83	13.5	3.3	10.2	1.76	3,650	70.7		6.24				
MW109	Alley Between 8th & 9th Ave N	12/17/13	SES	670	16.1	0.0250 U	34.6	–	12.6	16.2	-3.6	4.04	1,400	5.89		5	U			
		03/29/17	PES	498	6.90	0.0255 J	31.4	10.8	12.0	1.5	10.5	3.01	2,000	7.21		0.422	U			
		06/17/17	PES	693	13.3	0.0227 U	42.5	12.2	14.6	1.5	13.1	3.90	2,540	8.65		0.422	U			
		10/15/19	PES	628	13.7	0.0227 U	9.12	10.4	14.4	2.5	11.9	4.10	4,950	25.6		6.99				
MW110	Alley Between 8th & 9th Ave N	12/19/13	SES	390	20.4	0.603	158	–	0.079	0.04	0.039	3.28	7.66	5	U	5	U			
		03/23/17	PES	425	36.2	0.652	108	7.98	0.948	J	0.1	0.8	3.90	125	1.21	J	0.422	U		
		06/27/17	PES	516	27.0	0.0227 U	160	4.91	0.115	0.0	0.1	2.13	95.5	17.4		0.422	U			
		10/15/19	PES	465	19.3	0.0227 U	73.2	7.05	1.29	–	–	3.43	5,020	0.296	U	0.422	U			
MW114	SDOT Property S of Roy	12/18/13	SES	190	31.2	0.032	98.8	–	0.075	0.03	0.05	0.629	5	U	5	U	5	U		
MW115	9th Ave N ROW	12/19/13	SES	580	22.1	0.0250 U	3.35	–	6.24	6.69	0.0	1.44	2,550	5	U	5	U			
		03/22/17	PES	417	28.5	0.0227 U	35.9	7.69	5.69	1.5	4.2	1.32	215	0.296	U	0.422	U			
		06/22/17	PES	401	33.0	0.0227 U	46.1	7.39	6.19	1.5	4.7	1.19	3,570	4.98		0.422	U			
		10/22/19	PES	330	19.3	0.0227 U	23.6	5.51	4.53	2.0	2.5	0.930	1,500	4.04		4.17				

Table 8

**Groundwater Geochemical Parameters
American Linen Supply Co–Dexter Avenue Site
700 Dexter Avenue North, Seattle, Washington**

Sample Location	Property	Sample Date	Sampled By	Alkalinity (mg CaCO ₃ /L)	Chloride (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Iron (mg/L)			Total Manganese (mg/L)	Dissolved Gases (µg/L)		
									Total	Ferrous	Ferric		Methane	Ethane	Ethene
MW116	9th Ave N ROW	12/19/13	SES	310	26.2	0.0250 U	14.5	–	2.48	2.65	0.0	1.14	1,750	5 U	5 U
		03/21/17	PES	432	22.0	0.0227 U	25.7	7.34	6.01	3.9	2.1	0.869	8,590	0.296 U	0.422 U
		06/16/17	PES	377	25.1	0.0227 U	9.31	6.80	6.69	1.8	4.9	0.793	8,610	0.296 U	0.422 U
		10/22/19	PES	361	23.6	0.0227 U	0.0774 U	5.95	3.72	1.3	2.4	0.723	7,650	0.296 U	0.422 U
MW117	Dexter Ave N ROW	12/18/13	SES	200	9.11	0.0250 U	56.3	–	1.49	2.03	0.0	0.344	5 U	5 U	5 U
MW119	9th Ave N ROW	12/19/13	SES	310	12.1	0.0250 U	3.34	–	19.4	18.6	0.8	2.55	3,450	5 U	5 U
		03/29/17	PES	255	20.5	0.164	14.9	6.84	17.1	2.0	15.1	2.98	819	0.296 U	0.422 U
		06/28/17	PES	360	13.7	0.0227 UJ	56.1	9.09	5.66	1.5	4.2	1.25	73.5	0.296 U	0.422 U
		10/10/19	PES	226	18.6	0.0227 U	26.4	4.98	10.7	3.0	7.7	2.63	289	0.296 U	0.422 U
MW120 (dup) (dup)	8th Ave N ROW	12/19/13	SES	290	36.5	0.0690	99.4	–	0.288	0.2	0.1	0.319	10.1	5 U	5 U
		04/09/18	PES	151	30.2	0.237	66.9	1.08	1.40	0.0	1.4	0.194	0.287 U	0.296 U	0.422 U
		01/24/19	PES	206	22.4	1.98	73.6	1.78	3.68	0.0	3.7	0.387	235	2.71	0.422 U
		05/03/19	PES	217	20.5	2.01	66.2	1.66	2.31 J	–	–	0.384	157 J	0.296 U	0.422 U
		05/03/19	PES	217	20.3	1.96	65.9	1.58	1.12 J	–	–	346	115 J	0.296 U	0.422 U
		07/16/19	PES	211	19.9	1.76	67.1	1.7	2.85	0.0	2.85	0.391	72.4	0.296 U	0.422 U
		10/17/19	PES	264	22	0.472	119	3.64	0.937	0.0	0.937	0.637	86.4 J	0.296 U	0.422 U
		10/17/19	PES	264	22	0.473	120	3.68	0.930	0.0	0.930	0.637	43.9 J	0.296 U	0.422 U
MW127	8th Ave N ROW	10/17/19	PES	133	27.2	0.323	71.6	1.9	0.920	0.0	0.920	0.161	0.287 U	0.296 U	0.422 U
MW131	Property	03/27/17	PES	911	141	0.0227 U	0.0774 U	8.93	7.98	1.9	6.1	1.06	16,200	0.296 U	280
		06/20/17	PES	1,050	122	0.0227 U	0.724 J	10.8	7.42	–	–	1.01	10,700	0.296 U	332
		04/16/18	PES	712	114	0.0227 U	0.0774 U	44.2	7.97	1.8	6.2	1.19	29,900	329	467
		Decommissioned March 2019													
MW-142 (dup)	8th Ave N ROW	04/27/18	PES	794	15.6	0.0227 U	0.426 J	33.7	3.16	1.5	1.7	2.58	7,980	44.6	0.422 U
		01/28/19	PES	784	10.1	0.0227 U	0.0774 U	27.7	2.87	2.0	0.9	2.37	3,530	17.7	0.422 U
		01/28/19	PES	779	10.2	0.0227 U	0.0774 U	28.3	2.66	2.0	0.7	2.46	3,490	18.5	0.422 U
		04/24/19	PES	798	9.76	0.0227 U	27.3	31.7	3.50	1.2	2.3	1.99	3,560	19.2	0.422 U
		07/25/19	PES	792	10.6	0.0227 U	48.8	27.9	5.89	2.1	3.8	3.63	3,070	27.8	0.422 U
		10/16/19	PES	812	14.9	0.0227 U	15.9	4.76	5.40	2.0	3.4	3.44	766	47.8	0.422 U
MW-144	8th Ave N ROW	04/27/18	PES	740	182	0.0227 U	9.39	159	1.07	0.5	0.6	1.98	17,700	55.4	5,480
		01/28/19	PES	735	149	0.0227 U	0.0774 U	15.1	1.98	–	–	1.66	13,700	495	1,140
		04/23/19	PES	733	144	0.0227 U	0.0774 U	11.4	1.22	1.2	0.0	1.48	13,000	771	699
Damaged June 2019 and Decommissioned Decemerr 2019															
MW-144R	8th Ave N ROW	12/16/19	PES	673	93.1	0.0227 U	11.3	46.5	2.04	2.0	0.0	1.93	8,640	16.5	305
MW-146 (dup)	8th Ave N ROW	04/30/18	PES	363	30.4	0.0227 U	22.3	4.47	2.65	1.3	1.4	1.26	9,240	11.9	489
		01/22/19	PES	249	15.8	0.0227 U	32.1	3.43	1.76	2.0	-0.2	0.56	2,460	1.84	107
		04/24/19	PES	310	14.8	0.0227 U	23.3	4.95	2.87	2.5	0.4	0.770	5,090	4.00	347
		07/19/19	PES	310	17.2	0.0227 U	23.9	3.78	2.87	1.9	1.0	0.800	6,490	0.296 U	463
		07/19/19	PES	307	17.2	0.0227 U	24.2	3.67	2.95	1.9	1.1	0.817	5,480	0.296 U	387
		10/14/19	PES	338	23.3	0.0227 U	20.6	3.63	2.91	2.0	0.9	0.898	6,190	0.296 U	394
MW-149	Property	04/10/18	PES	504	44.6	0.0227 U	16.9	9.94	2.18	1.8	0.4	2.70	14,400	414	363
		12/13/18	PES	407	7.71	0.0227 U	225	75.1	26.1	0.5	25.6	12.8	11,400	2,430	35.9
Decommissioned March 2019															

Table 8

**Groundwater Geochemical Parameters
American Linen Supply Co–Dexter Avenue Site
700 Dexter Avenue North, Seattle, Washington**

Sample Location	Property	Sample Date	Sampled By	Alkalinity (mg CaCO ₃ /L)	Chloride (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Iron (mg/L)			Total Manganese (mg/L)	Dissolved Gases (µg/L)		
									Total	Ferrous	Ferric		Methane	Ethane	Ethene
MW-151	Property	04/10/18	PES	409	65.5	0.0870 J	2.08 J	39.2	1.38	0.8	0.6	0.536	36,500	83.3	1,440
		12/14/18	PES	618	32.2	0.0227 U	702	335	138	-	-	11.8	18,900	68.4	68.4
Decommissioned March 2019															
MW-156 (dup)	8th Ave N ROW	04/26/18	PES	436	46.3	0.0227 U	25.0	10.7	10.2	0.0	10.2	1.13	2,250	28.4	23.8
		01/24/19	PES	554	25.1	0.0227 U	67.6	34.3	3.42	0.0	3.4	6.59	2,470	44.8	0.422 U
		04/24/19	PES	618	18.6	0.0227 U	145	57.3	3.81	0.4	3.4	9.01	1,720	31.2	0.422 U
		04/24/19	PES	612	19.3	0.259	145	56.0	4.76	0.4	4.4	9.75	1,590	28.4	0.422 U
		07/22/19	PES	606	45.5	0.0227 U	181	42.0	19.9	0.3	19.7	8.68	2,340	50.0	0.422 U
10/17/19	PES	633	46	0.0227 U	83.3	19.3	3.44	1.4	2.0	3.83	2,490	179	0.422 U		
MW-302	Dexter Ave N ROW	10/21/19	PES	311	20.2	0.0227 U	26.8	8.10	2.26	0.5	1.8	0.295	129	3.74	0.422 U
MW-306	Dexter Ave N ROW	10/15/19	PES	187	8.79	0.0227 U	80.9	2.32	3.81	2.5	1.3	0.608	0.287 U	0.296 U	0.422 U
MW-308	Alley between 8th and 9th Ave	10/11/19	PES	901	15.4	0.0227 U	95.4	6.97	16.9	3.5	13.4	2.95	2,070	19.7	0.422 U
MW-315	Mercer St ROW	10/03/19	PES	325	11.7	0.0227 UJ	35.0	3.02	0.850	0.0	0.850	0.306	124	0.296 U	0.422 U
MW-317	9th Ave N ROW	10/09/19	PES	404	18.5	0.0227 U	0.0774 U	12.0	12.5	3.0	9.5	3.57	11,000	0.296 U	0.422 U
MW-325	Mercer St ROW	10/03/19	PES	235	21.5	0.788 J	112	3.28	0.701	0.0	0.701	0.865	31.7	0.296 U	0.422 U
MW-327	East of Westlake Ave N	10/02/19	PES	272	18.4	0.0227 UJ	0.0774 U	4.41	12.4	3.5	8.9	0.822	18,500	0.296 U	0.422 U
Intermediate B Zone															
FMW-141 (dup)	Alley between 8th and 9th Ave	10/30/19	PES	596	66.9 J	0.0227 U	0.909 J	21.2	8.88	0.5	8.4	1.74	6,040	113	460 J
		10/30/19	PES	466	44.5 J	0.0227 U	4.73 J	18.8	8.38	0.5	7.9	1.52	5,710	84.9	305 J
MW111	Alley Between 8th & 9th Ave N	12/17/13	SES	170	47.3	0.025 U	4.73	-	0.168	0.2	0.0	0.135	14.7	5 U	5 U
		03/23/17	PES	179	22.9	0.0680 J	8.25	0.918 J	0.391	0.1	0.3	0.151	136	5.75	4.17
		06/14/17	PES	202	23.2	0.0227 U	8.97	1.20	0.298	-	-	0.142	231	7.73	6.71
		10/14/19	PES	222	29.1	0.0227 U	7.70	1.97	0.159	-	-	0.229	324	20.9	20.1
MW112	Dexter Ave N ROW	12/26/13	SES	160	12.3	0.0640	44.9	-	0.560	0.2	0.3	0.106	5 U	5 U	5 U
		03/22/17	PES	188	10.6	0.0227 U	45.2	1.35	0.238	-	-	0.0411	4.89	0.296 U	0.422 U
		06/16/17	PES	240	1.15	0.162	1.26 J	5.48	2.56	-	-	0.0871	1.78	0.296 U	0.422 U
		04/12/18	PES	16.7 J	2.09	0.398 J	1.31 J	2.80	19.5	0.0	19.5	0.421	326	0.296 U	0.422 U
		12/22/18	PES	41.6	9.72	0.0683 J	0.342 J	5.51	22.6	-	-	0.573	373	0.296 U	0.422 U
		04/22/19	PES	82.9	7.09	0.0227 U	7.65	6.04	4.90	1.0	3.9	0.177	281	1.12 J	1.13 J
		07/16/19	PES	112	8.61	0.0227 U	17.1	6.12	1.28	0.0	1.3	0.154	149	3.81	0.422 U
10/21/19	PES	58.6	5.47	0.0227 U	1.82 J	11.1	1.70	0.5	1.2	0.169	388	5.75	0.422 U		
MW126 (dup)	Alley Between 8th and 9th Ave	10/15/19	PES	210	7.54	0.0227 U	3.62 J	5.12	0.407	0.5	0	0.335	277	0.296 U	0.422 U
		10/15/19	PES	200	7.78	0.0227 U	3.89 J	5.05	0.388	0.5	0	0.327	317	0.296 U	0.422 U
MW130 (dup)	Property	03/29/17	PES	276	100	0.0227 U	7.07	10.7	1.19	1.0	0.2	0.555	619	1.62	30.0
		06/30/17	PES	339	115	0.0227 U	6.23	1.84 J J	0.907	0.0	0.9	0.532	1,040	2.47	64.5
		06/30/17	PES	335	111	0.0227 U	6.16	9.68 J J	0.876	0.0	0.9	0.527	1,120	2.33	69.1
		05/21/18	PES	2.71 U	135	265	1.68 J	7.54	5.44	0.0	5.4	0.727	1,760	33.6	284
		12/17/18	PES	384	143	0.0227 U	17.3	12.6	2.26	0.0	2.3	0.490	324	8.36	166
Decommissioned March 2019															

Table 8

**Groundwater Geochemical Parameters
American Linen Supply Co–Dexter Avenue Site
700 Dexter Avenue North, Seattle, Washington**

Sample Location	Property	Sample Date	Sampled By	Alkalinity (mg CaCO ₃ /L)	Chloride (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Iron (mg/L)			Total Manganese (mg/L)	Dissolved Gases (µg/L)		
									Total	Ferrous	Ferric		Methane	Ethane	Ethene
MW-132	Property	04/26/18	PES	542	30.1	0.0227 U	10.6	18.6	9.59	–	–	2.04	4,640	75.9	0.422 U
		12/13/18	PES	260	40.4	0.0227 U	7.21	3.4	0.544	–	–	0.278	89.7	0.925 J	41.0
Decommissioned March 2019															
MW-134	Property	04/16/18	PES	298	38	0.0227 UJ	1.30 J	3.27	292	0.0	292	5.00	5,200	61.3	952
Decommissioned March 2019															
MW-135	Property	04/25/18	PES	273	118	0.0227 U	21.9	6.21	1.74	1.5	0.2	0.656	333	18.1	131
		12/13/18	PES	379	128	0.0227 U	61.8	18.1	4.95	0.8	4.2	1.450	2,060	56.1	327
Decommissioned March 2019															
MW-136	Property	04/16/18	PES	241	22.1	0.165	0.638 J	15.1	21.4	0.6	20.8	0.618	5,510	8.52	5.77
Decommissioned March 2019															
MW-139	Property	04/25/18	PES	212	21.9	0.0227 R	2.21 J	28.5	1.13	0.8	0.4	0.251	4.28	8.04	0.42 U
Decommissioned March 2019															
MW-143	8th Ave N ROW	04/30/18	PES	448	66.5	0.0227 U	4.69 J	2.55	2.08	0.5	1.6	0.390	6,720	92.5	360
		01/29/19	PES	400	58.5	0.0227 U	3.12 J	7.02	1.6	0.8	0.9	0.378	8,520	134	0.422 U
		04/24/19	PES	393	56.2	0.0227 U	8.53	7.19	0.687	0.3	0.4	0.317	6,940	125	0.422 U
		07/19/19	PES	403	58.2	0.140	6.91	12.7	2.07	1.0	1.1	0.398	4,790	96.5	14.4
		10/16/19	PES	518	35.8	0.0227 U	67.7	20.9	8.54	0.5	8.0	2.09	5,780	62.6	110
MW-145	8th Ave N ROW	04/27/18	PES	272	74.4	0.238	71.0	8.09 J	42.9	0.0	42.9	0.912	2,050	0.296 U	18.5
		01/29/19	PES	255	43.5	0.219	55.4	4.80	4.85	0.0	4.9	0.193	276	0.296 U	0.422 U
		04/26/19	PES	287	44.7	0.0227 U	73.9	5.29	5.73	0.0	5.7	0.318	455	1.73	5.24
		Damaged June 2019 and Decommissioned Decemberr 2019													
MW-145R	8th Ave N ROW	12/16/19	PES	258	20.1	0.0227 U	16.6	4.12	1.22	0.0	1.2	0.256	272	0.296 U	0.422 U
MW-147	Roy Street ROW (dup)	05/01/18	PES	302	40.8	0.0227 U	183	21.3	17.1	–	–	0.564	5,060	10.7	144
		01/22/19	PES	302	56.2	0.0227 U	43.2	5.2	6.01	1.0	5.0	0.646	4,210	2.10	100
		04/23/19	PES	346	26.9	0.0227 U	28.1	13.7	4.39	1.5	2.9	0.787	8,110	0.296 U	158
		07/18/19	PES	307	19.3	0.0227 U	30.0	9.56	3.80 J	2.0	1.8	0.750	5,450	0.296 U	191
		07/18/19	PES	310	18.8	0.0890 J	29.4	11.7	2.40 J	2.0	0.4	0.724	5,830	0.296 U	202
		10/14/19	PES	339	23.2	0.0227 U	28.0	6.7	9.37	0.5	8.9	0.919	7,830	2.94	457
MW-148 (dup)	Roy Street ROW	05/01/18	PES	170	22.2	0.0227 U	95.5	2.46	12.0	0.3	11.8	0.439	1,210	0.296 U	0.422 U
		05/01/18	PES	162	22.5	0.0227 U	96.1	2.53	11.2	0.3	11.0	0.379	1,140	0.296 U	0.422 U
		01/23/19	PES	151	17.7	0.0227 U	154	4.04	10.1	–	–	0.594	1390	0.296 U	2.84
		04/26/19	PES	161	17.1	0.0227 U	175	5.19	2.91	0.4	2.5	0.420	1,600	0.296 U	3.65
		07/22/19	PES	160	17	0.0227 U	173	3.51	5.44	0.5	4.9	0.534	1,940	0.296 U	4.66
		10/16/19	PES	163	18	0.0326 J	198	4.48	2.24	0.5	1.7	0.498	2,050	6.03	0.422 U
MW-152	Property	04/10/18	PES	312	128	0.0227 U	15.0	13.2	0.210	0.0	0.2	0.386	1,590	41.1	1,830
		12/14/18	PES	299	181	0.0227 U	31.6	16.9	3.82	1.0	2.8	1.46	3,710	32.2	2,050
Decommissioned March 2019															
MW-157	8th Ave N ROW	04/26/18	PES	201	27.8	0.0227 U	4.51 J	2.86	1.02	–	–	0.209	111	0.779 J	36.6
		01/24/19	PES	421	43.2	0.0227 U	24.1	12.9	5.25	3.0	2.3	1.17	4,970	37.4	124
		04/24/19	PES	513	34.1	0.0227 U	95.0	39.5	9.40	3.0	6.4	2.13	5,510	36.0	119
		07/22/19	PES	464	43.7	0.0227 U	46.7	14.9	11.4	3.0	8.4	1.73	5,090	45.8	56.2
		10/16/19	PES	408	22.8	0.441	5.72	7.17	1.68	0	1.68	0.403	4,670	78.6	0.422 U
MW-190	Valley St ROW	10/14/19	PES	172	12.8	0.0227 U	20.3	10.3	1.85	0.2	1.7	0.406	428	6.87	0.422 U
MW-303	Dexter Ave N ROW	10/21/19	PES	144	15.2	0.0227 U	62.2	4.76	3.06	0	3.06	0.289	95.7	6.17	0.422 U

Table 8

**Groundwater Geochemical Parameters
American Linen Supply Co–Dexter Avenue Site
700 Dexter Avenue North, Seattle, Washington**

Sample Location	Property	Sample Date	Sampled By	Alkalinity (mg CaCO ₃ /L)	Chloride (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Iron (mg/L)			Total Manganese (mg/L)	Dissolved Gases (µg/L)			
									Total	Ferrous	Ferric		Methane	Ethane	Ethene	
MW-307	Dexter Ave N ROW	10/11/19	PES	276	14.6	0.0227 U	69.1	4.12	1.03	0	1.03	0.149	26.6 J+	13	7.9	
MW-309	Alley between 8th and 9th Ave	10/14/19	PES	228	15.1	0.0227 U	86.5	2.95	0.511	0.5	0.01	0.435	105	0.296 U	0.422 U	
MW-311	Alley between 8th and 9th Ave	10/10/19	PES	394	45.9	0.0227 U	35.0	5.31	0.349	0	0.349	0.738	856	40.8	10.4	
MW-314	Alley between 8th and 9th Ave	10/10/19	PES	253	24.4	0.0227 U	264	2.84	2.42	3.5	0	1.11	377	18.6	0.422 U	
MW-316	Mercer St ROW	10/02/19	PES	384	16.9	0.0227 UJ	41.8	3.78	2.58	1.0	1.6	0.328	143	0.296 U	0.422 U	
MW-318	9th Ave N ROW	10/08/19	PES	339	24.1	0.0227 U	119	6.73	11.7	4.0	7.7	2.33	355	12.8	0.422 U	
MW-322	9th Ave N ROW	10/07/19	PES	841	30.4	0.0227 U	21.1	19.4	43.9	0	43.9	4.26	3,090	59.1	20.8	
W-MW-01	8th Ave N ROW	03/30/17	PES	211	23.8	0.023 U	29.0	1.84	18.2	0.3	18.0	0.542	367	0.757 J	1.27 J	
		06/19/17	PES	250	27.6	0.0727 J	28.3	3.00	9.48	-	-	0.321	461	0.296 U	0.42 U	
		04/13/18	PES	214	26.8	0.0227 U	61.4	2.95	20.4	0.8	19.6	0.717	702	5.81	7.55	
		01/25/19	PES	235	31.7	0.0227 UJ	56.9	7.93	11.1	1.5	9.6	0.552	291	2.43	3.41	
		07/23/19	PES	242	33.2	0.0227 U	78.9	2.73	0.614	0.0	0.6	0.323	327	3.96	7.04	
		10/15/19	PES	239	31.6	0.0227 U	73.8	2.49	1.16	0.0	1.2	0.320	384	0.296 U	0.422 U	
W-MW-02	8th Ave N ROW	12/16/13	SES	240	105	0.025 U	101	-	0.672	0.9	0	0.676	8.91	5 U	5 U	
		03/27/17	PES	455	142	0.0227 UJ	0.0774 U	204	47.5	1.8	45.8	4.12	6,740	0.296 U	8.32	
		06/19/17	PES	520	103	0.0227 UJ	0.0774 U	116	33.7	1.5	32.2	2.98	16,900	0.296 U	3.71	
		06/12/18	PES	854	77.9	0.0227 R	0.0774 U	97.7	21.1	3.4	17.7	3.45	23,800	14.3	57.9	
		01/25/19	PES	876	91	0.0665 J	0.0774 U	33.7	20.8	2.0	18.8	3.71	11,300	0.67 J	0.422 U	
		04/23/19	PES	799	86.7	0.0227 U	0.0774 U	26.1	13.4	0.5	12.9	3.43	10,600	45.2	37.4	
		07/23/19	PES	965	98.4	0.0227 U	3.24 J	43.4	13.6	3.0	10.6	3.47	25,700	0.296 U	15.0	
		10/18/19	PES	1,230	89.5	0.0227 U	0.0774 U	37.6	20.5	3.4	17.1	3.82	32,100	42.0	4.22 U	
		Deep Zone														
FMW-129	SDOT Property S of Roy	04/10/17	PES	308	44.2	0.0227 U	124	2.74	0.365	0.0	0.4	0.402	279	26.8	0.422 U	
		06/23/17	PES	296	36.1	0.0914 J	95.5	1.70	9.92	1.0	8.9	0.412	276	14.7	0.422 U	
		07/16/19	PES	221	23.7	0.771	86.8	2.23	4.6	-	-	0.415	40.5	6.45	0.422 U	
		10/21/19	PES	209	23.6	0.639	82.4	1.52	18.9	0.5	18.4	0.648	53.5	5.31	0.422 U	
FMW-131	Block 37	03/24/17	PES	166	6.12	0.0227 U	0.738	2.18	0.598	0.5	0.1	1.03	159	1.19 J	0.422 U	
		06/23/17	PES	273	28.1	0.109	29.2	1.56	2.39	0.3	2.1	1.26	87.4	0.296 U	0.422 U	
		10/21/19	PES	108	6.00	0.0227 U	2.56 J	1.91	0.608	0.5	0.1	0.589	45.6	0.296 U	0.422 U	
FMW-137	Mercer St N ROW	11/06/19	PES	408	24.3	0.0331 J	37.0	3.20	0.400	0.0	0.4	2.67	0.287 U	0.296 U	0.422 U	
FMW-140	900 Roy St	10/31/19	PES	396	17.6	0.0227 U	2.99 J	16.8	0.213	0.5	0	1.02	2,440	75.1	81.1	
GEI-2	Block 37	03/24/17	PES	420	12.5	0.0227 U	0	8.14	24.0	0.3	23.8	0.898	15.1	0.296 U	0.422 U	
		06/23/17	PES	458	23.0	0.0227 U	0	6.84	14.9	1.0	13.9	0.483	10,500	23.8	42.5	
		07/16/19	PES	340	27.1	0.0227 U	36.1	6.6	7.51	1.5	6.0	0.432	4,550	15.0	11.5	
		10/21/19	PES	512	24.8	0.0227 U	47.8	343	13.2	2.2	11.0	0.496	10,000	59.2	27.5	
MW102	Valley Street ROW	04/25/18	PES	160	4.99	0.0315 J	0.880 J	1.94	9.60	1.0	8.6	0.414	0.561	0.296 U	0.422 U	
		01/24/19	PES	162	5.19	0.0553 J	1.74 J	4.36	6.46	0.0	6.5	0.363	172	0.296 U	0.422 U	
		05/01/19	PES	173	5.39	0.0227 U	0.318 J	3.75	11.9	0.5	11.4	0.405	255	1.07 J	0.422 U	
		07/18/19	PES	167	5.58	0.0227 U	1.83 J	4.76	7.16	0.8	6.4	0.353	290	0.296 U	0.422 U	

Table 8

**Groundwater Geochemical Parameters
American Linen Supply Co–Dexter Avenue Site
700 Dexter Avenue North, Seattle, Washington**

Sample Location	Property	Sample Date	Sampled By	Alkalinity (mg CaCO ₃ /L)	Chloride (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Iron (mg/L)			Total Manganese (mg/L)	Dissolved Gases (µg/L)		
									Total	Ferrous	Ferric		Methane	Ethane	Ethene
		11/14/19	PES	176	8.17	0.161	2.57 J	4.19	4.01	0.0	4.0	0.329	224	0.296 U	0.422 U
MW103	Alley Between 8th & 9th Ave N	12/18/13	SES	380	48.8	0.025 U	0.99	–	1.14	1.4	0	1.10	67.5	9.14	13.5
		03/23/17	PES	337	48.4	0.0227 U	36.3	1.97	1.68	0.3	1.4	1.09	433	82.5	34.1
		06/14/17	PES	339	34.7	0.0227 U	28.1	2.58	4.56	–	–	0.936	863	84.6	43.1
		10/14/19	PES	302	27.4	0.0227 U	25.0	1.55	0.948	0.5	0.4	0.870	166	17.7	13.8
MW104	8th Ave N ROW	12/17/13	SES	310	28.9	0.025 U	23.1	–	5.45	5.0	0.4	0.757	25.4	5 U	5 U
		03/30/17	PES	253	36.0	0.0227 U	18.8	3.44	0.487	–	–	0.178	170	3.35	2.71
		06/30/17	PES	218	11.7	0.0227 U	6.05	1.68	1.77	0.0	1.8	0.360	40.6	0.296 U	0.422 U
		04/09/18	PES	224	17.2	0.0227 U	0.594 J	7.13 J	0.793	0.3	0.5	0.263	398	0.296 U	5.71
		02/01/19	PES	79.8	6.74	0.0227 U	5.50	6.72	37.0	0.0	37.0	0.656	605	2.41	29.4
		04/23/19	PES	196	18.6	0.0227 U	5.96	5.97	5.03	0.0	5.0	0.285	437	2.60	17.7
		07/22/19	PES	201	17.0	0.0227 U	7.40	7.11	3.00	0.0	3.0	0.164	375	2.94	28.6
		10/18/19	PES	203	13.5	0.0227 U	5.97	2.3	1.33	0.0	1.3	0.268	316	0.296 U	23.7
MW105	Roy Street ROW	12/29/13	SES	440	48.3	0.716	29.3	–	2.91	2.0	0.9	1.24	44.5	5 U	6.14
		04/11/18	PES	257	35.7	0.0227 U	9.48	3.27	5.70	0.8	5.0	0.799	2,700	4.41	0.422 U
		01/23/19	PES	210	28.1	0.0227 U	11.0	1.96	13.8	–	–	0.809	286	0.296 U	4.19
		04/23/19	PES	275	37.9	0.0227 U	5.81	4.06	5.27	0.5	4.8	0.893	1,660	0.296 U	0.422 U
		07/17/19	PES	314	34.9	0.0227 U	7.66	3.38	2.29	–	–	0.945	1,830	0.296 U	0.422 U
		10/22/19	PES	330	35.0	0.0227 U	12.8	2.86	3.06	1.5	1.6	1.05	731	0.296 U	0.422 U
		(dup)	10/22/19	PES	330	35.1	0.0227 U	12.8	2.9	2.59	1.5	1.1	1.03	655	0.296 U
MW106	SDOT Property S of Roy	04/14/17	PES	309	28.7	0.0227 U	17.9	5.93	14.1	0.0	14.1	1.08	79.5	0.296 U	2.62
		06/30/17	PES	305	27.3	0.0227 U	18.0	10.0	4.96	0.0	5.0	0.779	38.7	0.296 U	0.442 U
		05/04/18	PES	283	25.0	0.0227 U	10.4	1.74	0.164	0.0	0.2	0.496	77.8	0.296 U	10.8
		04/26/19	PES	267	23.6	0.0227 U	15.9	3.32	3.42	0.0	3.4	0.695	42.1	0.296 U	0.422 U
		07/19/19	PES	266	24.4	0.0227 U	15.0	2.23	13.7	0.0	13.7	0.972	39.5	0.296 U	0.422 U
		10/18/19	PES	276	25.8	0.0227 U	17	2.32	2.64	0.5	2.1	0.792	47.2	0.296 U	0.422 U
MW113	9th Ave N ROW	12/19/13	SES	96	23.5	0.280	17.4	–	0.119	0.0	0.1	0.0248	5 U	5 U	5 U
		03/22/17	PES	594	65.5	0.0295 J	55.4	27.0	7.46	4.0	3.5	0.757	3.53	0.296 U	0.422 U
		06/16/17	PES	587	57.5	0.0227 U	41.9	18.0	14.4	1.5	12.9	0.990	6,520	147	0.422 U
		02/07/19	PES	551	43.9	0.0389 J	33.3	18.8	6.1	2.5	3.6	0.659	4,050	39.9	6.30
		07/17/19	PES	139	152	0.992	15.1	2.38	0.786	0.3	0.5	0.0799	1,130	9.87	27.2
		10/22/19	PES	561	70.4	0.146	22.1	15.8	3.38	3.6	0	0.426	2,330	16.3	115
MW122	Alley between 8th and 9th Ave	10/14/19	PES	182	7.8	0.0584 J	5.82	1.19	0.348	0.0	0.348	0.212	0.287 U	0.296 U	0.422 U
MW123	Westlake Ave N ROW	10/18/19	PES	409	22.9	0.0227 U	5.61	5.56	5.14	2.2	2.9	1.86	4,380	0.296 U	0.422 U
		10/18/19	PES	409	22.9	0.0227 U	5.61	5.56	5.14	2.2	2.9	1.86	4,380	0.296 U	0.422 U
MW124	Valley Street ROW	12/26/13	SES	160	5.96	1.22	0.730	–	1.46	0.4	1.1	0.125	5 U	5 U	5 U
		04/13/18	PES	162	4.47	0.0227 U	0.46 J	2.45	20.1	0.5	19.6	0.757	24.6	0.296 U	0.422 U
		10/11/19	PES	152	6.26	0.0227 U	5.92	3.78	2.24	0.0	2.24	0.301	12.3 U	0.296 U	0.422 U
MW128	Westlake Ave N ROW	03/29/17	PES	387	15.9	0.0227 U	0.0774 U	4.84	10.5	1.8	8.7	0.227	12,600	13.2	64.8
		06/21/17	PES	1,050	24.6	0.0227 U	0.0774 U	7.81	23.0	–	–	0.704	19,600	33.4	45.1
		07/18/19	PES	601	22.3	0.0227 U	4.34 J	6.94	12.4	–	–	0.409	15,500	16.4	68.3
		10/11/19	PES	746	22.6	0.0227 U	20.9 J	4.2	7.95	4.5	3.5	0.207	13,100	8.49 J	23.5 J

Table 8

**Groundwater Geochemical Parameters
American Linen Supply Co–Dexter Avenue Site
700 Dexter Avenue North, Seattle, Washington**

Sample Location	Property	Sample Date	Sampled By	Alkalinity (mg CaCO ₃ /L)	Chloride (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Iron (mg/L)			Total Manganese (mg/L)	Dissolved Gases (µg/L)		
									Total	Ferrous	Ferric		Methane	Ethane	Ethene
(dup)		10/11/19	PES	828	21.4	0.0227 U	14.0 J	4.42	8.74	4.5	4.2	0.218	10,100	2.96 UJ	4.22 UJ
MW-133	Property	04/25/18	PES	173	9.91	0.287	1.43 J	2.84	4.80	1.3	3.6	0.297	549	5.77	17.4
		Decommissioned March 2019													
MW-137	Property	04/12/18	PES	213	109.0	0.0227 R	10.8	2.90	218	0.8	217.3	4.41	1,600	0.296 U	4.47
		Decommissioned March 2019													
MW-138	Dexter Ave N ROW	04/11/18	PES	143	13.8	0.0227 U	45.9	4.89 J	21.5	0.0	21.5	0.725	83.1	0.296 U	0.422 U
		01/03/19	PES	125	14.1	0.0227 U	47.5	3.90	2.19	0.0	2.2	0.375	61.3	0.621 J	0.573 J
		04/22/19	PES	139	14.2	0.0227 U	42.7	5.70	13.2	-	-	0.509	164	0.296 U	1.43
		07/19/19	PES	133	14.9	0.0227 U	53.4	1.40	11.7	0.5	11.2	0.560	74.2	0.296 U	0.422 U
		10/21/19	PES	129	14.2	0.0227 U	51.9	1.10	3.83	0.5	3.3	0.504	101	0.296 U	0.422 U
MW-140	Roy Street ROW	04/12/18	PES	249	15.5	0.0227 R	5.73	2.40	15.0	0.3	14.7	0.795	261	0.296 U	0.422 U
		Decommissioned													
MW-141	Property	04/12/18	PES	179	9.64	0.0227 R	7.49	4.30	4.61	-	-	0.556	2,690	3.29	0.869 J
		Decommissioned March 2019													
MW-153	Roy Street ROW	05/01/18	PES	148	24	0.0227 U	23.7	1.26	1.01	-	-	0.187	74.3	0.296 U	0.422 U
		01/22/19	PES	156	9.91	0.0227 U	13.2	1.92	3.01	0.0	3.0	0.299	387	0.296 U	4.89
		04/24/19	PES	174	9.4	0.0227 U	9.23	3.86	3.60 J	0.0	3.6	0.385	412	0.296 U	1.79
		04/24/19	PES	170	9.16	0.0227 U	8.91	4.62	1.59 J	0.0	1.6	0.305	434	0.296 U	0.422 U
		07/22/19	PES	160	8.31	0.0227 U	6.78	1.84	1.67	0.0	1.7	0.325	27	0.296 U	0.422 U
		10/15/19	PES	174	10.5	0.0227 U	8.29	2.32	6.77	-	-	0.420	20.2	0.296 U	0.422 U
MW-158A	8th Ave N ROW	04/30/18	PES	345	113	0.446	278	54.8	55.4	0.5	54.9	1.04	352	15.7	11.0
		01/24/19	PES	329	29.7	0.0227 U	26.8	7.95	181	0.0	181.0	3.07	196	2.52	8.12
		04/25/19	PES	345	26.7	0.0227 U	21.1	8.11	12.4 J	-	-	0.393 J	177	0.296 U	4.74
		07/19/19	PES	330	26.9	0.0227 U	19.8	4.64	69.2	0.0	69.2	1.37	222	0.296 U	5.86
		10/16/19	PES	327	24.5	0.0330 J	20.4	4.46	5.46	-	-	0.350	115	20.1	7.24
MW-160	8th Ave N ROW	05/21/18	PES	186	10.7	0.0703 J	2.68 J	1.47	12.3	0.0	12.3	0.400	129	14.5	4.75
		01/25/19	PES	134	10.7	0.0227 U	1.87 J	3.98	59.1	0.5	58.6	1.22	766	11.7	0.422 U
		05/01/19	PES	197	10.5	0.0227 U	1.26 J	3.79	4.60	0.0	4.6	0.387	1,070	4.41	0.422 U
		07/23/19	PES	182	8.28	0.0227 U	2.64 J	1.95	2.68	0.5	2.2	0.408	535	0.296 U	0.422 U
		10/17/19	PES	183	8.21	0.0227 U	2.06 J	2.31	10.5	0.8	9.7	0.522	537	0.296 U	0.422 U
MW-161	8th Ave N ROW	05/21/18	PES	294	25.0	0.0227 U	13.5	1.49	9.37	0.0	9.37	0.758	53.4	2.64	0.979 J
		01/25/19	PES	282	25.5	0.0227 UJ	13.4	4.52	7.34	0.0	7.34	0.784	69.0	0.296 U	0.422 U
		05/01/19	PES	293	25.5	0.0227 U	12.2	1.58	5.73	0.0	5.73	0.795	98.1	0.296 U	0.422 U
		07/18/19	PES	284	26.5	0.0227 U	14.1	1.61	1.30	0.0	1.30	0.694	139	0.296 U	0.422 U
		10/14/19	PES	289	26	0.0227 U	14.4	1.28	1.39	0.0	1.39	0.737	226	0.296 U	0.422 U
MW-304	Dexter Ave N ROW	10/21/19	PES	153	12.1	0.0227 U	16.2	4.24	5.82	0.0	5.82	0.455	31.9	0.296 U	0.422 U
MW-319	9th Ave N ROW	10/08/19	PES	234	16.5	0.0227 U	85	1.68	4.30	3.5	0.8	0.854	152	0.296 U	0.422 U
MW-323	9th Ave N ROW	10/09/19	PES	135	11.5	1.61	13.8	0.964 U	0.273	0.0	0.273	0.160	75.5	12.3	3.27
MW-324	9th Ave N ROW	10/02/19	PES	587	20.1	0.0227 UJ	93.1	13.1	5.74	2.0	3.7	0.374	3,340	13.4	22.4
MW-326	Mercer St ROW	10/03/19	PES	209	17.1	0.0227 UJ	89.7	12.9	2.63	0.5	2.1	0.347	99.4	25.0	8.23
MW-328	East of Westlake Ave N	10/02/19	PES	683	17.7	0.0227 UJ	0.787 J	8.75	20.3	4.0	16.3	0.755	23,700	0.296 U	36.8
MW-329	Westlake Ave N ROW	10/03/19	PES	581	56.1	0.0227 UJ	11.4	4.82	7.71	4.0	3.7	2.21	591	19.9	0.422 U

Table 8

**Groundwater Geochemical Parameters
American Linen Supply Co–Dexter Avenue Site
700 Dexter Avenue North, Seattle, Washington**

Sample Location	Property	Sample Date	Sampled By	Alkalinity (mg CaCO ₃ /L)	Chloride (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Iron (mg/L)			Total Manganese (mg/L)	Dissolved Gases (µg/L)		
									Total	Ferrous	Ferric		Methane	Ethane	Ethene
(dup)		10/03/19	PES	589	56.1	0.0227 UJ	11.4	5.05	8.06	4.0	4.1	2.26	716	23.4	0.422 U
Treatment Zone A															
MW-165	Property	11/04/19	PES	1.06	5.12	0.0227 U	57.2	121	60.6	4.0	56.6	5.26	12,000	370	151
MW-169	Property	11/05/19	PES	0.577	14.9	0.0227 U	0.333 J	19.9	6.15	2.5	3.7	0.832	19,600	299	883
MW-173	Property	11/01/19	PES	0.472	5.17	0.0227 U	60.6	14.8	2.86	1.5	1.4	0.38	7,530	38.2	124
MW-177	Property	11/06/19	PES	0.589	28.5	0.0227 U	96.2	56.3	32.2	3.1	29.1	4.13	22,500	17.8	4,000
MW-181	Property	11/08/19	PES	0.605	16.1	0.0227 U	0.449 J	26.5	3.74	2.0	1.7	1.09	14,300	18.7	2,870
MW-185	Property	10/31/19	PES	0.731	11.6	0.0227 U	38.1	51.4	9.91	2.5	7.4	1.63	10,300	9.69	232
Treatment Zone B															
MW-166	Property	11/04/19	PES	0.948	9.38	0.0227 U	13.6	122	54.5	5.0	49.5	2.11	14,300	67.6	2,500
MW-170	Property	11/05/19	PES	0.506	17.8	0.0227 U	112	22.9	1.87	1.1	0.8	0.947	10,000	62	1,120
MW-174	Property	11/01/19	PES	0.593	9.93	0.0227 U	17.8	15.3	9.63	3.0	6.6	1.73	21,600	214	165
MW-178	Property	11/06/19	PES	1.74	17.0	0.0227 U	0.387 U	827	39.3	3.5	35.8	8.53	17,600	71.9	7,880
MW-182	Property	11/08/19	PES	1.61	14.6	0.0389 J	3.44 J	198	86.8	3.0	83.8	7.64	12,600	22.2	4,150
MW-186	Property	10/31/19	PES	0.320	6.29	0.0227 U	31.4	5.29	0.501	–	–	0.28	1,030	5.78	18.4
Treatment Zone C															
MW-167	Property	11/04/19	PES	0.347	3.81	0.0227 U	61.9	19.6	0.849	0.5	0.3	0.345	8,580	25.7	121
MW-171	Property	11/05/19	PES	0.258	4.21	0.0936 J	22	10.2	3.63	1.0	2.6	0.19	231	0.296 U	10.8
MW-175	Property	11/01/19	PES	0.351	6.63	0.0227 U	224	32.1	0.800	0.0	0.800	0.178	1,670	16.4	323
MW-179	Property	11/06/19	PES	1.18	12.1	0.0227 U	89.1	145	21.6	2.0	19.6	9.13	29,400	0.296 U	222
MW-183	Property	11/08/19	PES	0.162	1.3	0.0227 U	0.297 J	7.95	2.46	0.0	2.46	0.119	933	8.02	7.25
MW-187	Property	11/01/19	PES	0.193	2.45	0.0227 U	21.6	27.5	5.52	2.5	3.0	0.14	33.6	0.296 U	0.422 U
Treatment Zone D															
MW-168	Property	11/04/19	PES	0.221	1.18	0.0227 U	12.1	2.44	0.378	0.0	0.378	0.254	0.287 U	0.296 U	0.422 U
MW-172	Property	11/05/19	PES	0.213	3.10	0.0227 U	22.1	3.31	0.131	–	–	0.392	18.1	0.296 U	0.422 U
MW-176	Property	11/01/19	PES	0.358	1.23	0.0227 U	15.2	1.65	0.351	0.0	0.351	0.31	20.4	0.296 U	0.422 U
MW-180	Property	11/06/19	PES	0.940	5.08	0.0227 U	86.8	193	17.7	2.5	15.2	15.7	6310	0.296 U	49.2
MW-184	Property	11/08/19	PES	0.156	1.08	0.0284 J	14.3	1.08	0.0836 J	0.0	0.0836	0.268	8.35	0.296 U	0.422 U
MW-188	Property	10/31/19	PES	0.196	2.20	0.0231 J	38.7	1.41	0.325	0.5	0	0.387	0.287 U	0.296 U	0.422 U
NOTES:															
1. mg/L = milligrams per liter				7. < = not detected at concentration											
2. ug/L = micrograms per liter				8. Ferric iron = total iron minus ferrous iron; if total iron < ferrous iron, ferric iron is reported as 0											
3. mgCaCO ₃ /L= milligrams of calcium carbonate per liter				9. PES = PES Environmental, Inc.											
4. µS/cm = microSiemens per centimeter				10. SES = SoundEarth Strategies, Inc.											
5. mV = millivolts				11. Q = Sample was prepared and/or analyzed past recommended holding time.											
6. ORP = oxidation-reduction potential				12. V = The sample concentration is too high to evaluate accurate spike recoveries.											

Table 9

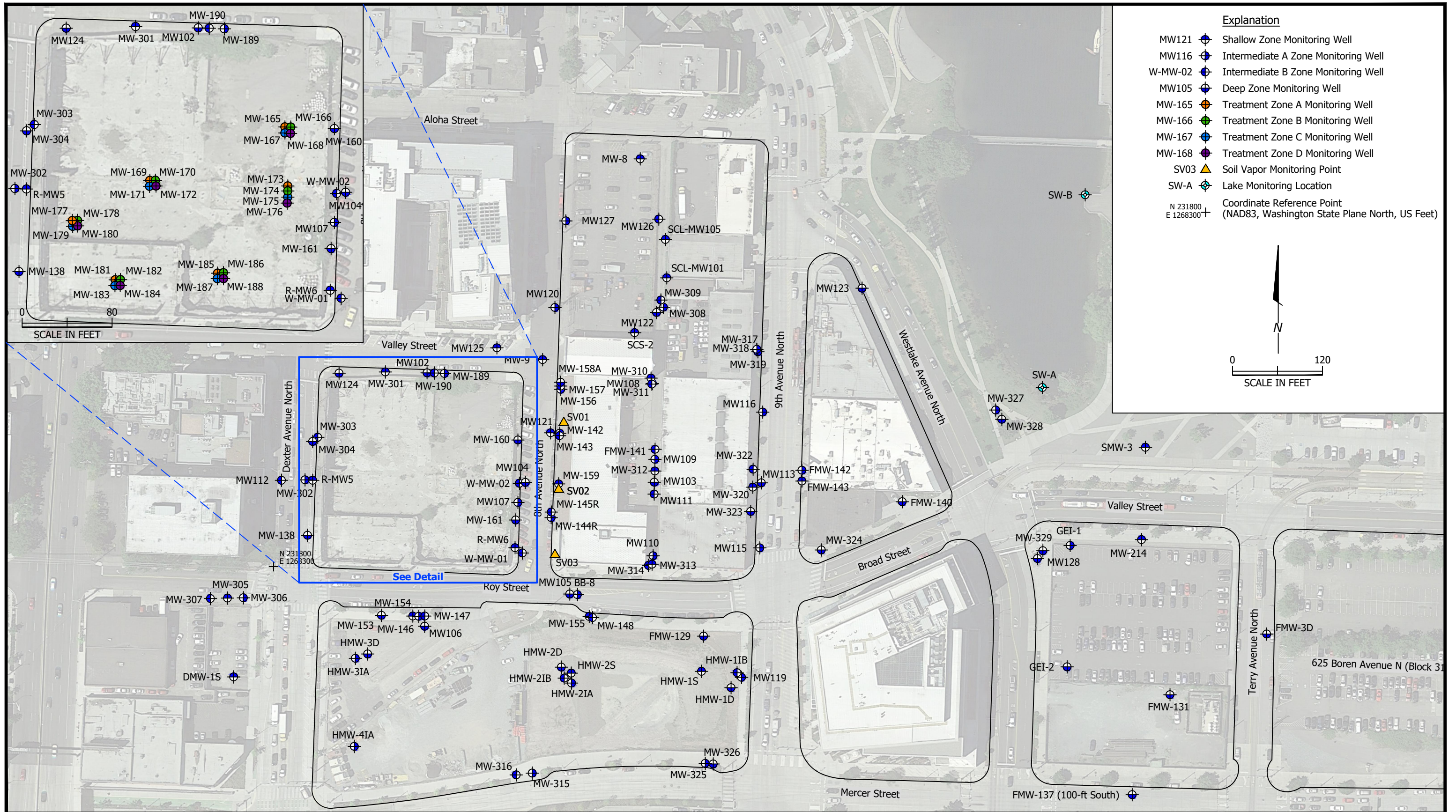
**Soil Vapor Analytical Results
American Linen Supply Co–Dexter Avenue Site
700 Dexter Avenue North Seattle, Washington**

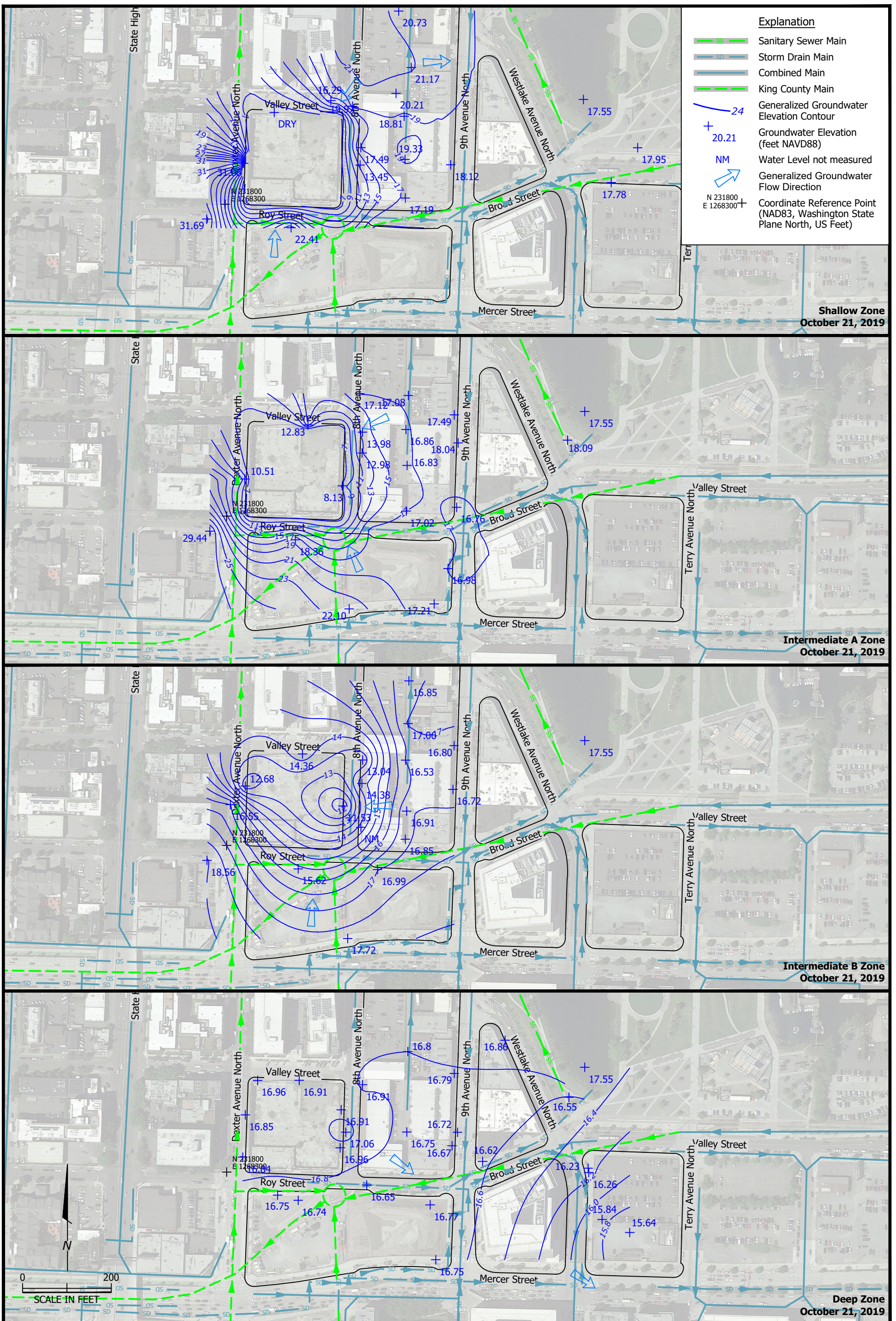
Sample Location	Sample Name	Sample Date	Analytical Results (micrograms per cubic meter)									
			PCE		TCE		cDCE		tDCE		VC	
MTCA Method B Soil Gas Screening Level			321		12		–		–		9.3	
SV01	SV01-20130311	03/11/13	1.5		0.16	U	0.31		0.58	U	0.71	
	SV01-092518	09/25/18	2.72	UJ	2.14	U	1.59	U	1.59	U	1.02	U
	SV01-092518-D	09/25/18	137	J	2.14	U	1.59	U	1.59	U	1.02	U
	SV01-020619	02/06/19	2.72	U	2.14	U	1.59	U	1.59	U	1.02	U
	SV01-042919	04/29/19	2.72	U	2.14	U	1.59	U	1.59	U	1.02	U
	SV01-042919-D	04/29/19	2.72	U	2.14	U	1.59	U	1.59	U	1.02	U
	SV-01-071919	07/19/19	2.72	U	2.14	U	1.59	U	1.59	U	1.02	U
	SV-01-071919-D	07/19/19	2.72	U	2.14	U	1.59	U	1.59	U	1.02	U
	SV01-110119	11/01/19	1.36	UJ	1.07	U	0.793	U	0.793	U	0.511	U
SV01-110119-D	11/01/19	2.75	J	1.07	U	0.793	U	0.793	U	0.511	U	
SV02	SV02-20130311	03/11/13	2.3		0.17	U	0.12	U	0.61	U	0.04	U
	SV02-092518	09/25/18	2.72	U	2.14	U	1.59	U	1.59	U	1.02	U
	SV02-020619	02/06/19	2.72	U	2.14	U	1.59	U	1.59	U	1.02	U
	SV02-042919	04/29/19	2.72	U	2.14	U	1.59	U	1.59	U	1.02	U
	SV-02-071919	07/19/19	31.3		2.14	U	1.59	U	1.59	U	1.02	U
	SV02-110119	11/01/19	14.5		1.07	U	0.793	U	0.793	U	0.511	U
SV03	SV03-20130311	03/11/13	4.6		0.39		0.12	U	0.58	U	0.037	U
	SV03-092518	09/25/18	2.72	U	2.14	U	1.59	U	1.59	U	1.02	U
	SV03-020619	02/06/19	2.72	U	2.14	U	1.59	U	1.59	U	1.02	U
	SV03-042919	04/29/19	2.72	U	2.14	U	1.59	U	1.59	U	1.02	U

Notes:

- | | |
|---|--|
| <p>1. Laboratory analyses conducted by Air Toxics Ltd. of Folsom, CA (2013 samples) and Pace Analytical of Mount Juliet, TN (2018 samples)</p> <p>2. VOCs analyzed by U.S. Environmental Protection Agency Method TO-15 or Modified TO-15 Low Level Analysis.</p> <p>3. PCE = perchloroethylene (tetrachloroethene)</p> <p>4. TCE = trichloroethene</p> <p>5. cDCE = cis-1,2-dichloroethene</p> <p>6. tDCE = trans-1,2-dichloroethene</p> | <p>7. VC = vinyl chloride</p> <p>8. Detected results shown in bold, detections exceeding MTCA Method B sub-slab screening levels highlighted in gray</p> <p>9. U = not detected at a concentration exceeding laboratory reporting limit</p> <p>12. MTCA = Washington State Model Toxics Control Act</p> <p>13. – = screening level not established</p> |
|---|--|

FIGURES





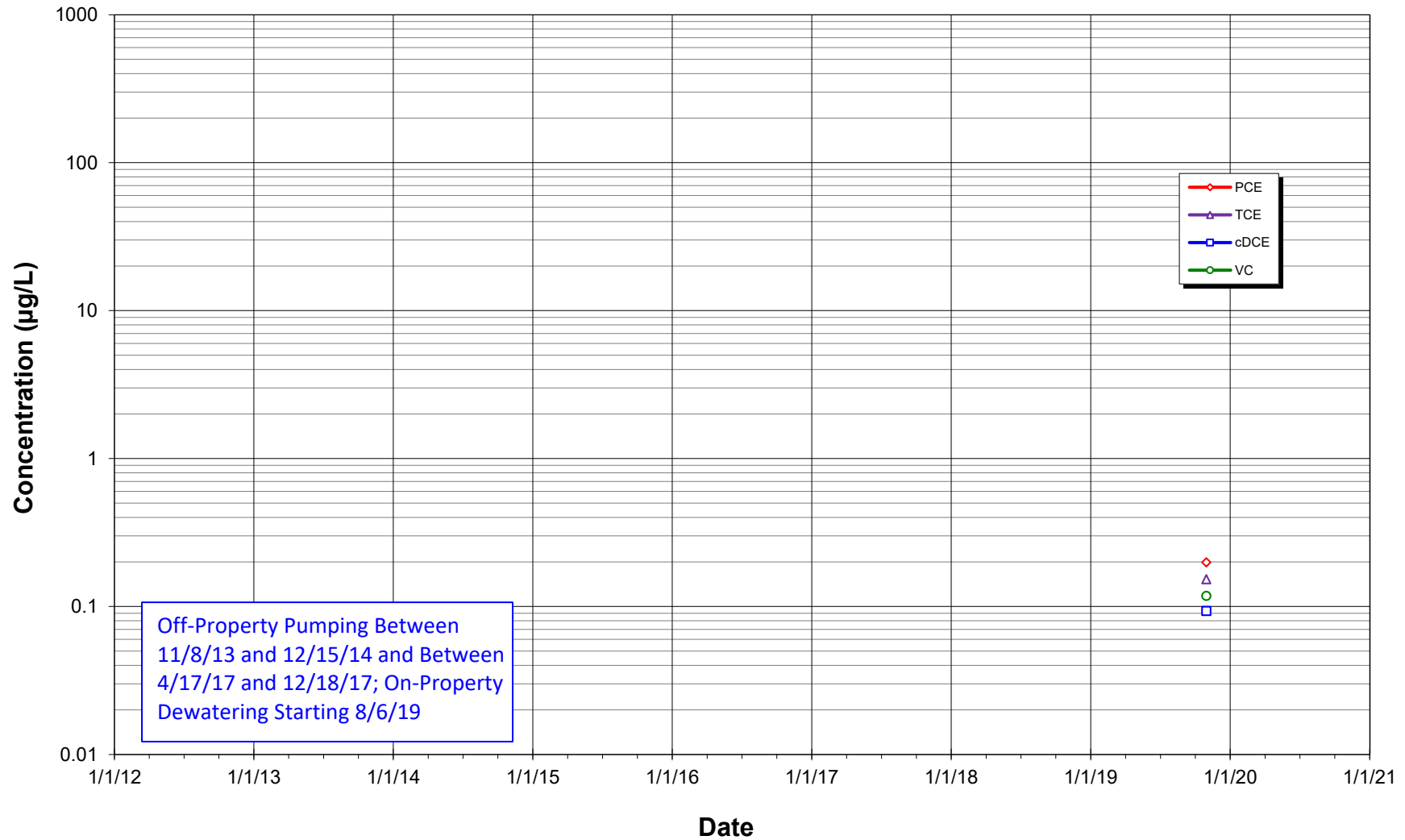
Groundwater Elevation Contours
October 21, 2019
 Former American Linen Supply
 700 Dexter Avenue North
 Seattle, Washington

FIGURE

2

ATTACHMENT A
CVOC Time Trend Plots

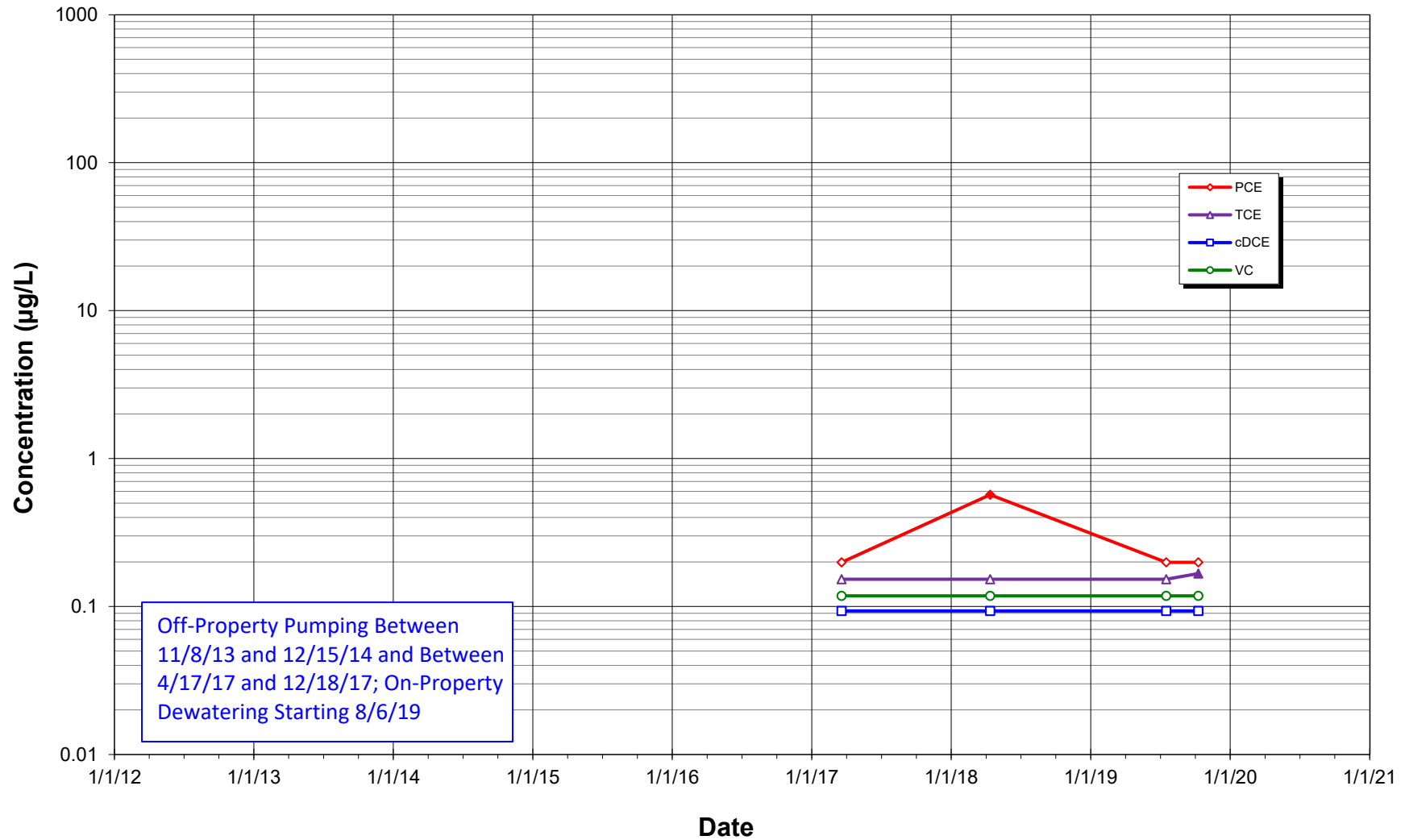
Concentration vs Time
FMW-143 (10 to 5 feet NAVD), 9th Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

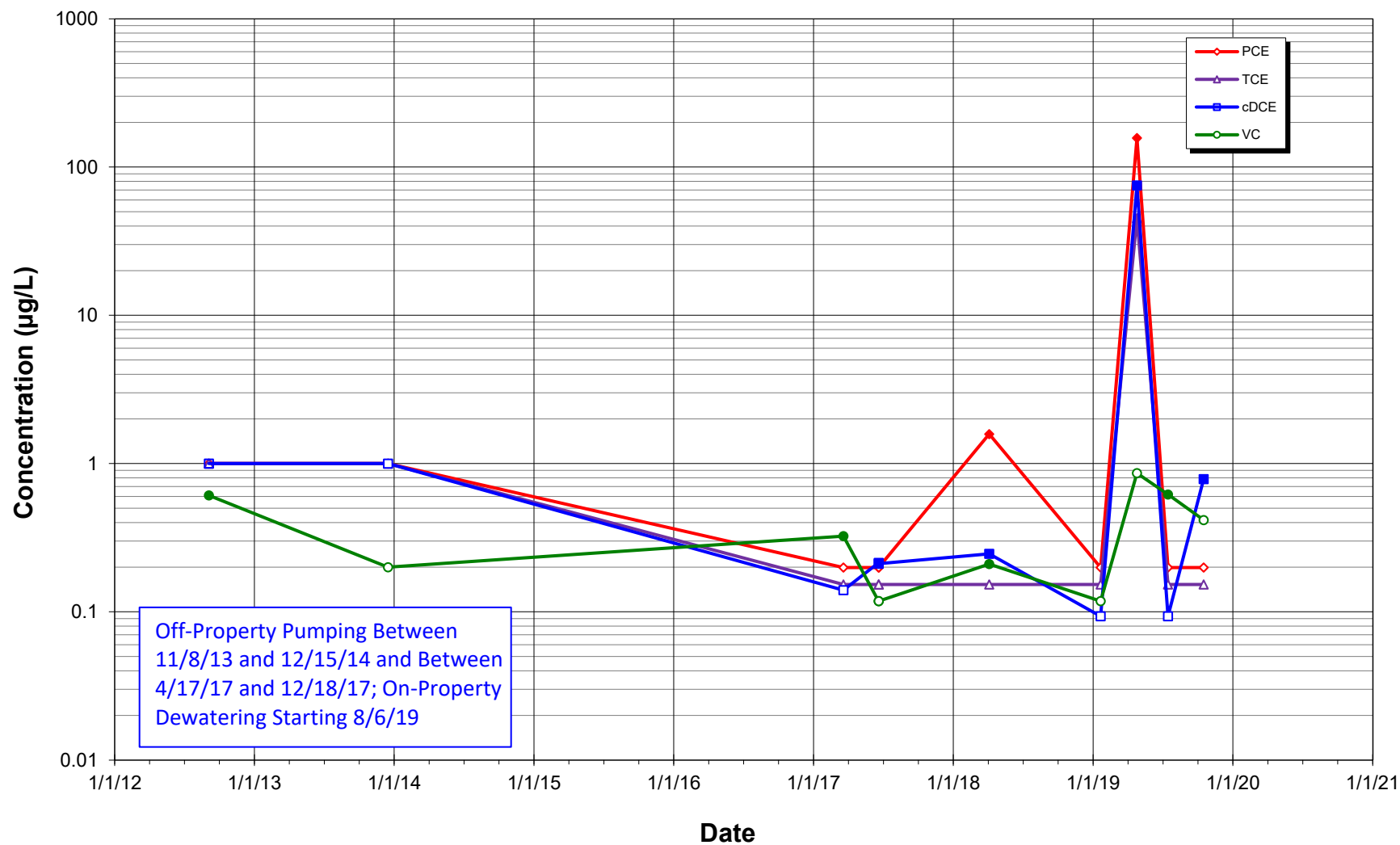
Concentration vs Time
MW-8 (28.7 to 14.2 feet NAVD), Property
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

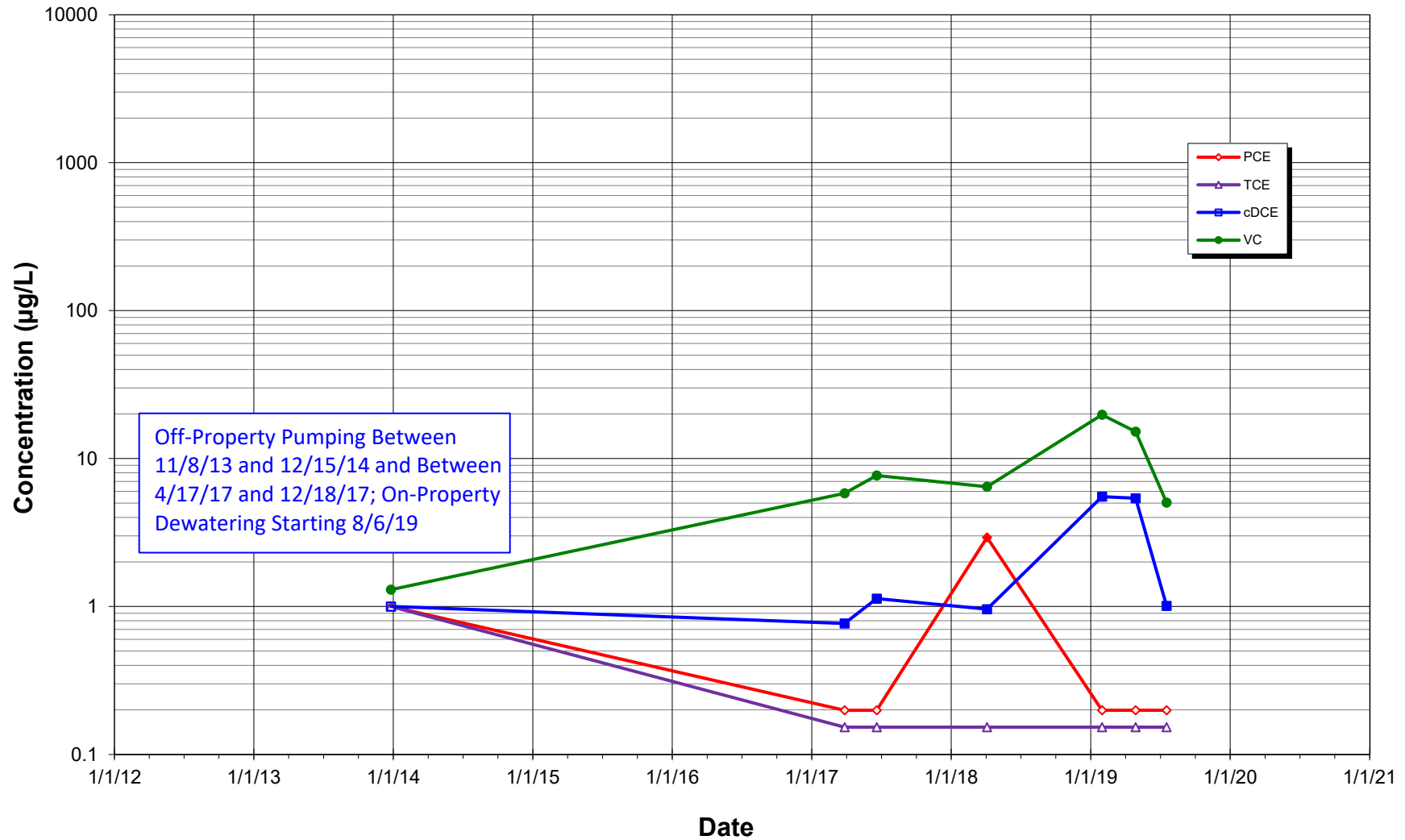
Concentration vs Time
MW-9 (33.8 to 18.8 feet NAVD), 8th Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

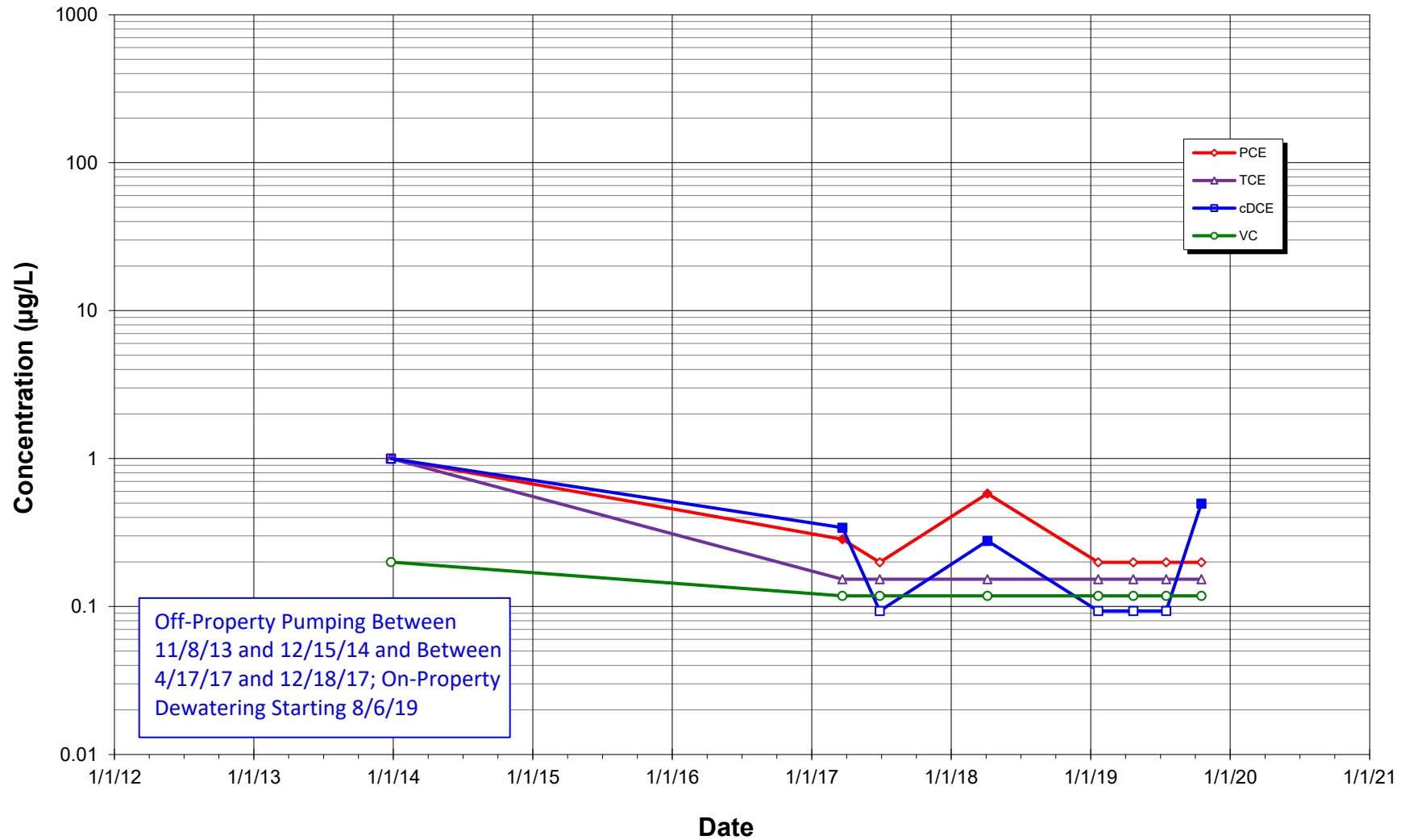
Concentration vs Time
MW121 (26.7 to 16.7 feet NAVD), 8th Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

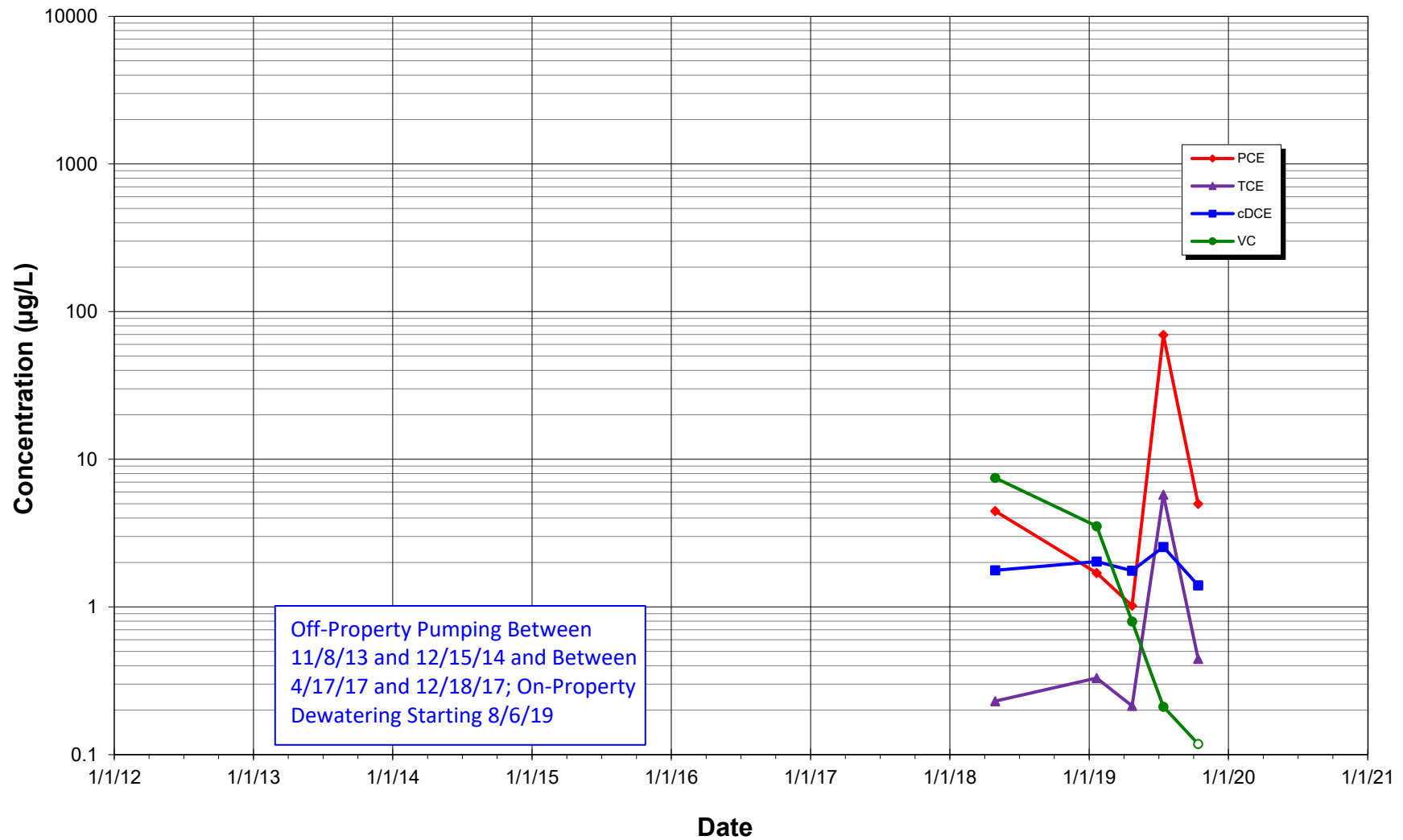
Concentration vs Time
MW125 (28.6 to 13.6 feet NAVD), Valley Street
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

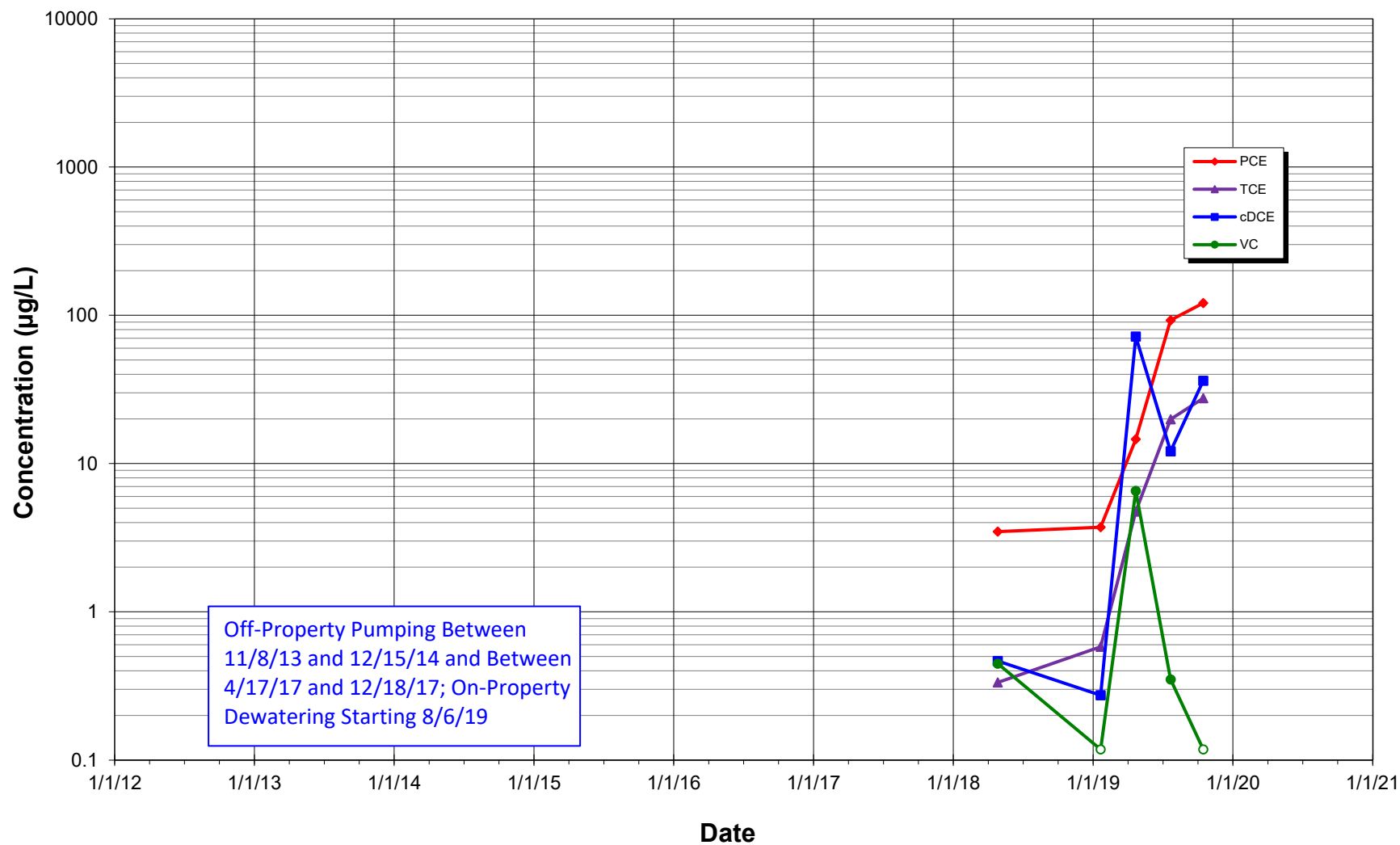
Concentration vs Time
MW-154 (28.1 to 18.1 feet NAVD), Roy Street
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

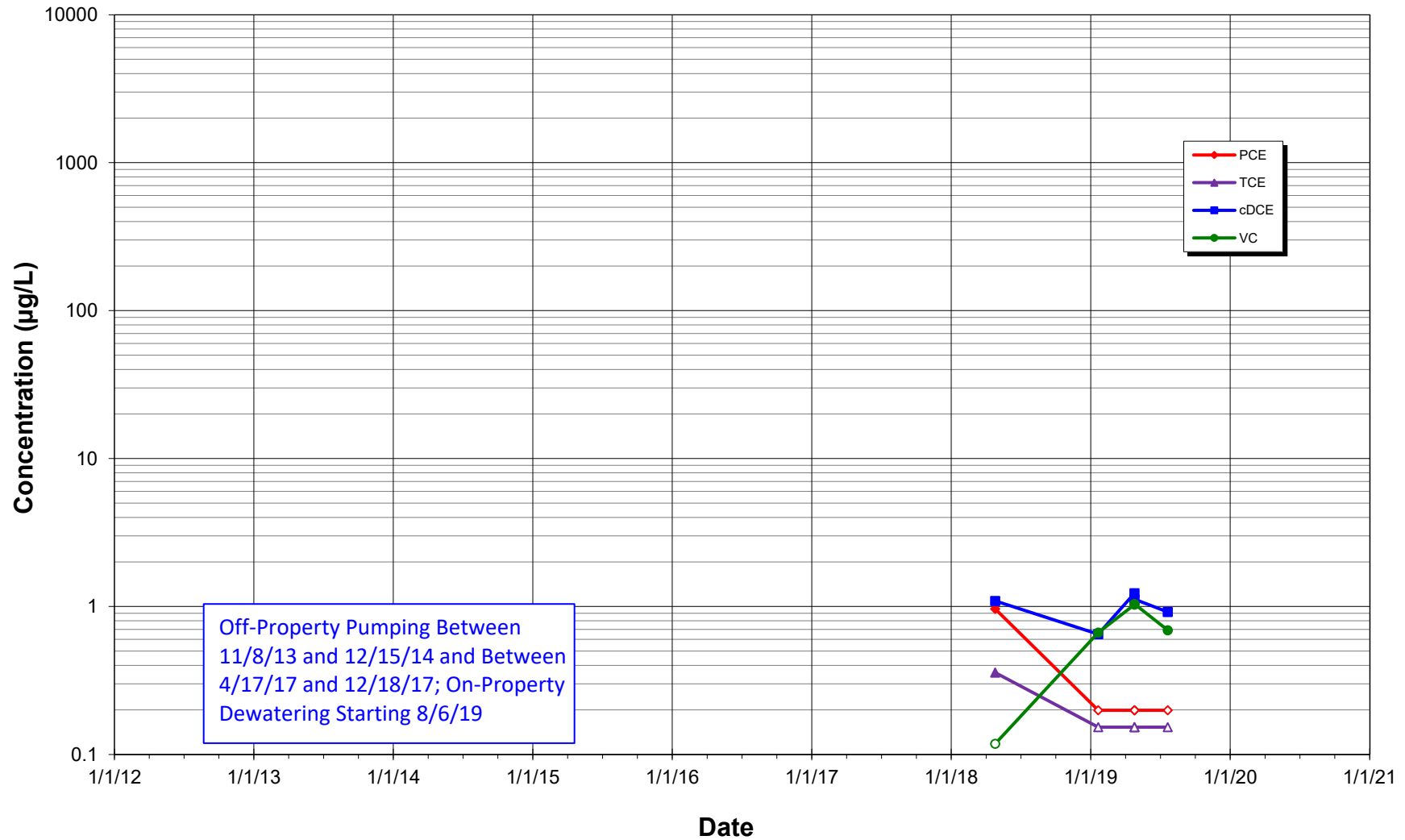
Concentration vs Time
MW-155 (24.4 to 14.4 feet NAVD), Roy Street
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

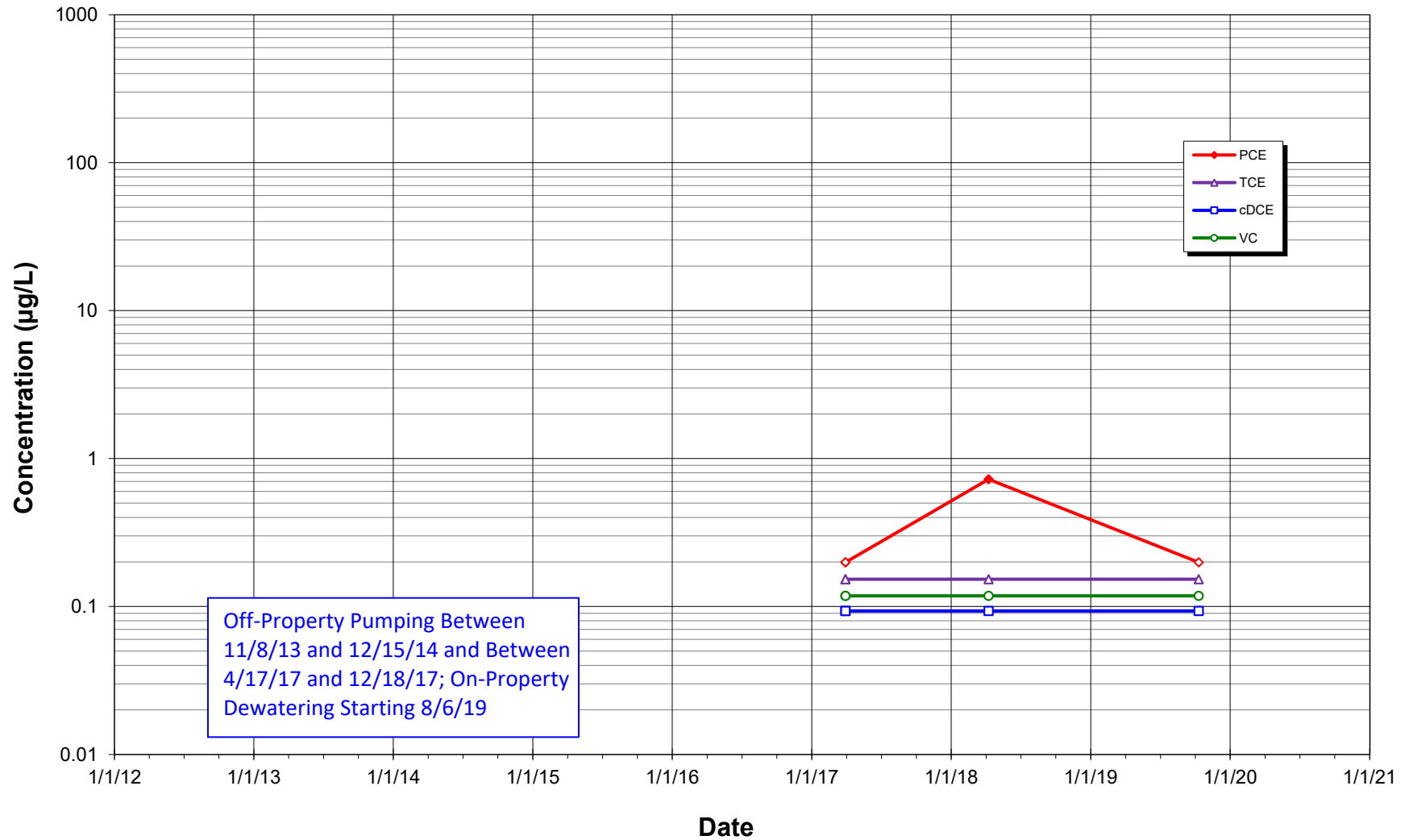
Concentration vs Time
MW-159 (22.9 to 12.9 feet NAVD), 8th Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

Concentration vs Time
MW214 (20.8 to 10.8 feet NAVD), Valley Street
American Linen Supply Co–Dexter Ave Site

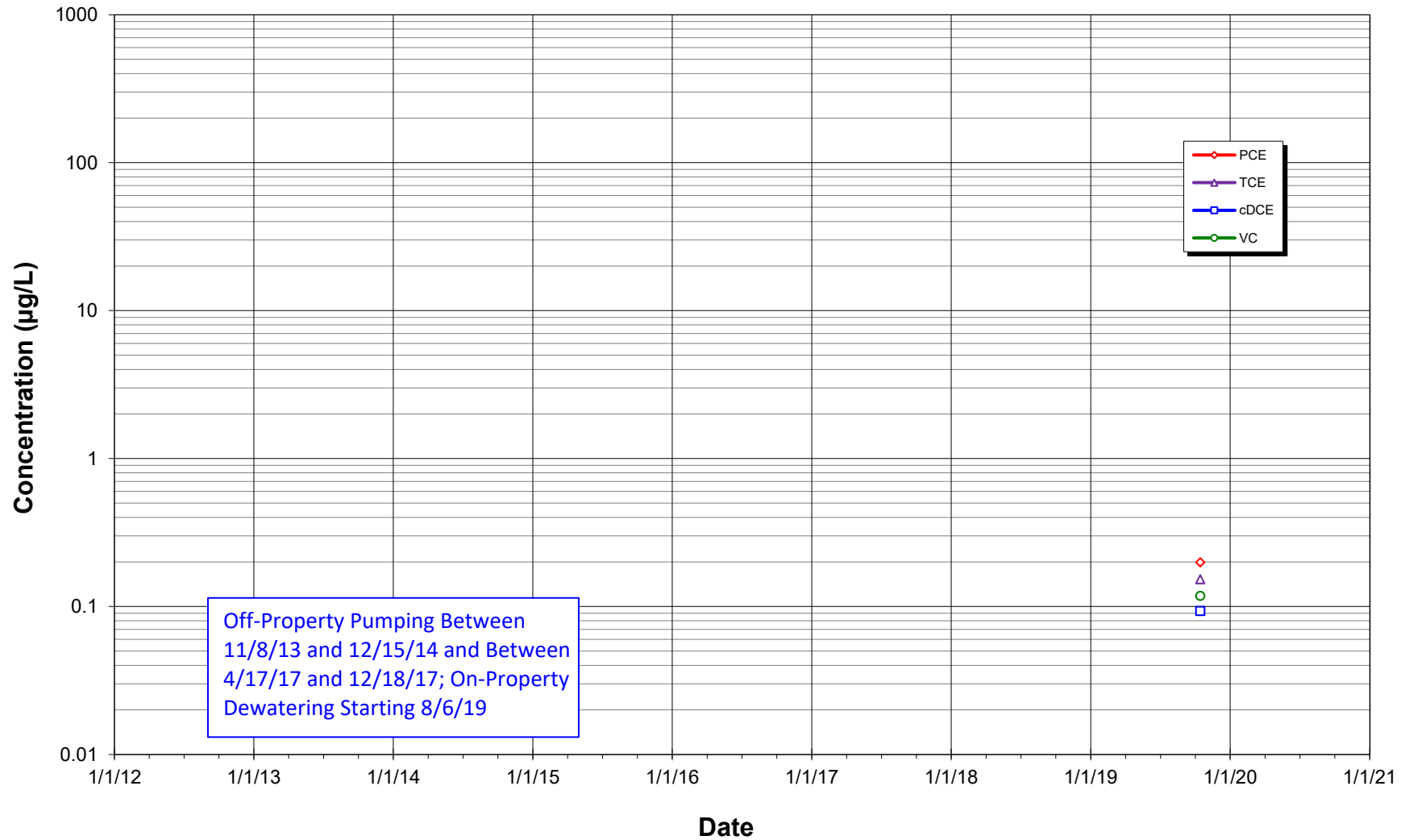


Off-Property Pumping Between 11/8/13 and 12/15/14 and Between 4/17/17 and 12/18/17; On-Property Dewatering Starting 8/6/19

Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

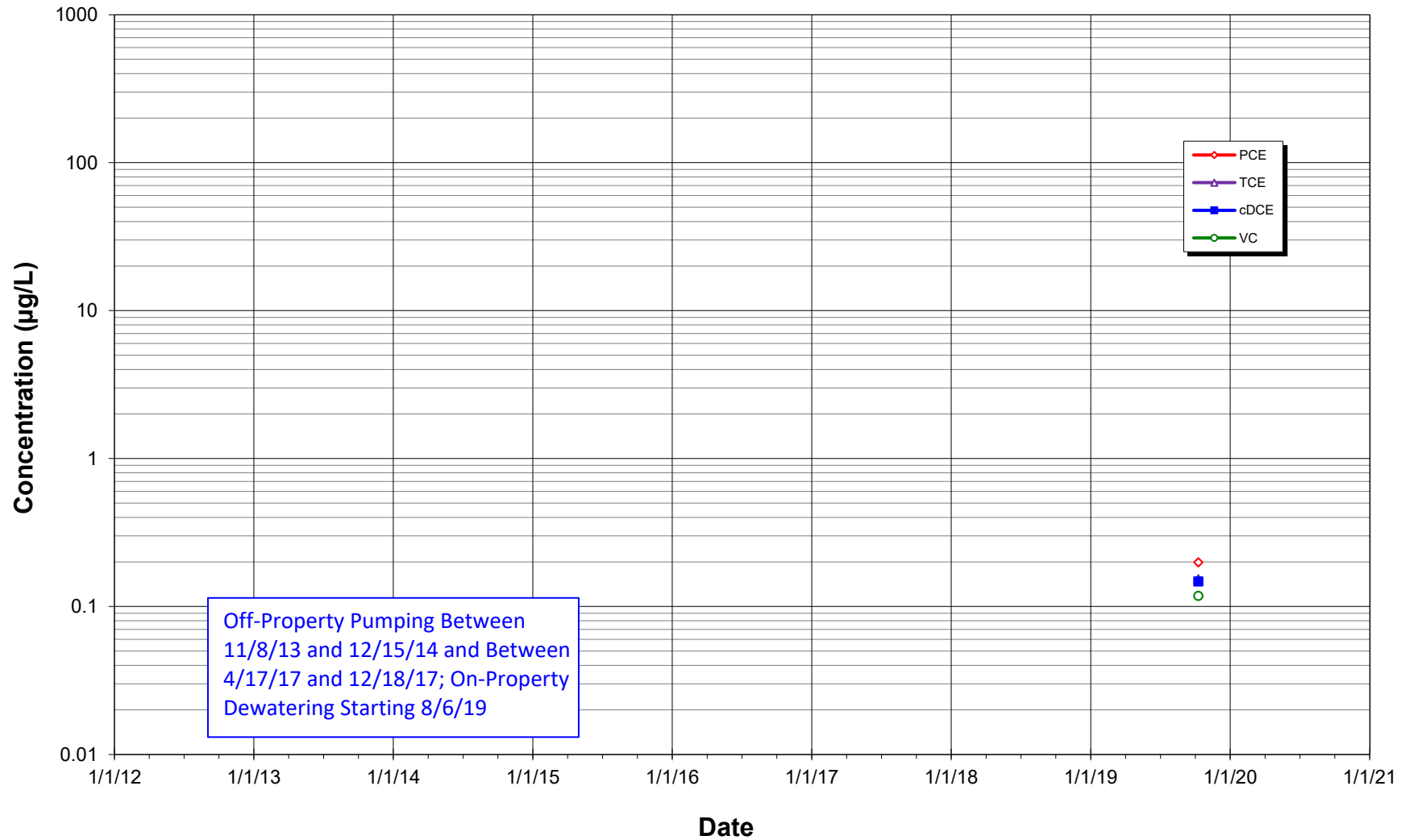
Concentration vs Time
MW-305 (37.4 to 27.4 feet NAVD), Dexter Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

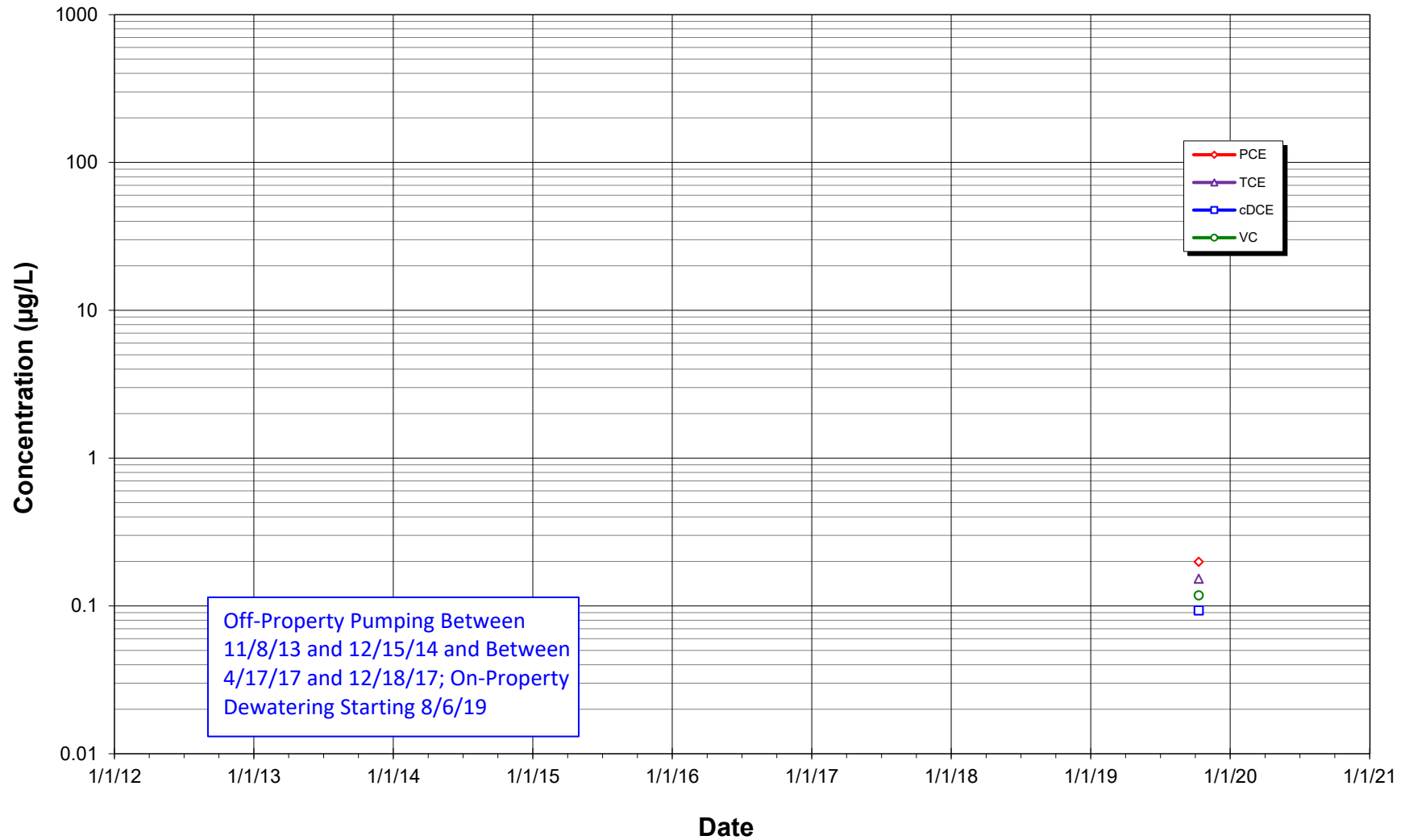
Concentration vs Time
MW-310 (19.2 to 9.2 feet NAVD), Alley Between 8th and 9th
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

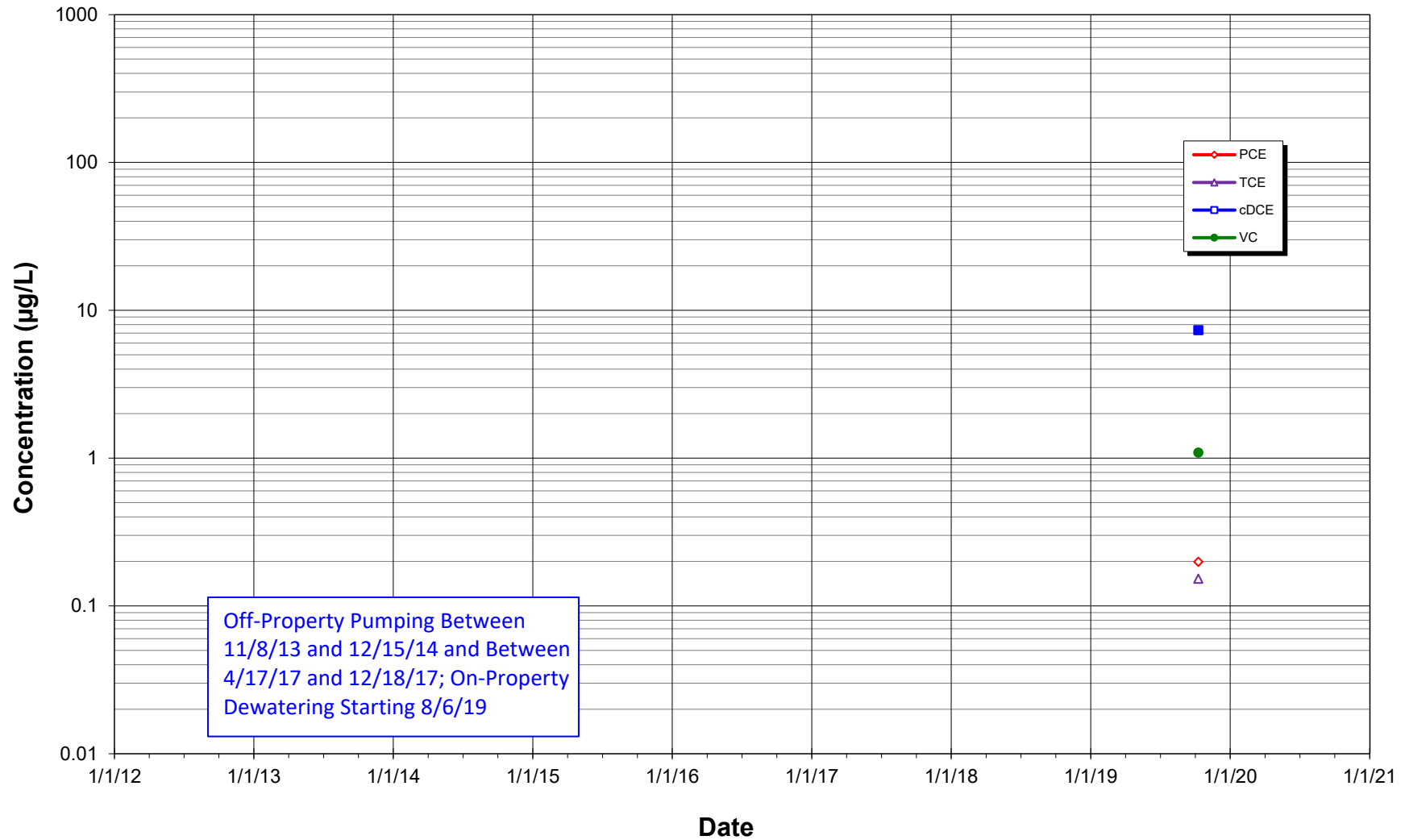
Concentration vs Time
MW-312 (19.9 to 9.9 feet NAVD), Alley Between 8th and 9th
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

Concentration vs Time
MW-313 (20.4 to 10.4 feet NAVD), Alley Between 8th and 9th
American Linen Supply Co–Dexter Ave Site

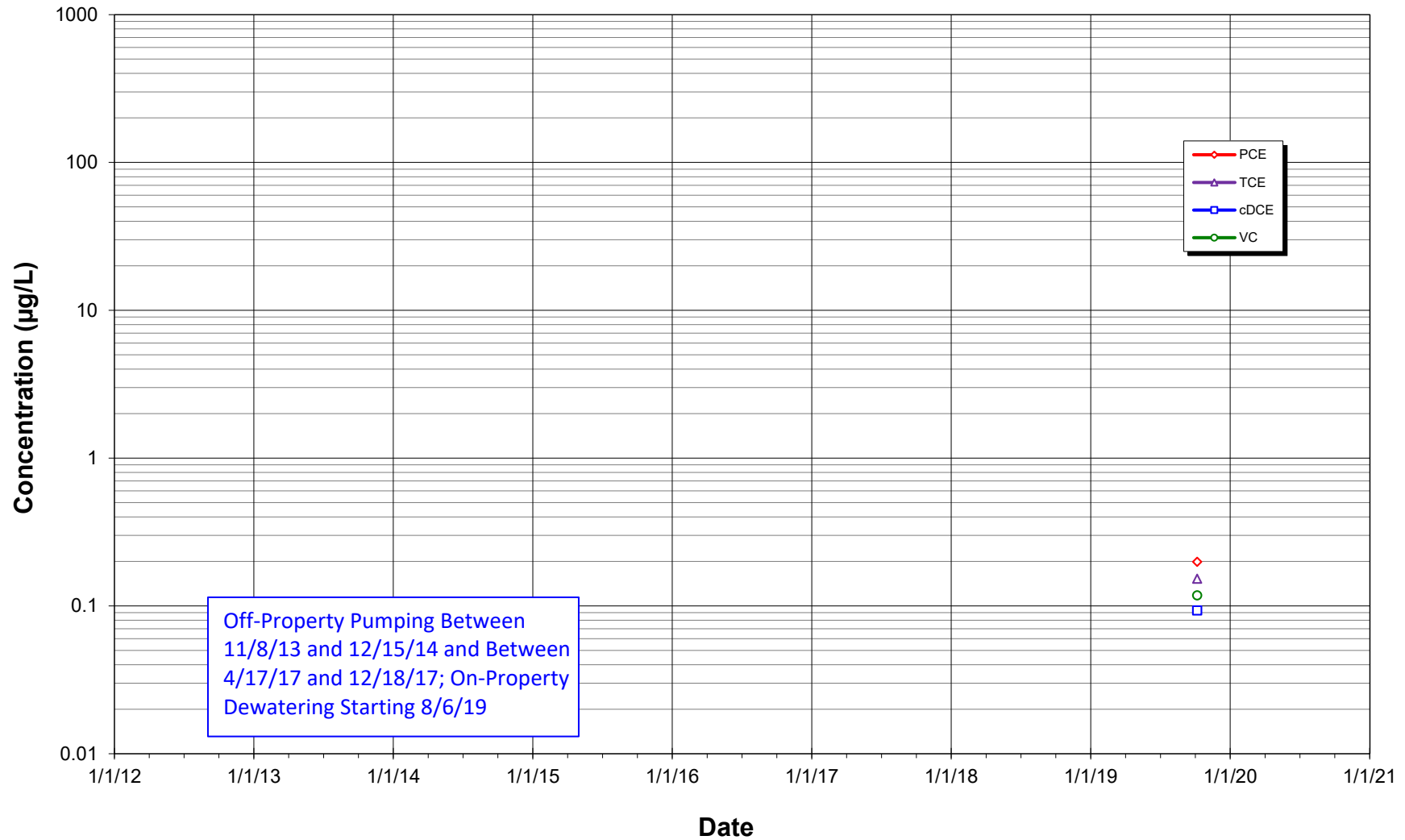


Off-Property Pumping Between 11/8/13 and 12/15/14 and Between 4/17/17 and 12/18/17; On-Property Dewatering Starting 8/6/19

Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

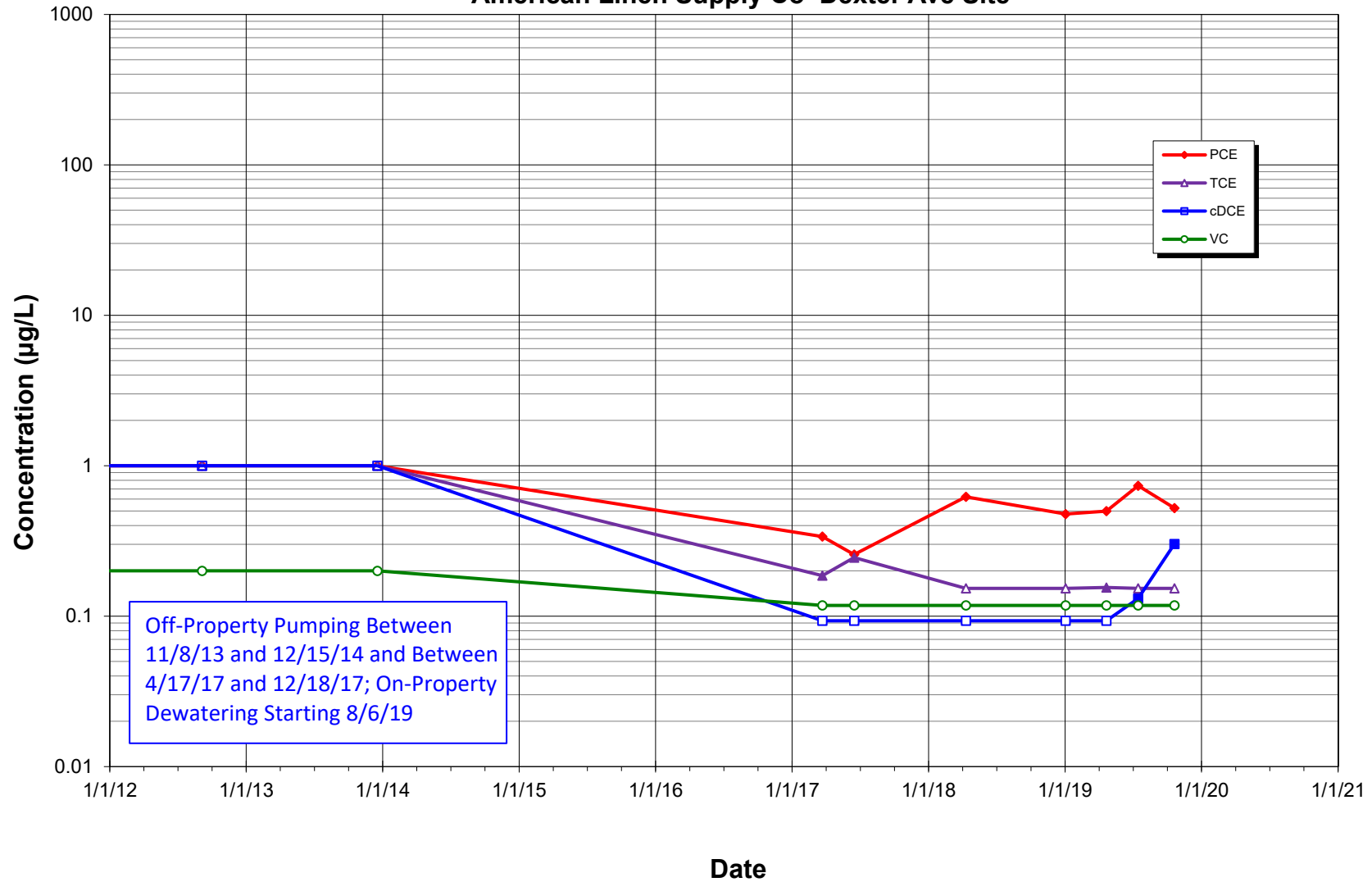
Concentration vs Time
MW-320 (18.6 to 8.6 feet NAVD), 9th Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

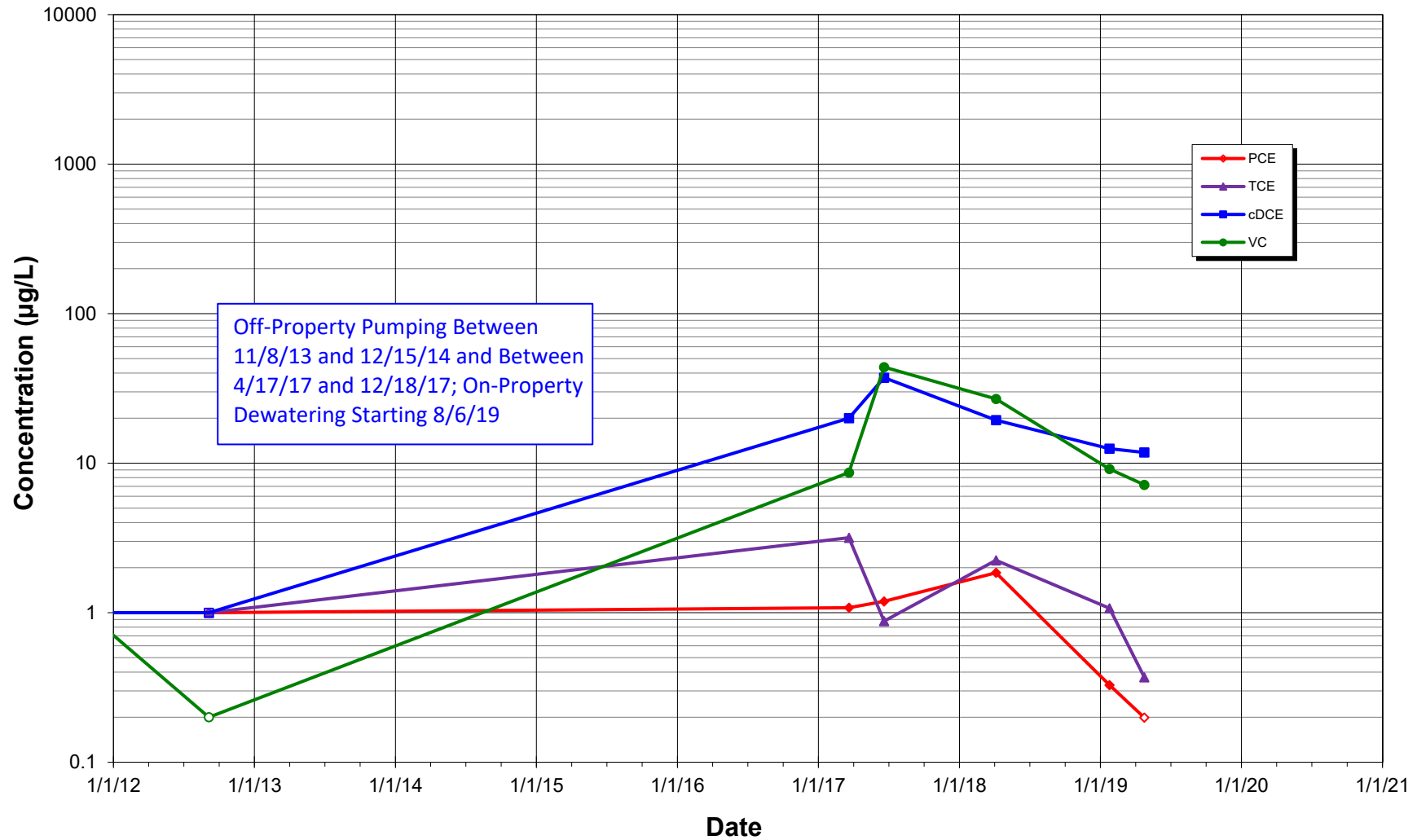
Concentration vs Time
R-MW5 (42.0 to 27.0 feet NAVD), Dexter Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

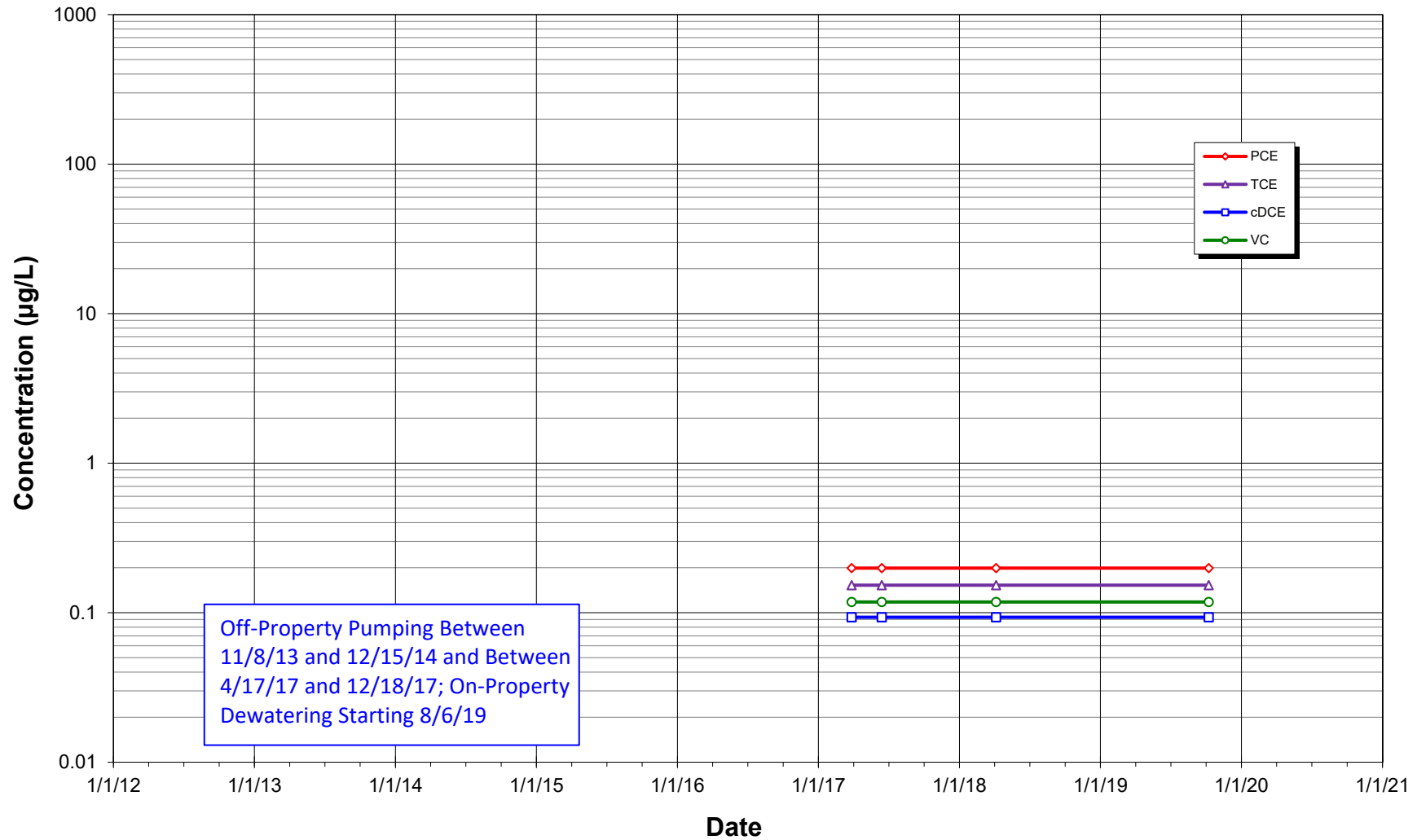
Concentration vs Time
R-MW6 (33.3 to 23.3 feet NAVD), 8th Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

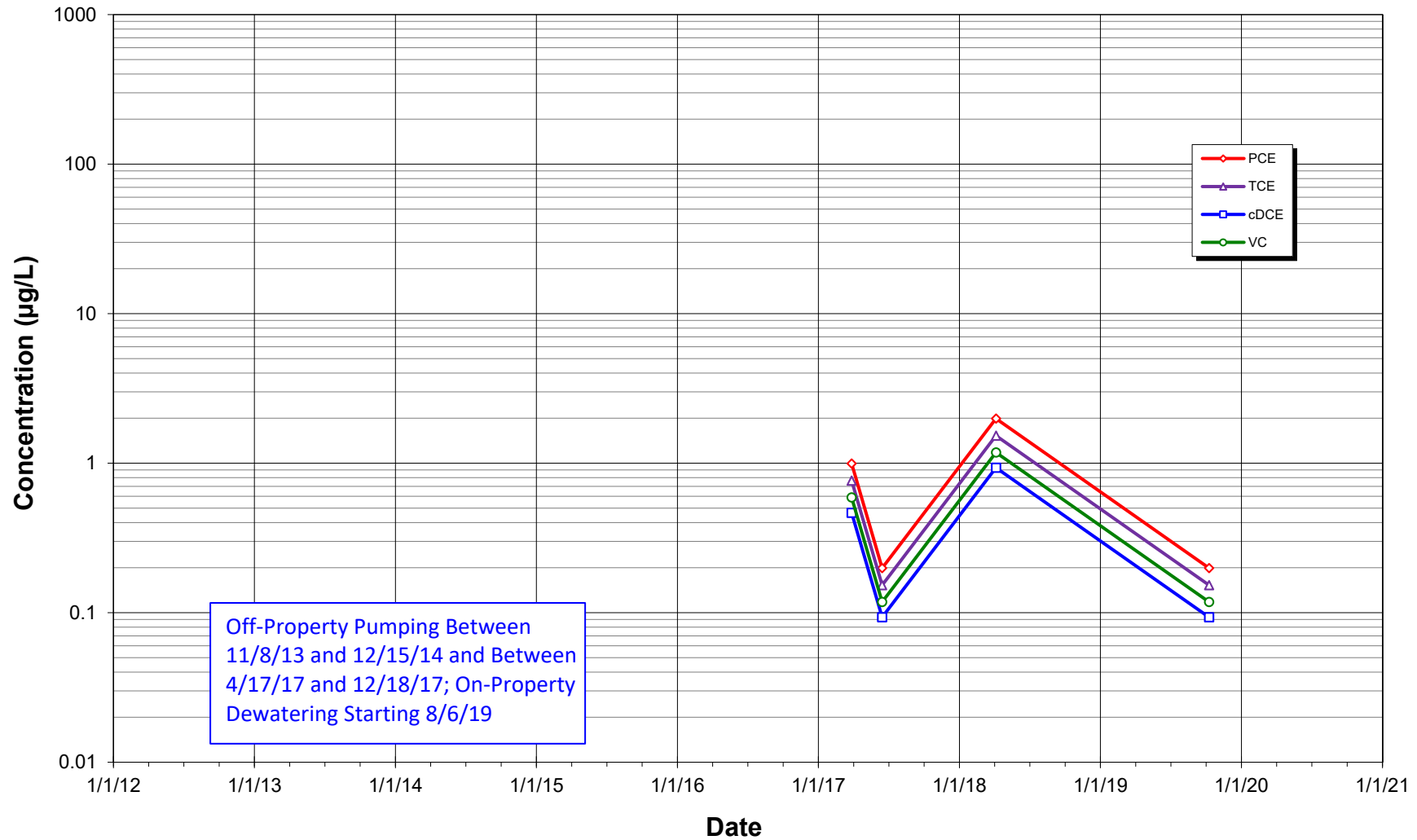
Concentration vs Time
SCL-MW101 (25.5 to 15.5 feet NAVD), Alley
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

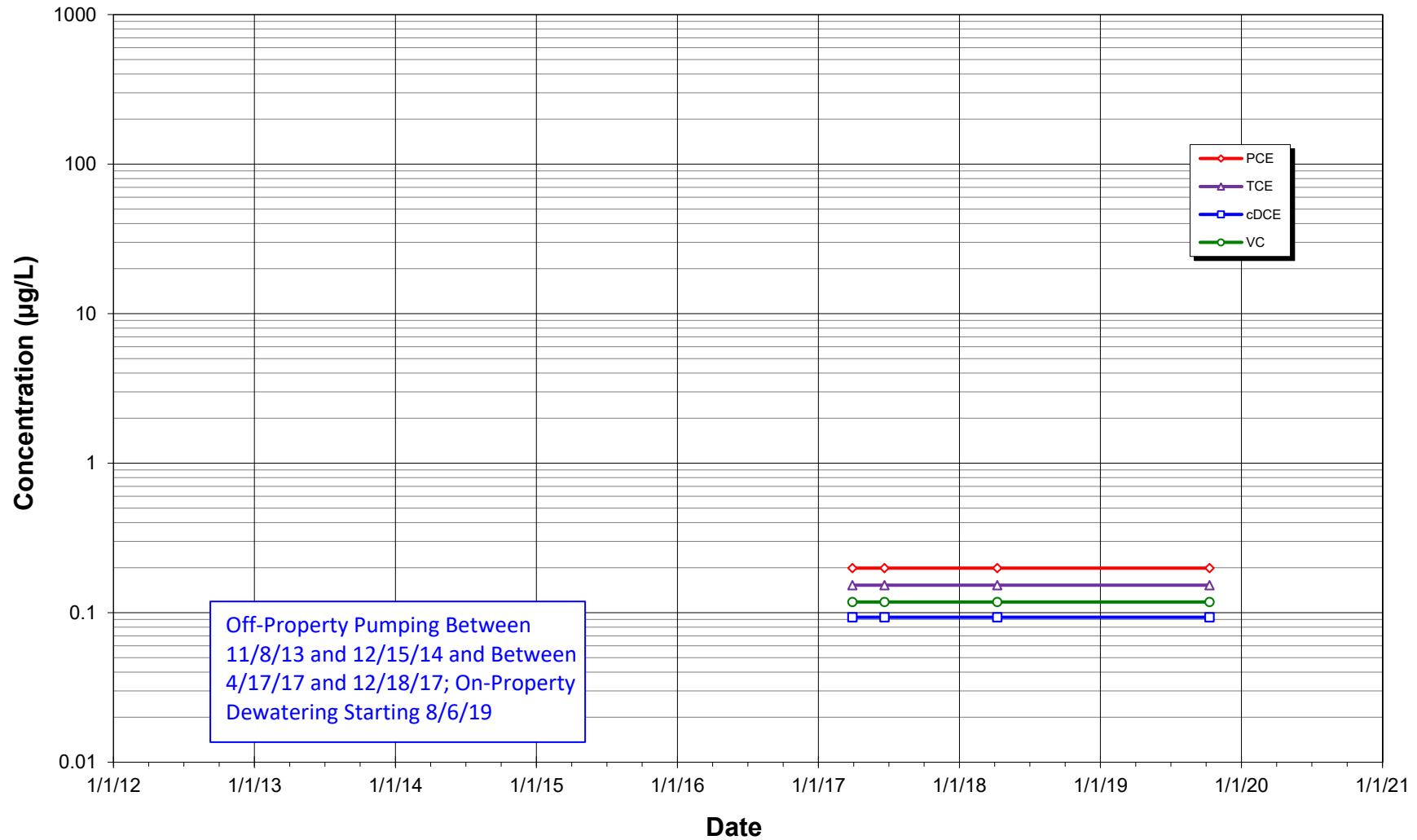
Concentration vs Time
SCL-MW105 (11.3 to 1.3 feet NAVD), Alley
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

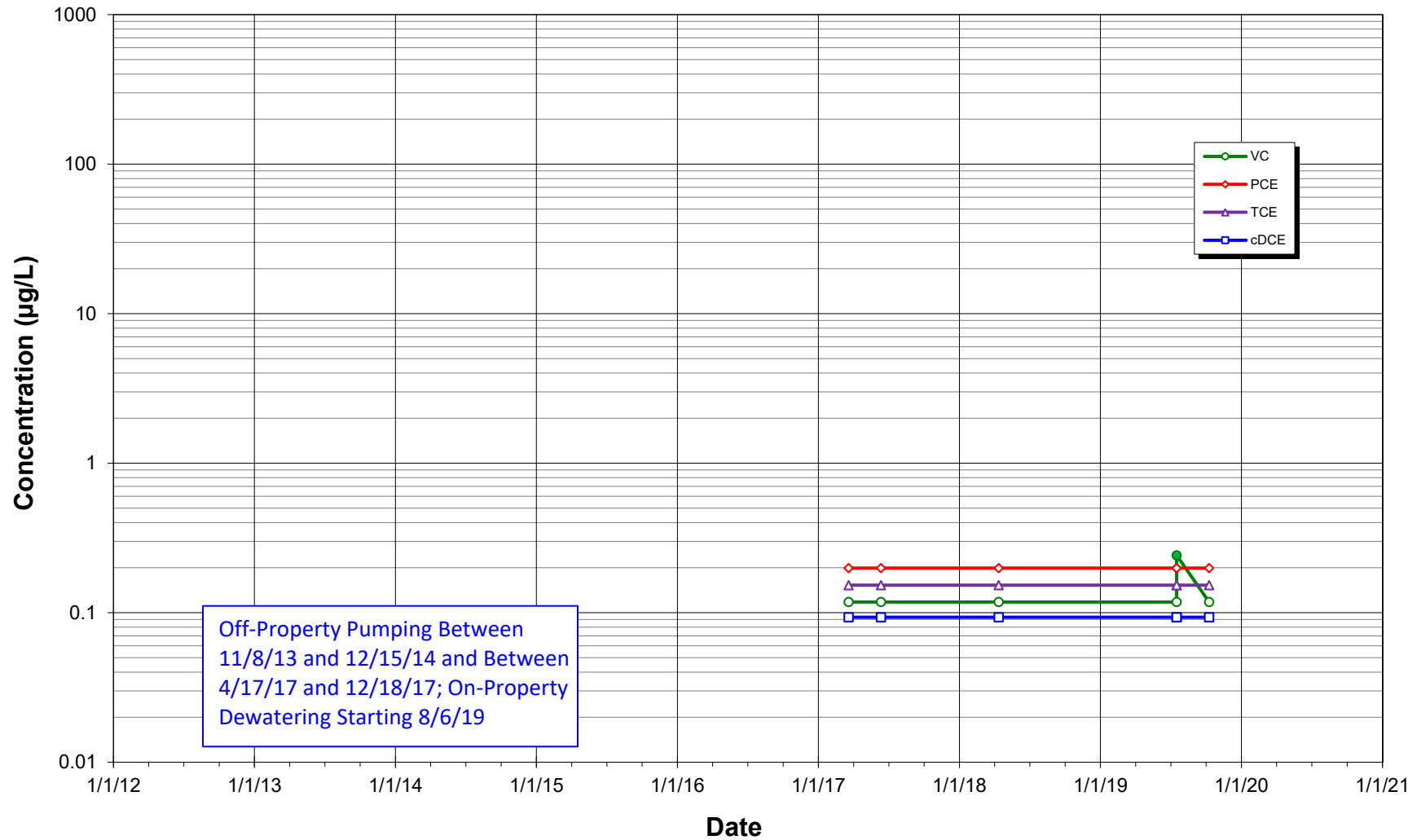
Concentration vs Time
SCS-2 (28.2 to 18.2 feet NAVD), SCL Property
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

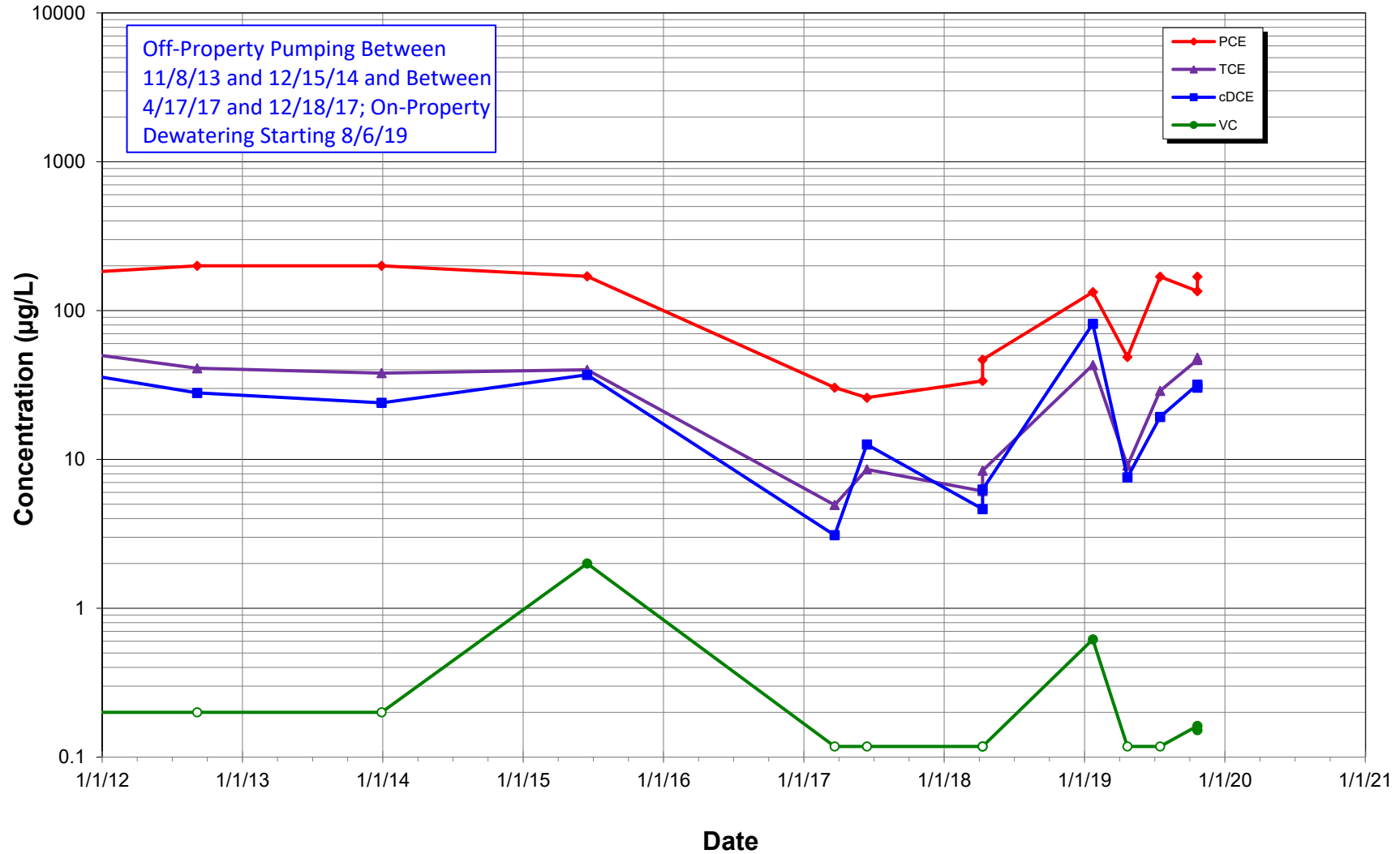
Concentration vs Time
SMW-3 (17.1 to 7.1 feet NAVD), Valley Street
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

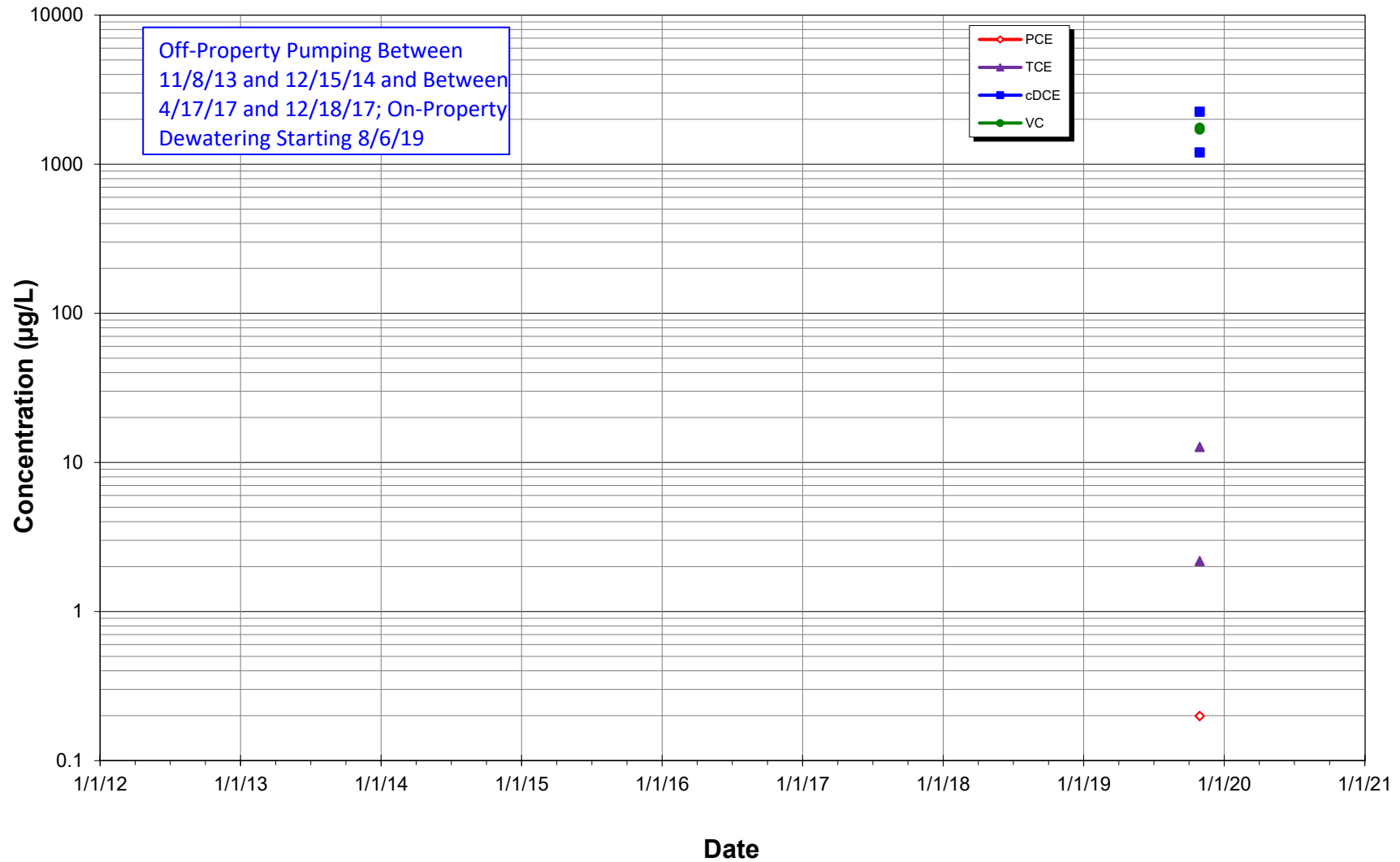
**Concentration vs Time
BB-8 (13.7 to 3.7 feet NAVD), Roy Street
American Linen Supply Co–Dexter Ave Site**



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

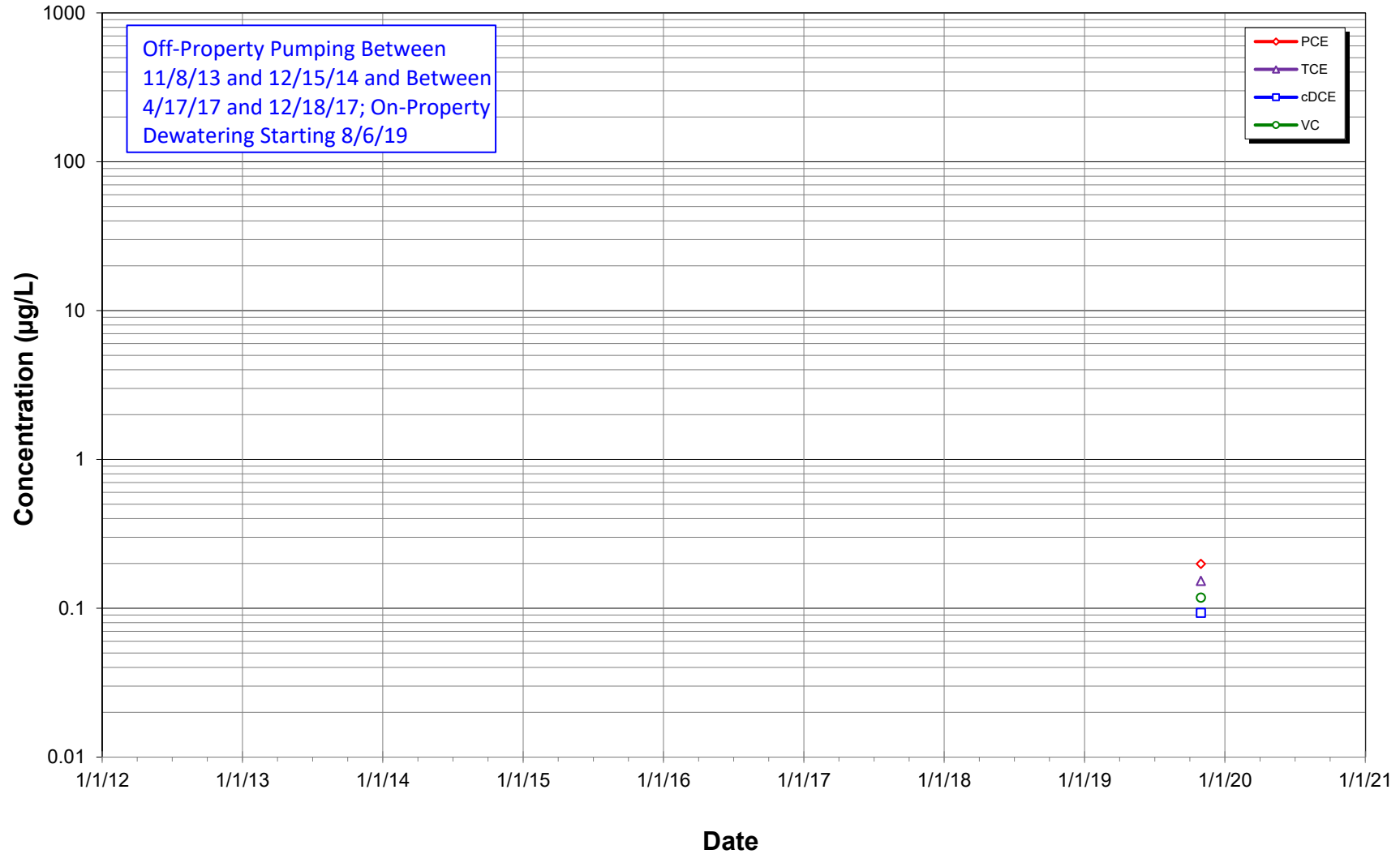
Concentration vs Time
FMW-141 (-12 to -22 feet NAVD), Alley Between 8th and 9th
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

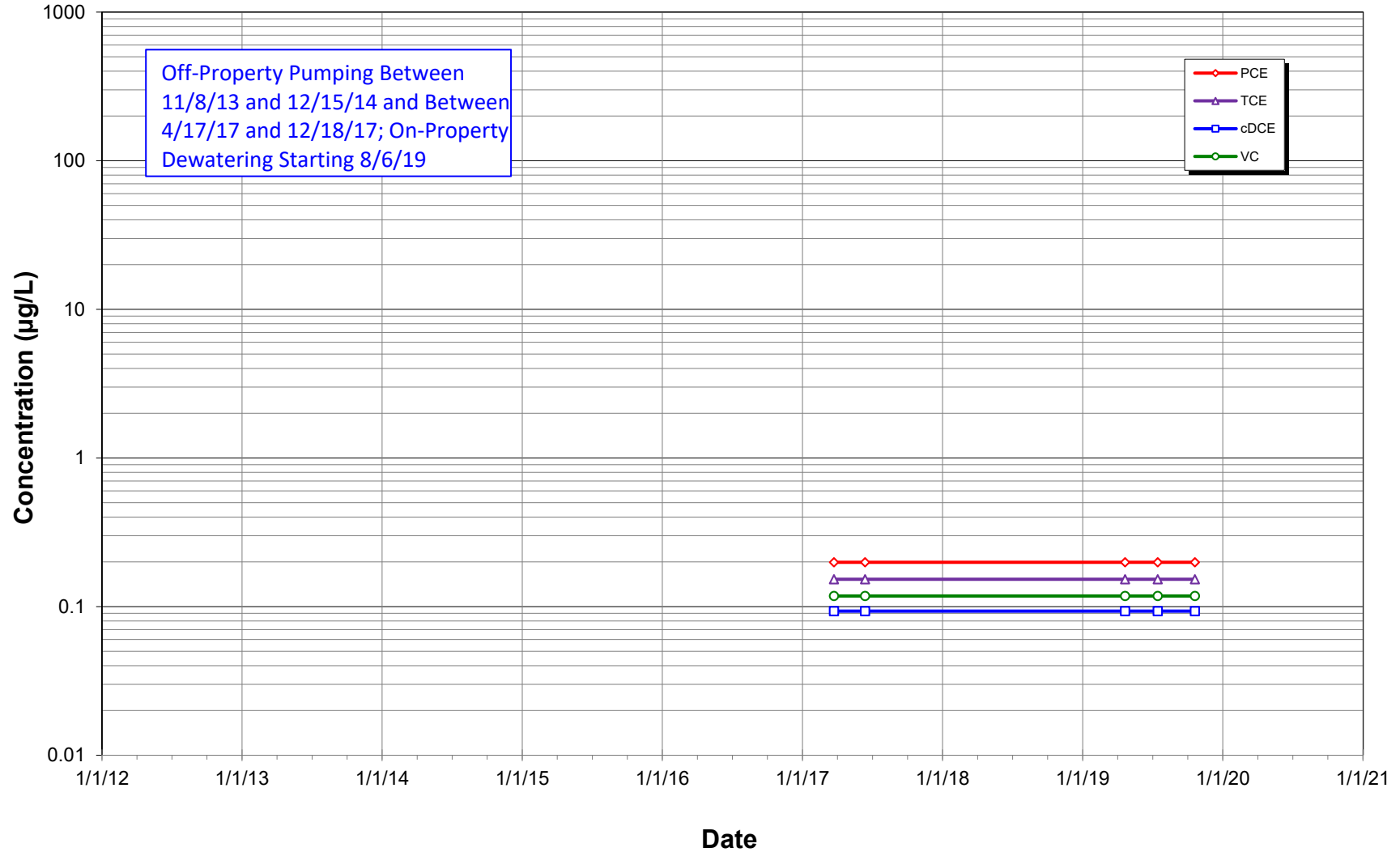
Concentration vs Time
FMW-142 (-5 to -10 feet NAVD), 9th Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

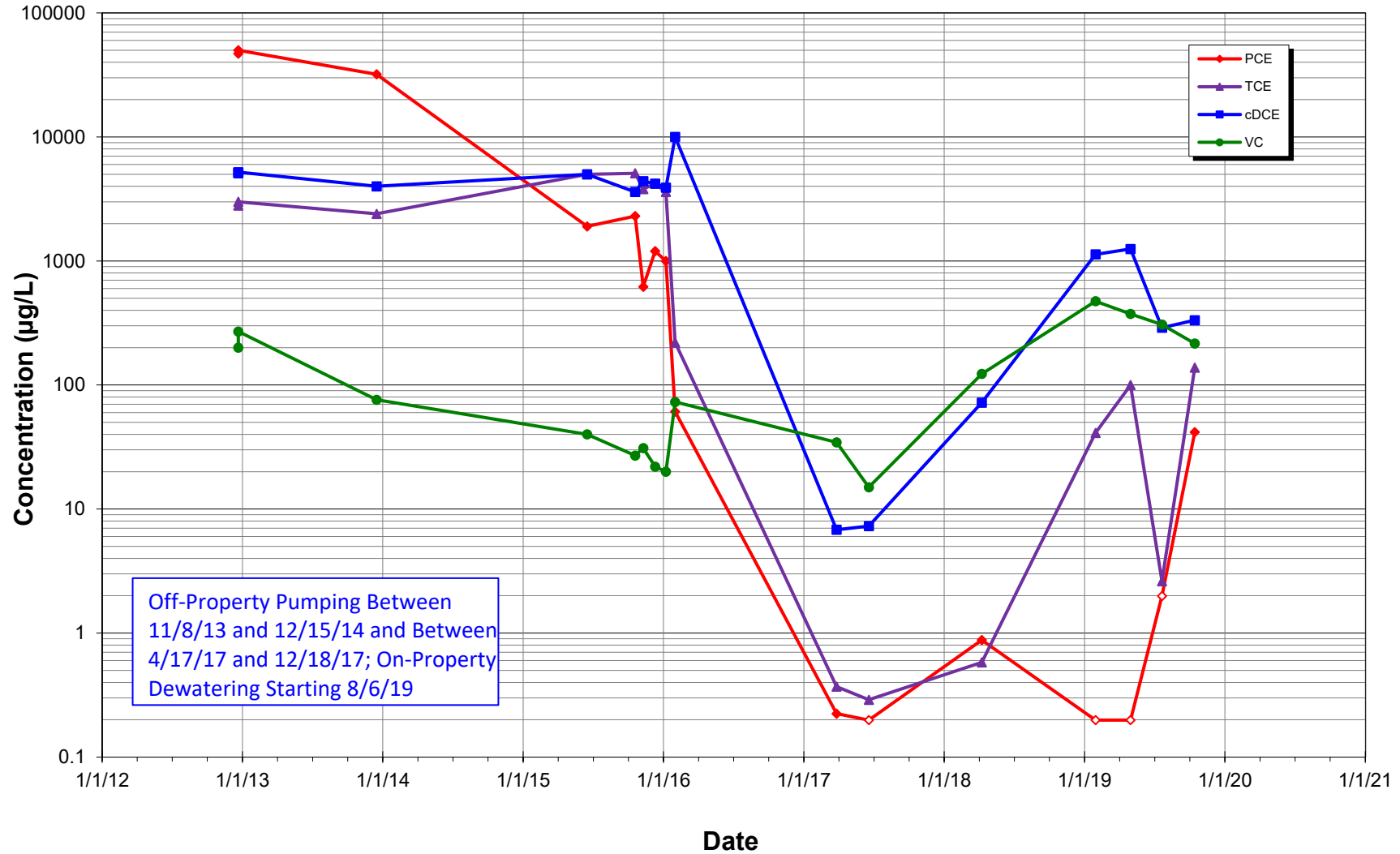
Concentration vs Time
GEI-1 (1.2 to -8.8 feet NAVD), Block 37
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

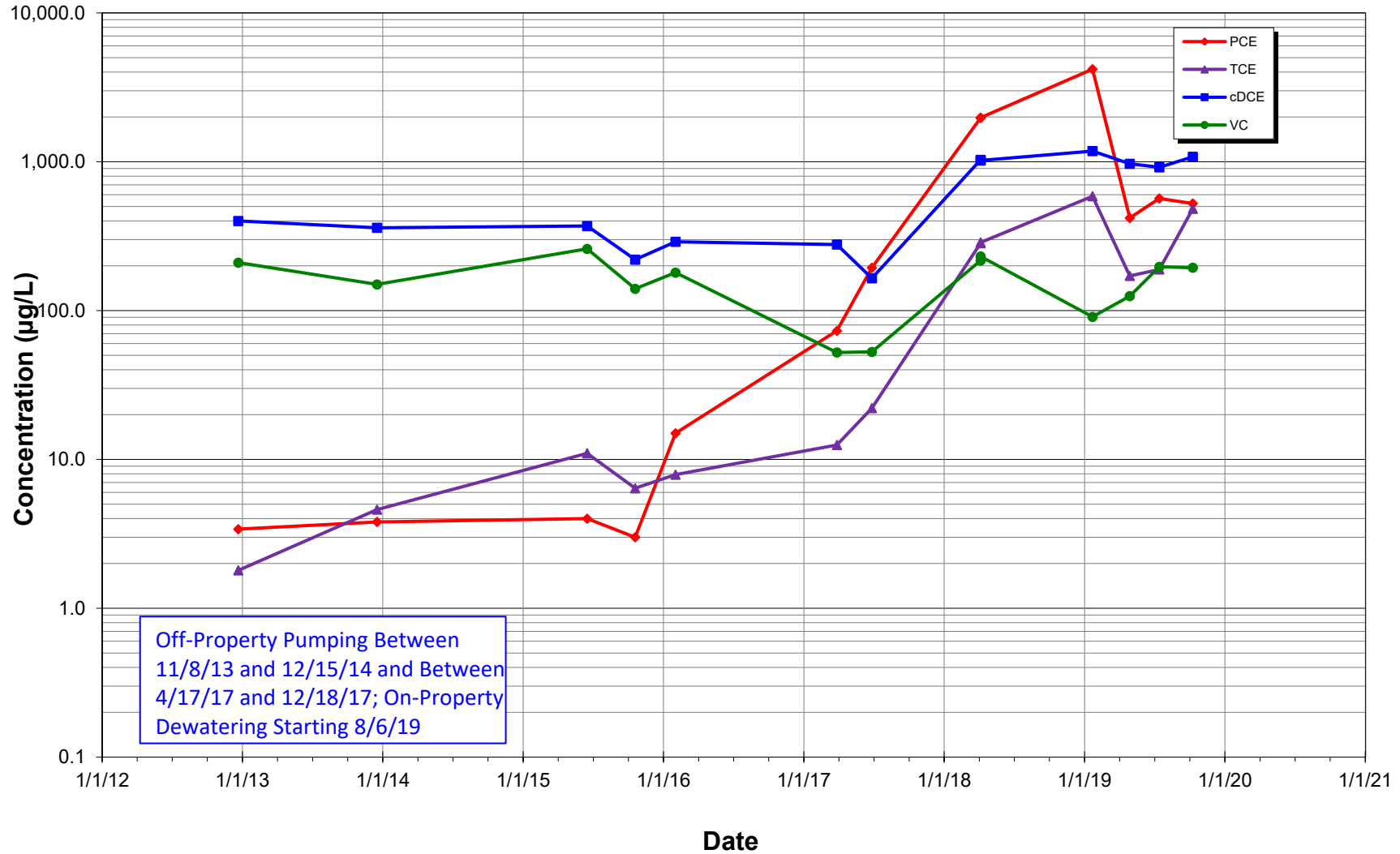
Concentration vs Time
MW107 (8.8 to 1.2 feet NAVD), 8th Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

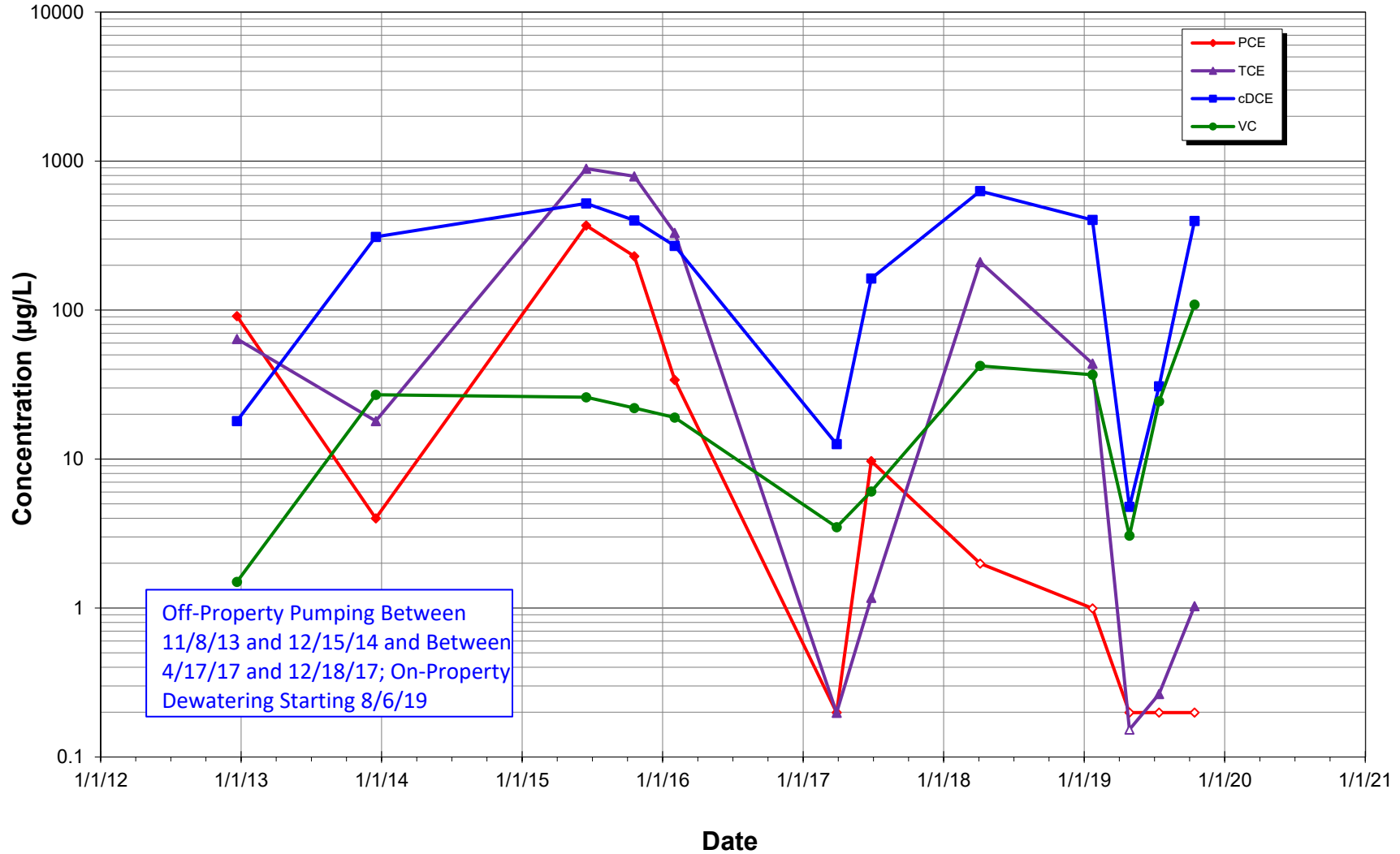
Concentration vs Time
MW108 (-7.2 to -17.2 feet NAVD), Alley Between 8th and 9th
American Linen Supply Co–Dexter Ave Site



Off-Property Pumping Between 11/8/13 and 12/15/14 and Between 4/17/17 and 12/18/17; On-Property Dewatering Starting 8/6/19

- Notes:**
- 1) All results detected below the laboratory MDLs are shown as hollow data points .
 - 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

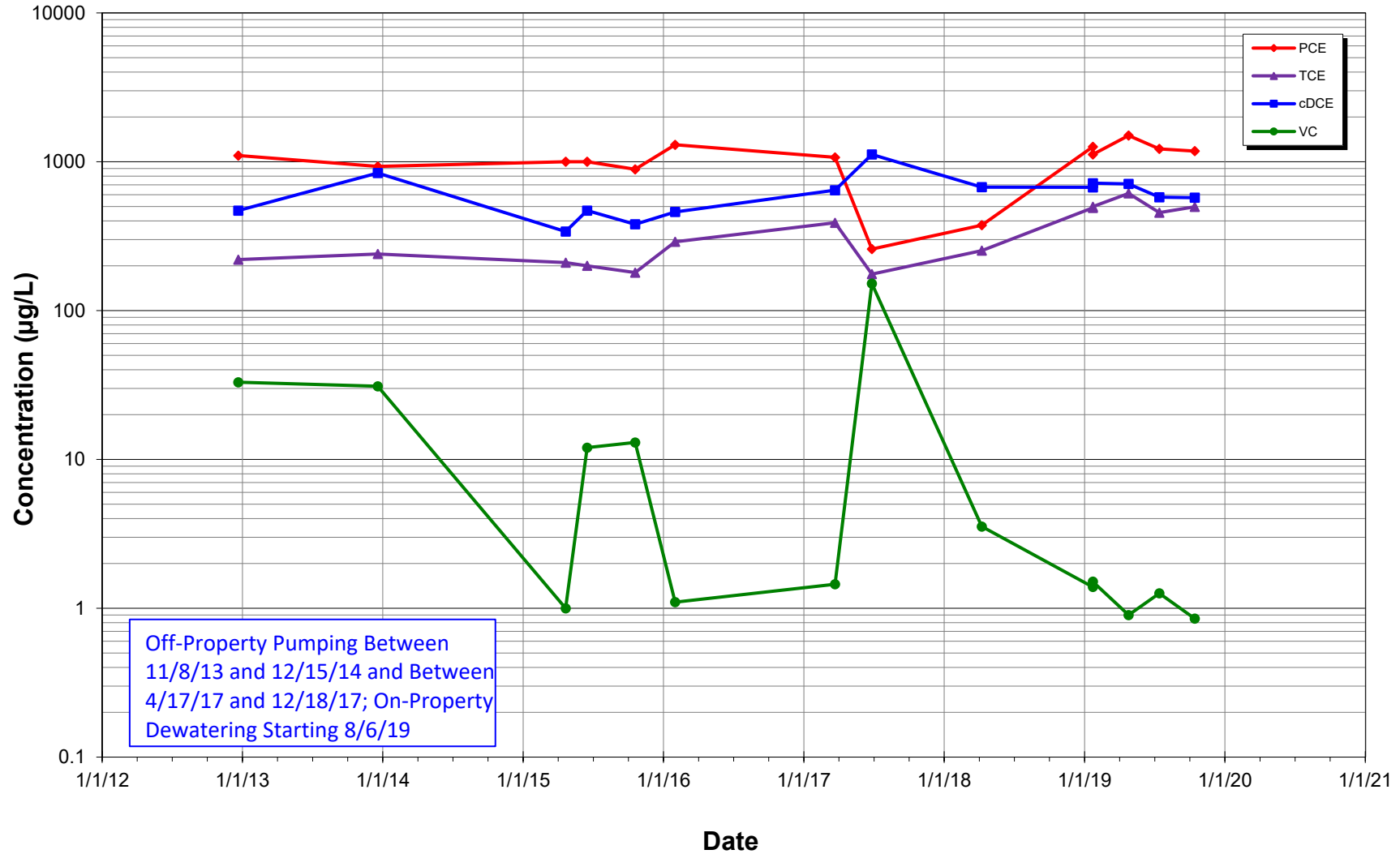
Concentration vs Time
MW109 (0.0 to -10.0), Alley Between 8th and 9th
American Linen Supply Co–Dexter Ave Site



Off-Property Pumping Between 11/8/13 and 12/15/14 and Between 4/17/17 and 12/18/17; On-Property Dewatering Starting 8/6/19

- Notes:
- 1) All results detected below the laboratory MDLs are shown as hollow data points .
 - 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

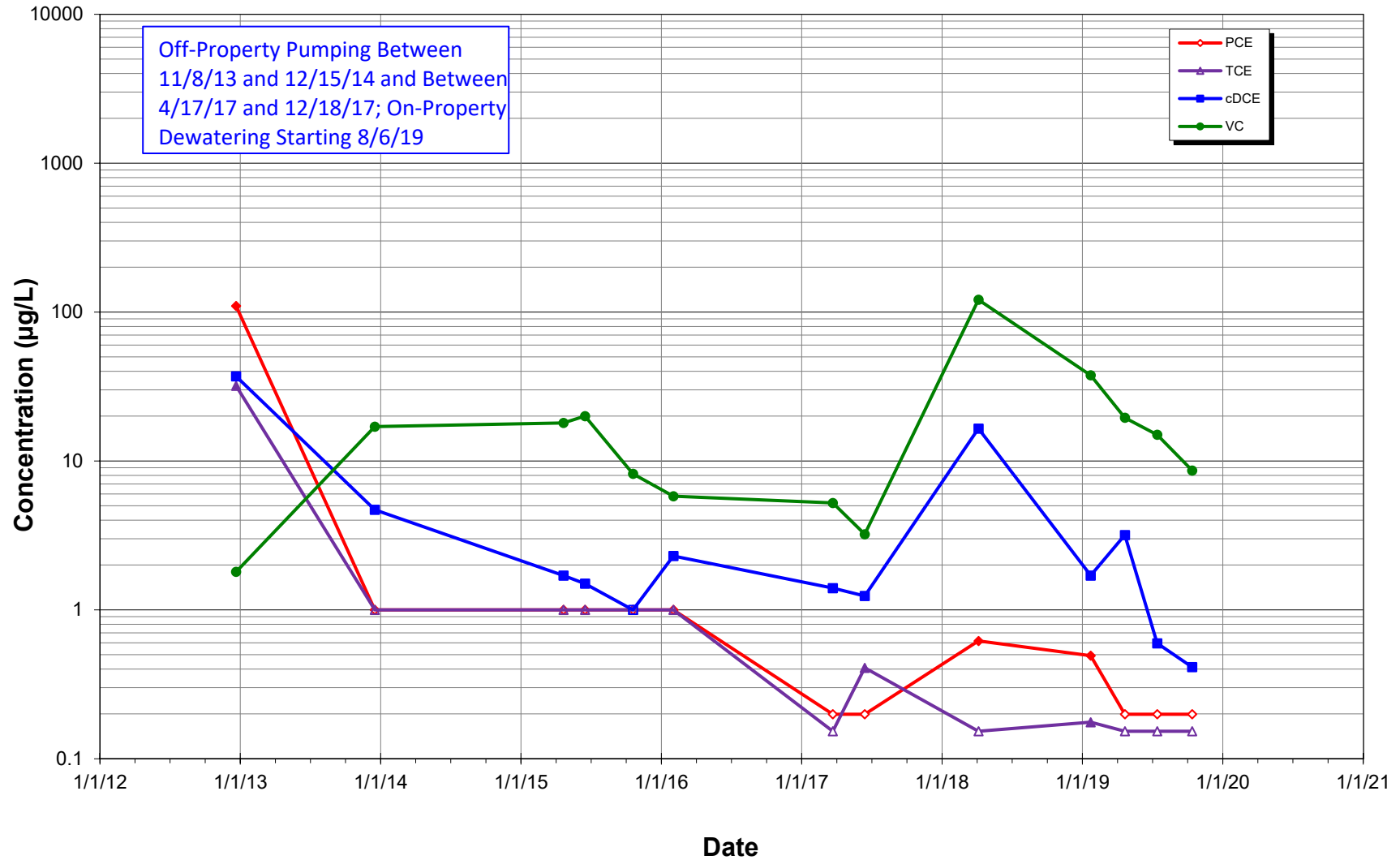
Concentration vs Time
MW110 (4.7 to -5.3 feet NAVD), Alley Between 8th and 9th
American Linen Supply Co–Dexter Ave Site



Off-Property Pumping Between 11/8/13 and 12/15/14 and Between 4/17/17 and 12/18/17; On-Property Dewatering Starting 8/6/19

- Notes:
- 1) All results detected below the laboratory MDLs are shown as hollow data points .
 - 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

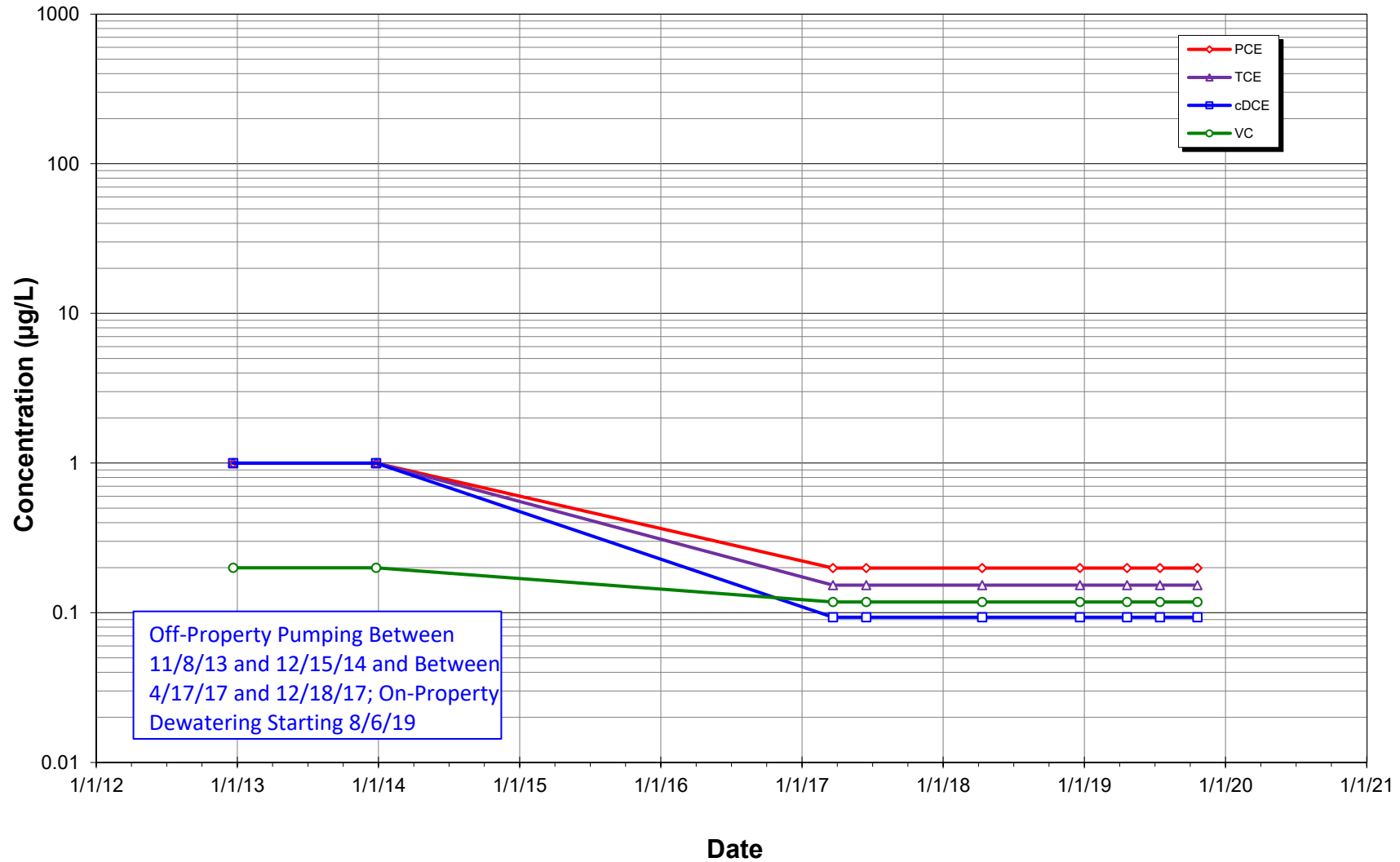
Concentration vs Time
MW111 (-33.5 to -43.5 feet NAVD), Alley Between 8th and 9th
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

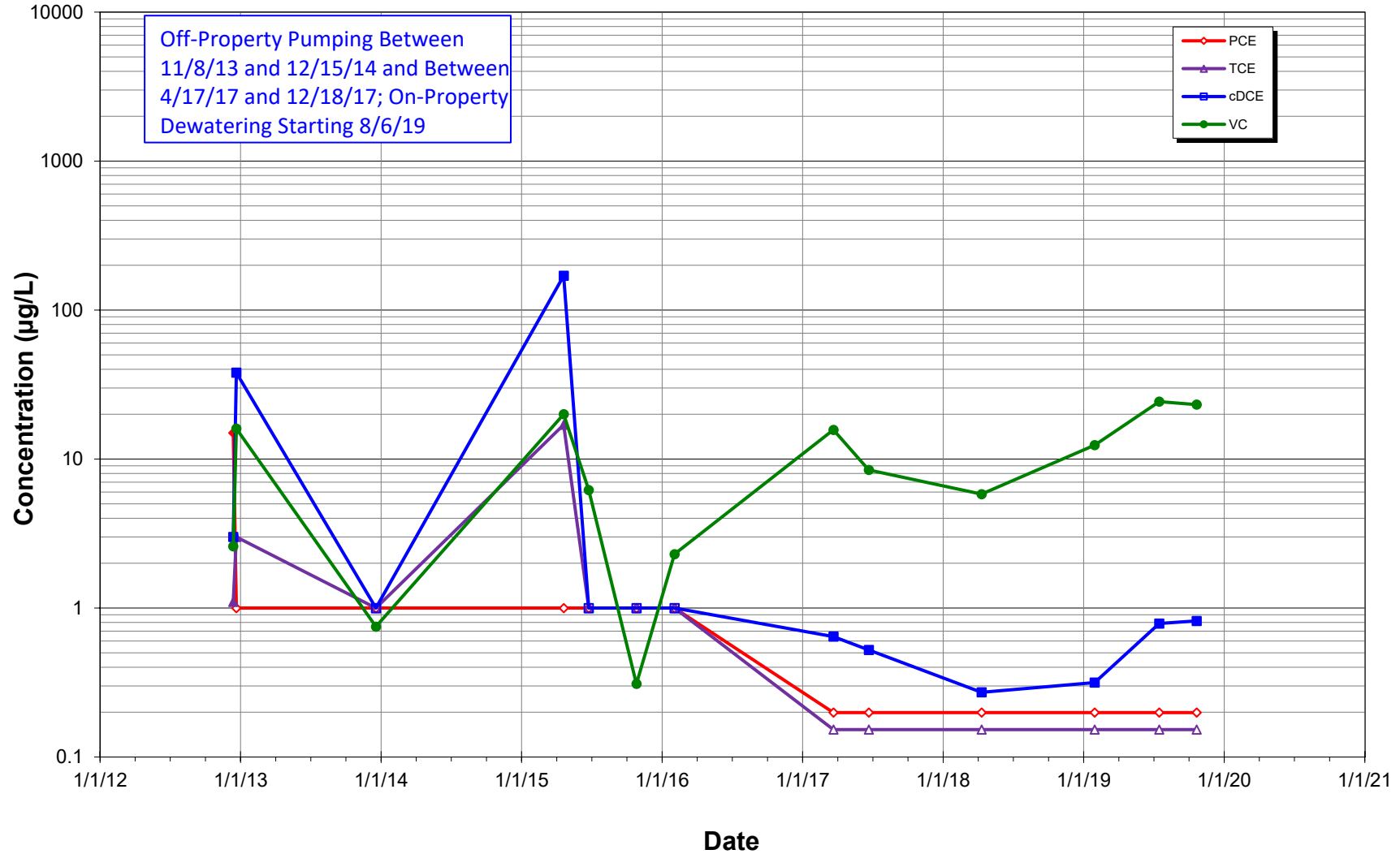
Concentration vs Time MW112 (-17.3 to -27.3 feet NAVD), Dexter Avenue American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

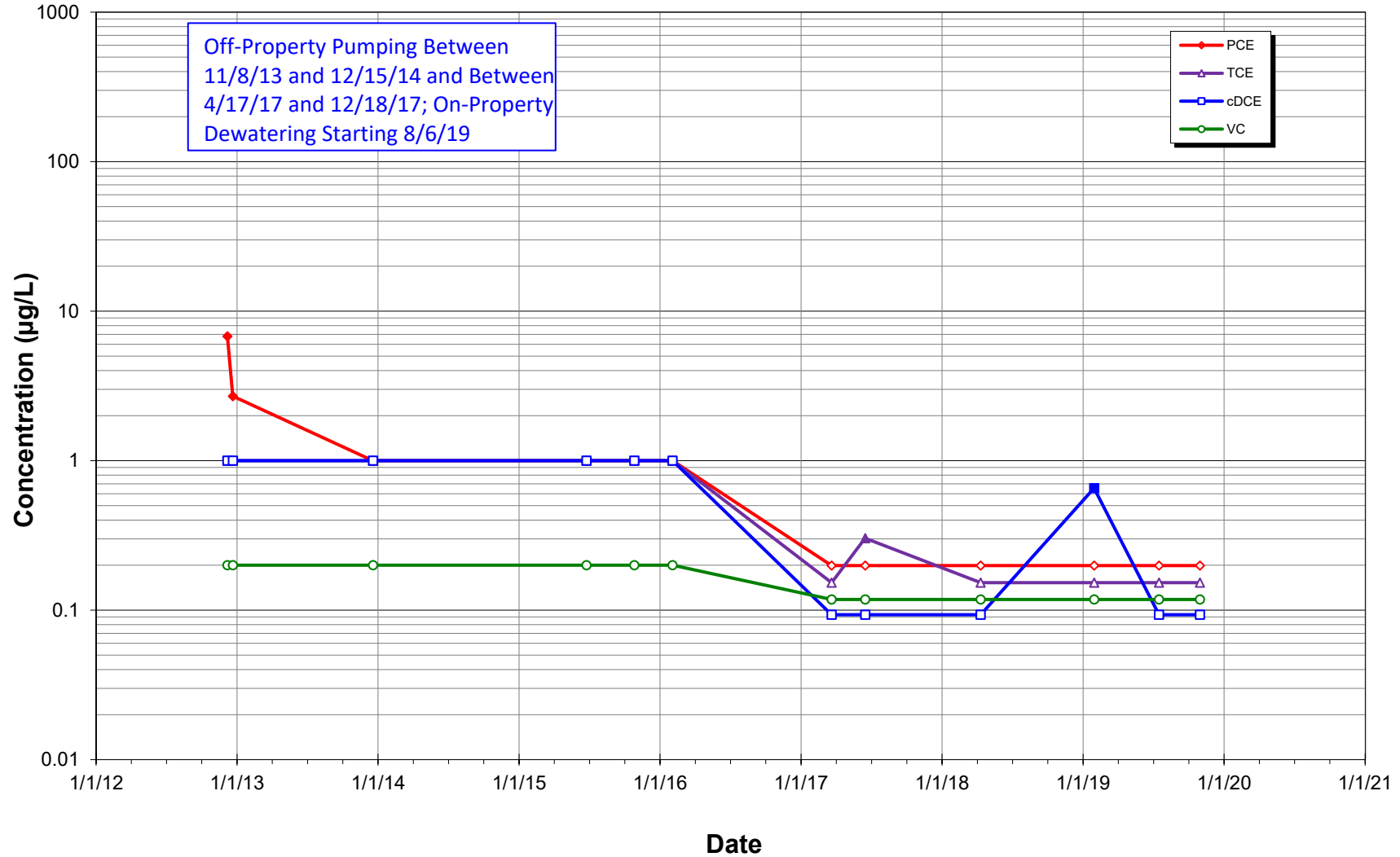
Concentration vs Time
MW115 (-0.6 to -10.6 feet NAVD), 9th Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

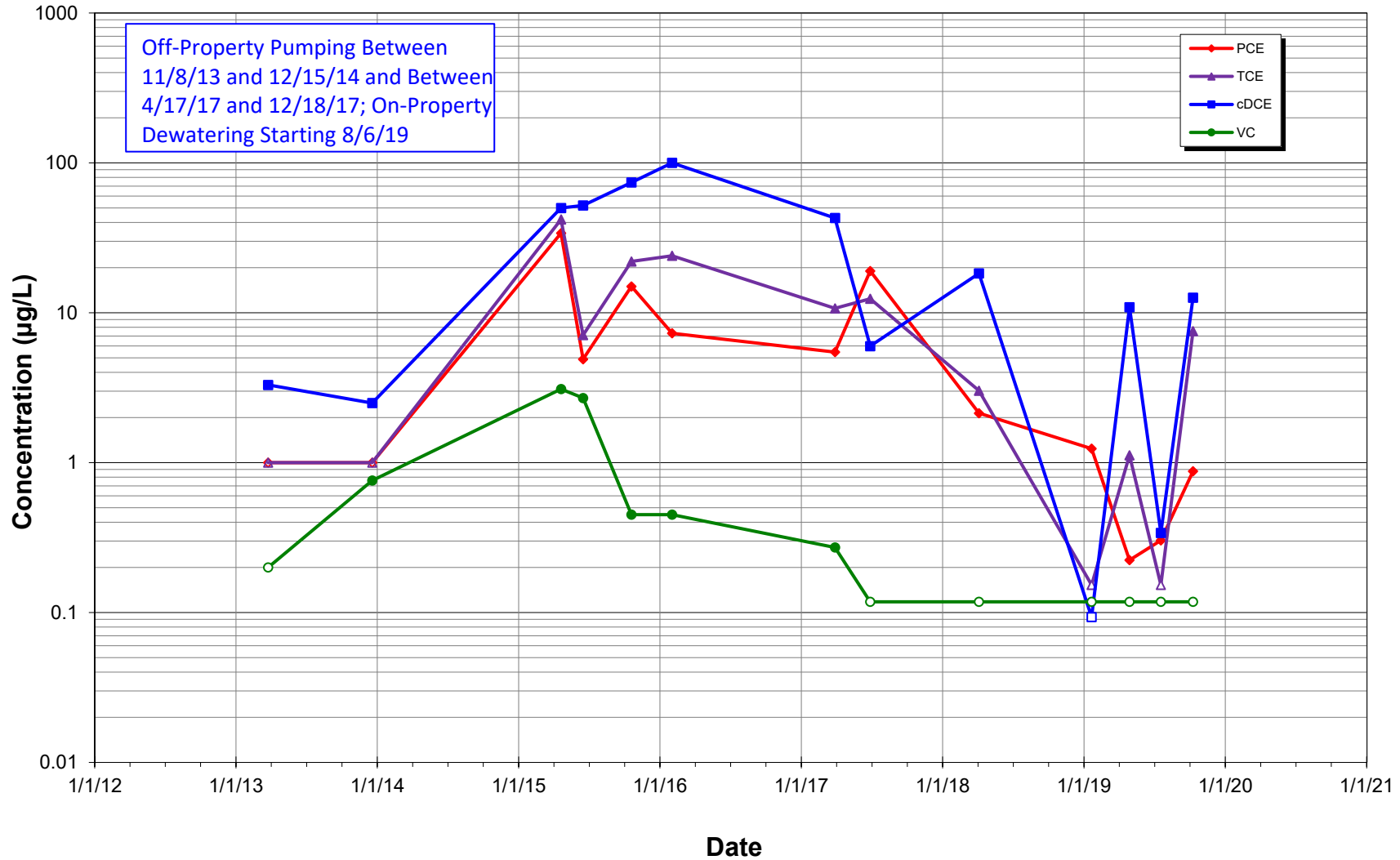
Concentration vs Time
MW116 (-3.1 to -13.1 feet NAVD), 9th Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

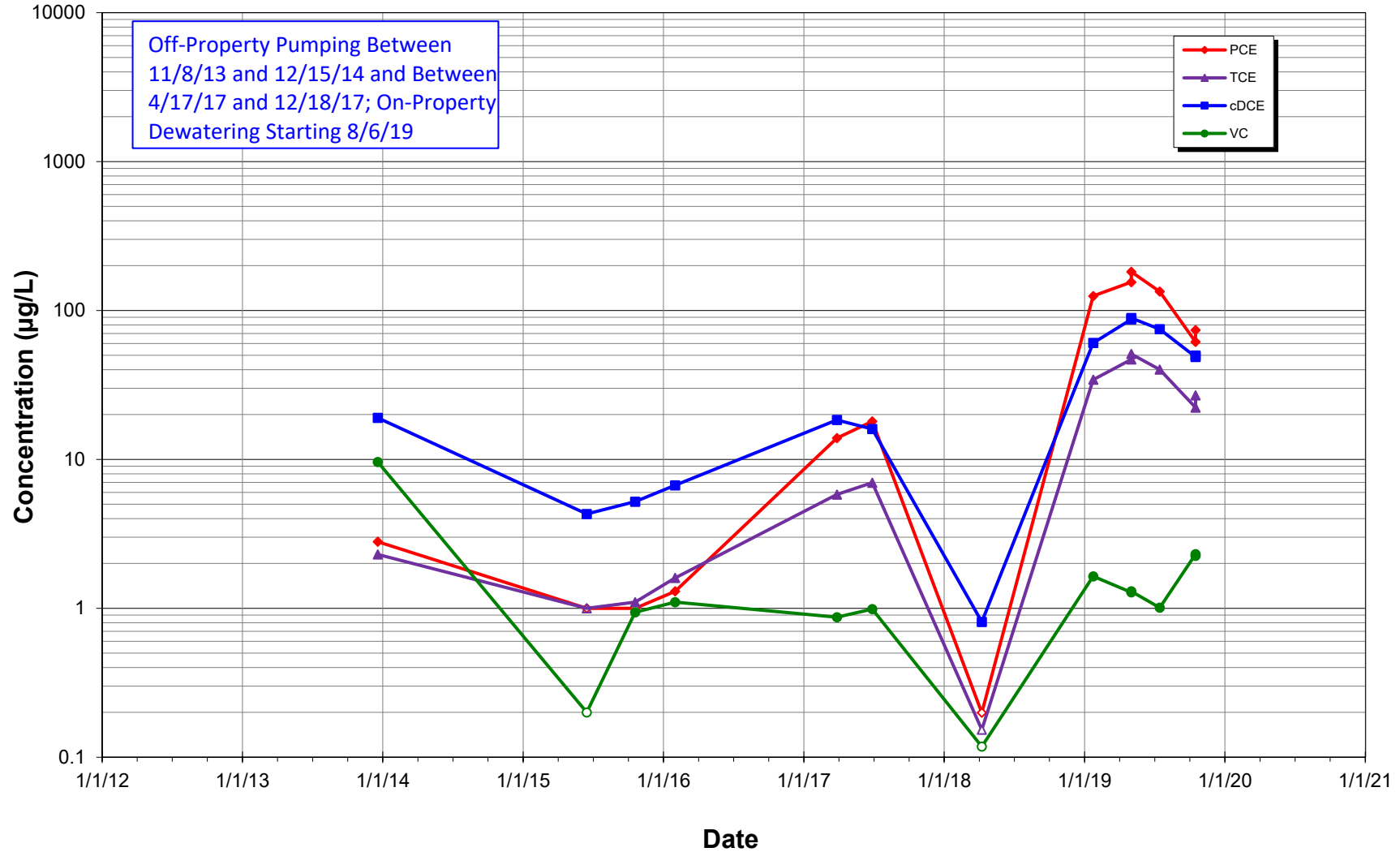
Concentration vs Time
MW119 (2.7 to -7.3 feet NAVD), 9th Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

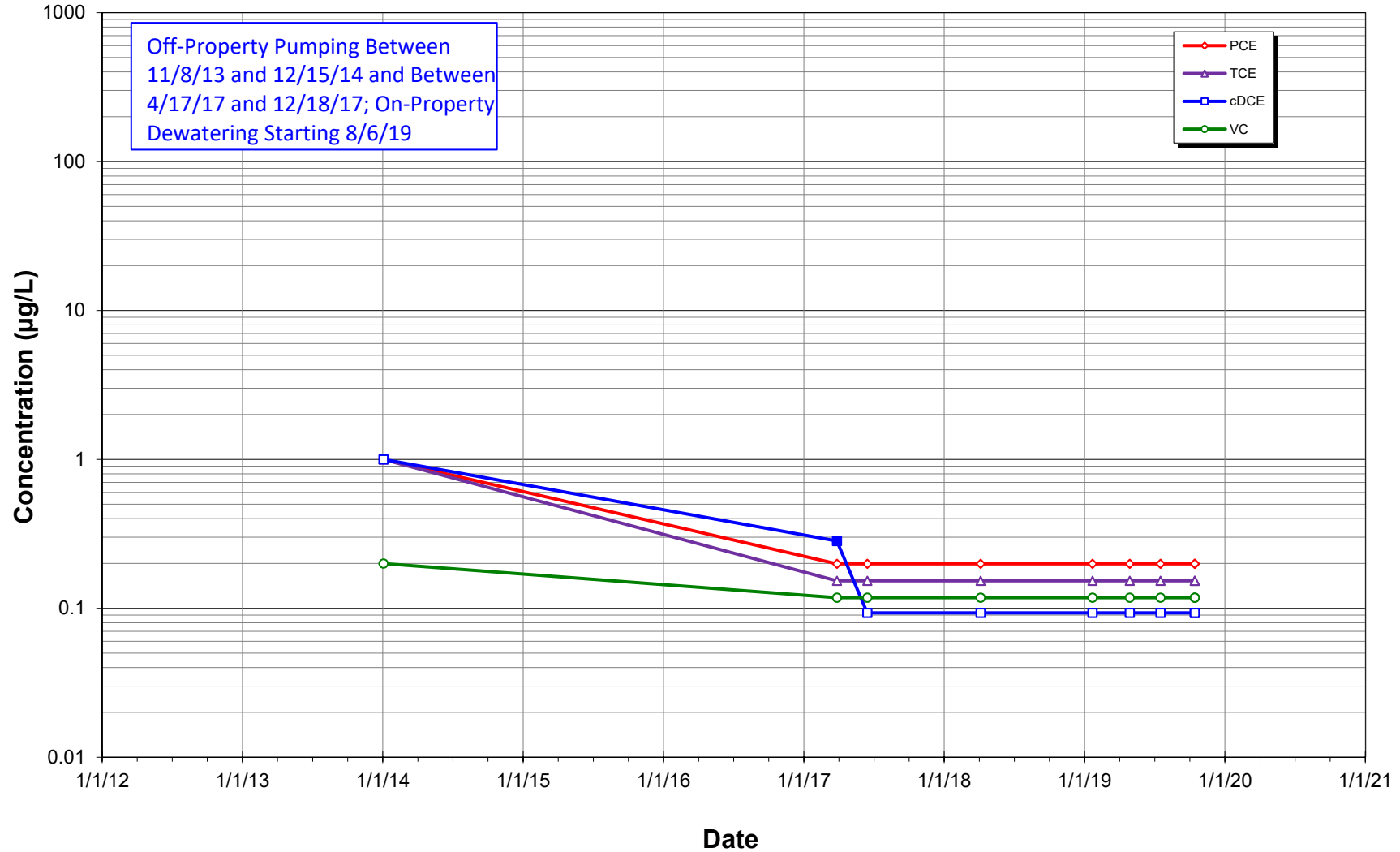
Concentration vs Time
MW120 (0.0 to -10.0 feet NAVD), 8th Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

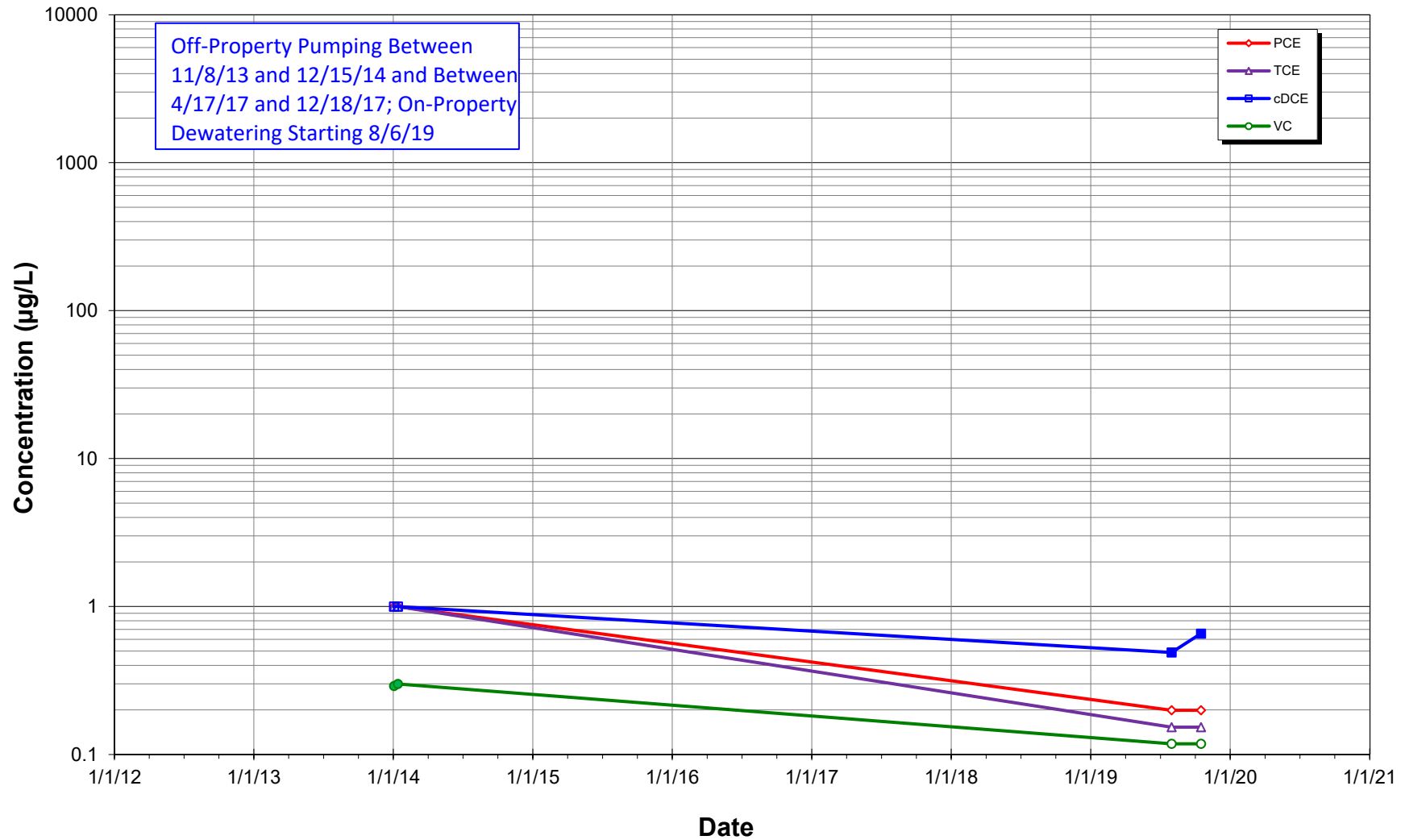
Concentration vs Time
MW126 (-54.1 to -64.1 feet NAVD), Alley Between 8th and 9th
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

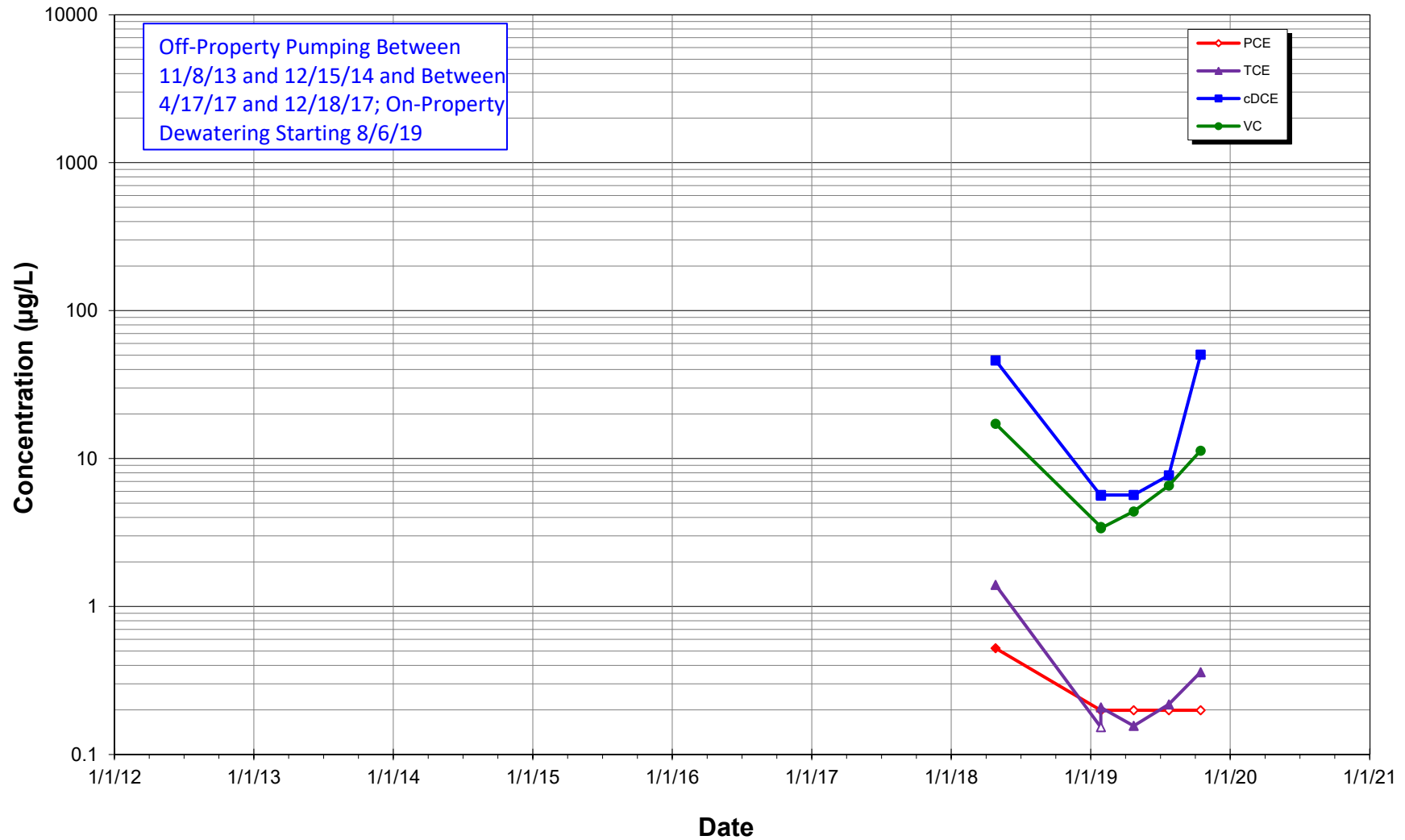
Concentration vs Time
MW127 (-1.0 to -11.0 feet NAVD), 8th Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

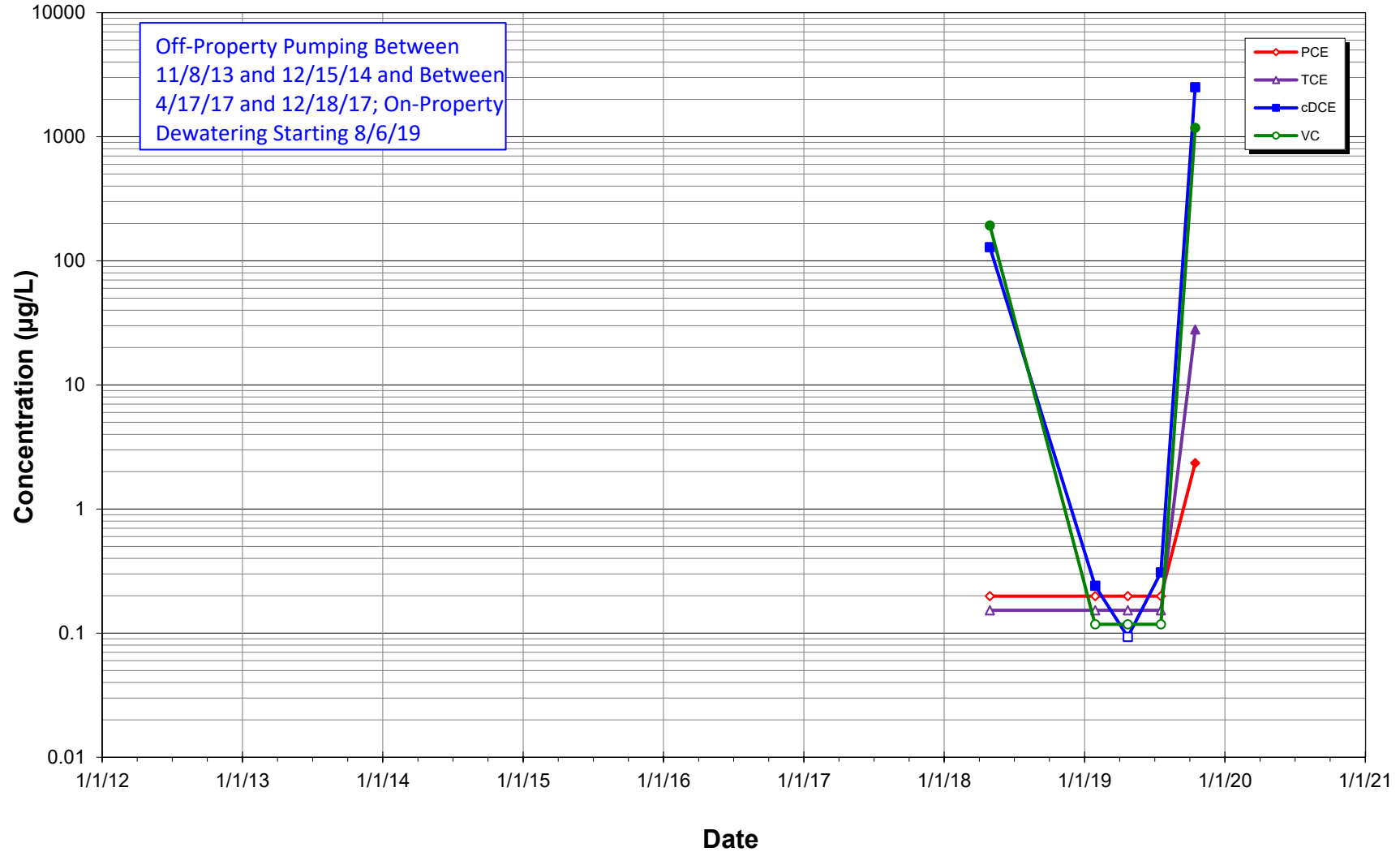
- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

Concentration vs Time
MW-142 (2.4 to -7.6 feet NAVD), 8th Avenue North
American Linen Supply Co–Dexter Ave Site



- Notes:**
- 1) All results detected below the laboratory MDLs are shown as hollow data points .
 - 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

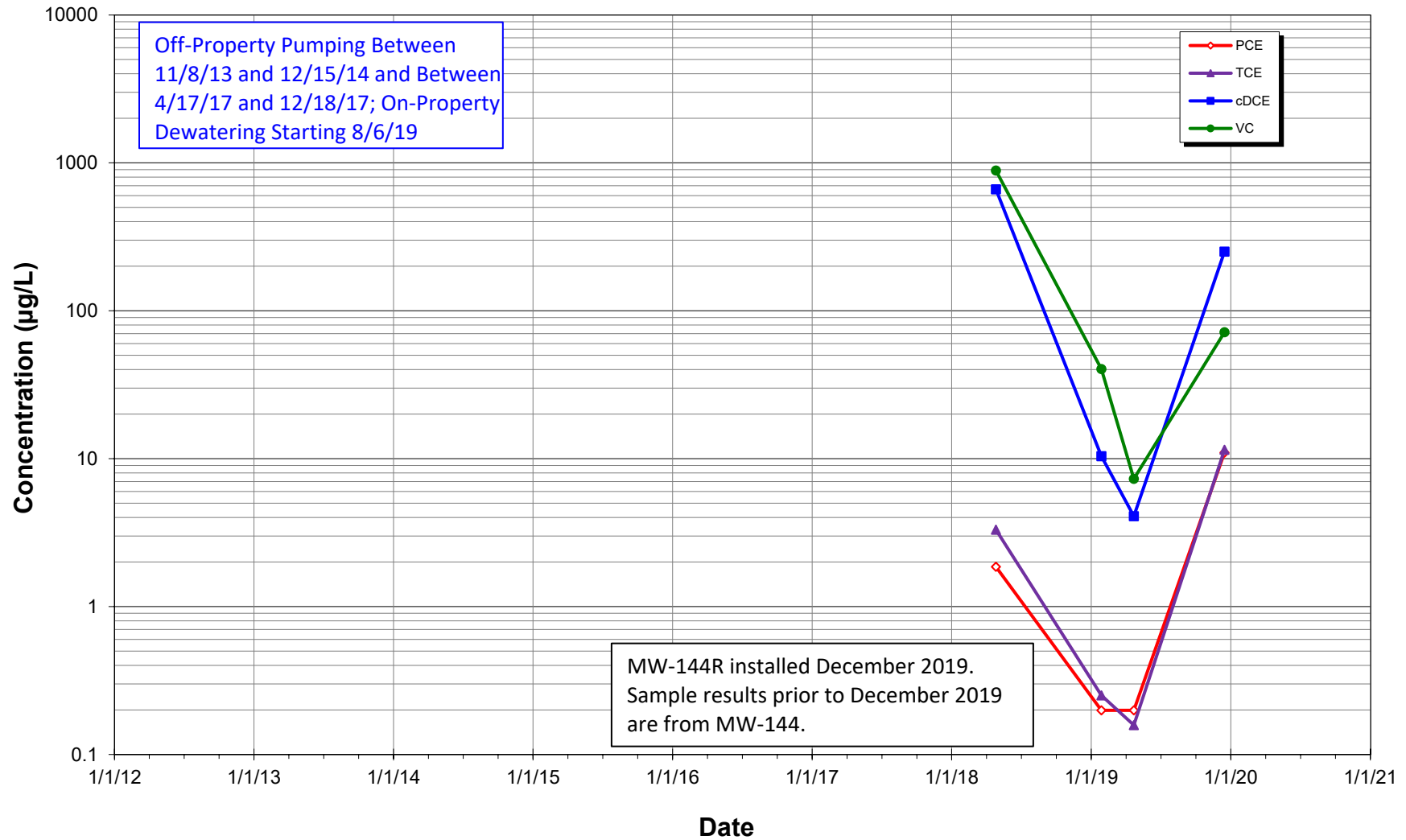
Concentration vs Time
MW-143 (-27.7 to -37.6 feet NAVD), 8th Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

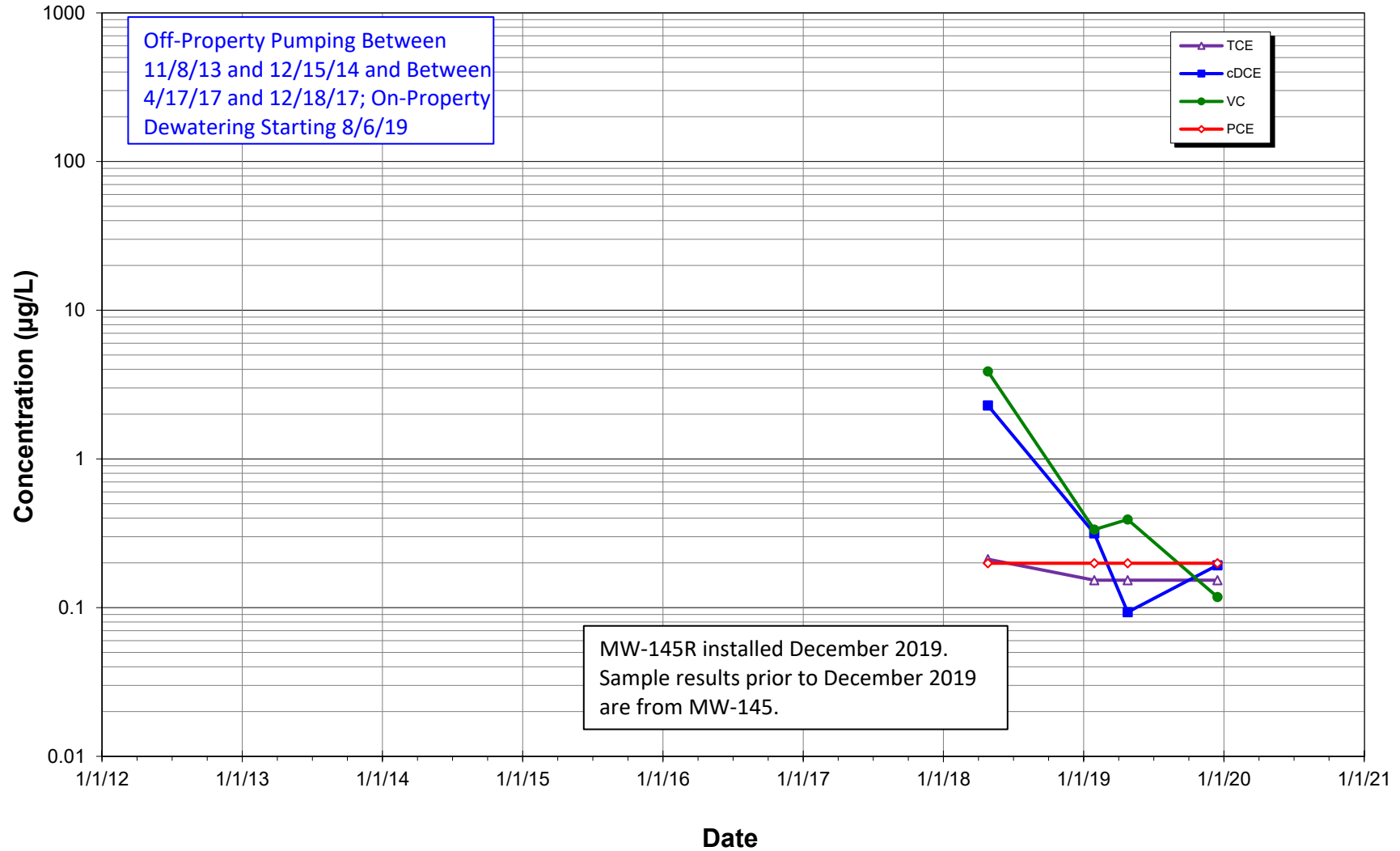
Concentration vs Time
MW-144R (2.8 to -7.3) feet NAVD), 8th Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

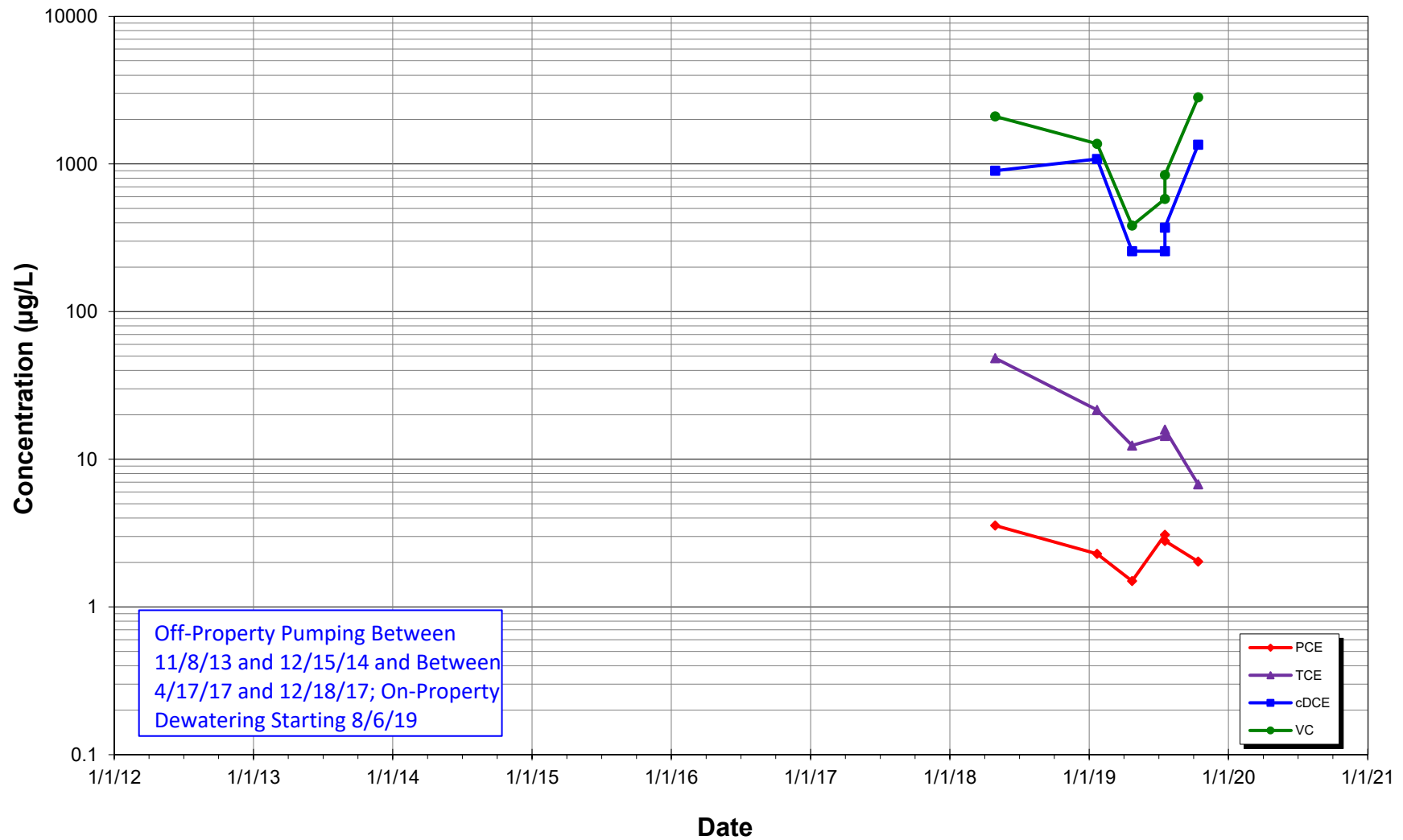
Concentration vs Time
MW-145R (-27.5 to -37.5 feet NAVD), 8th Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

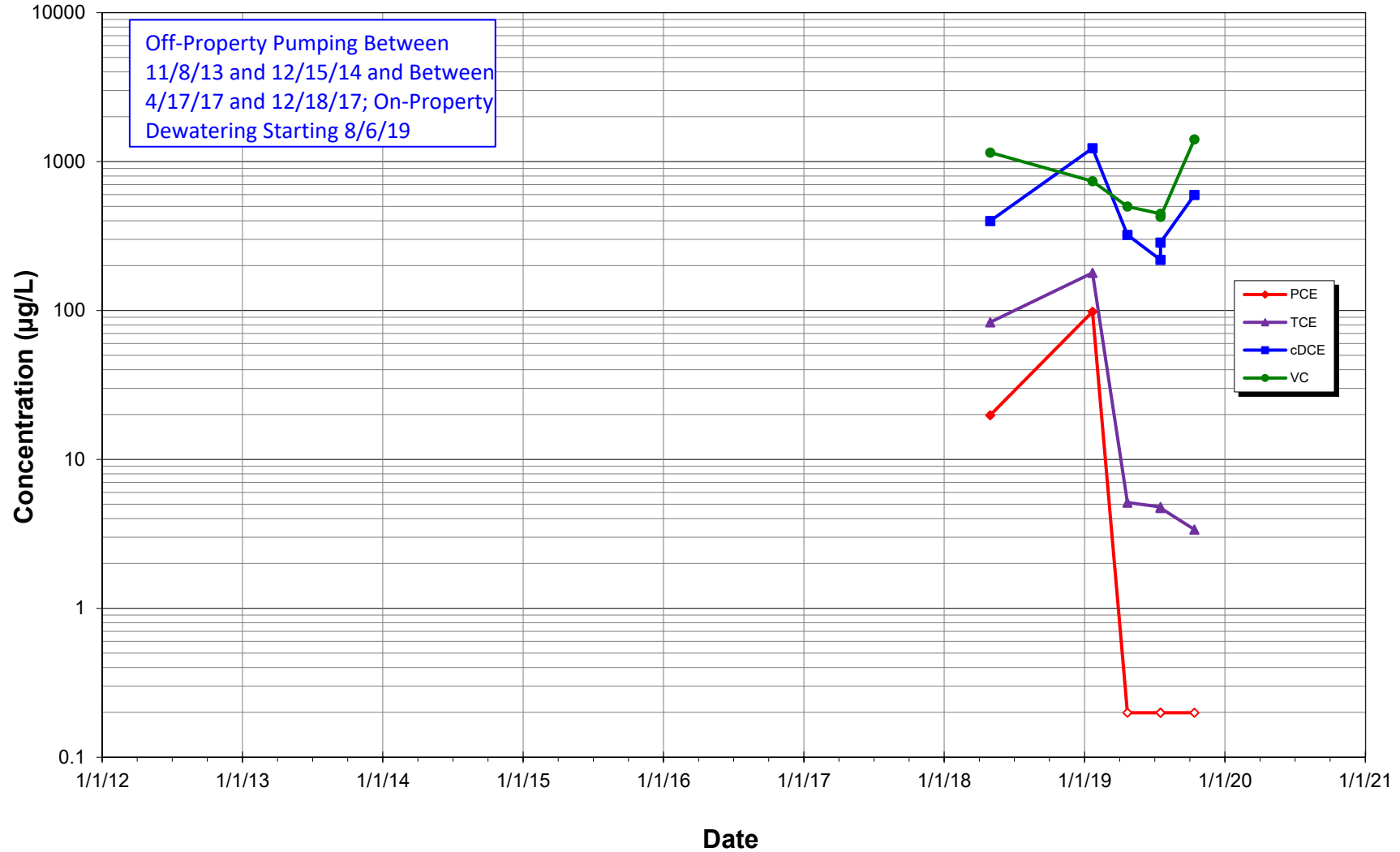
Concentration vs Time
MW-146 (12.9 to 2.9 feet NAVD), Roy Street
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

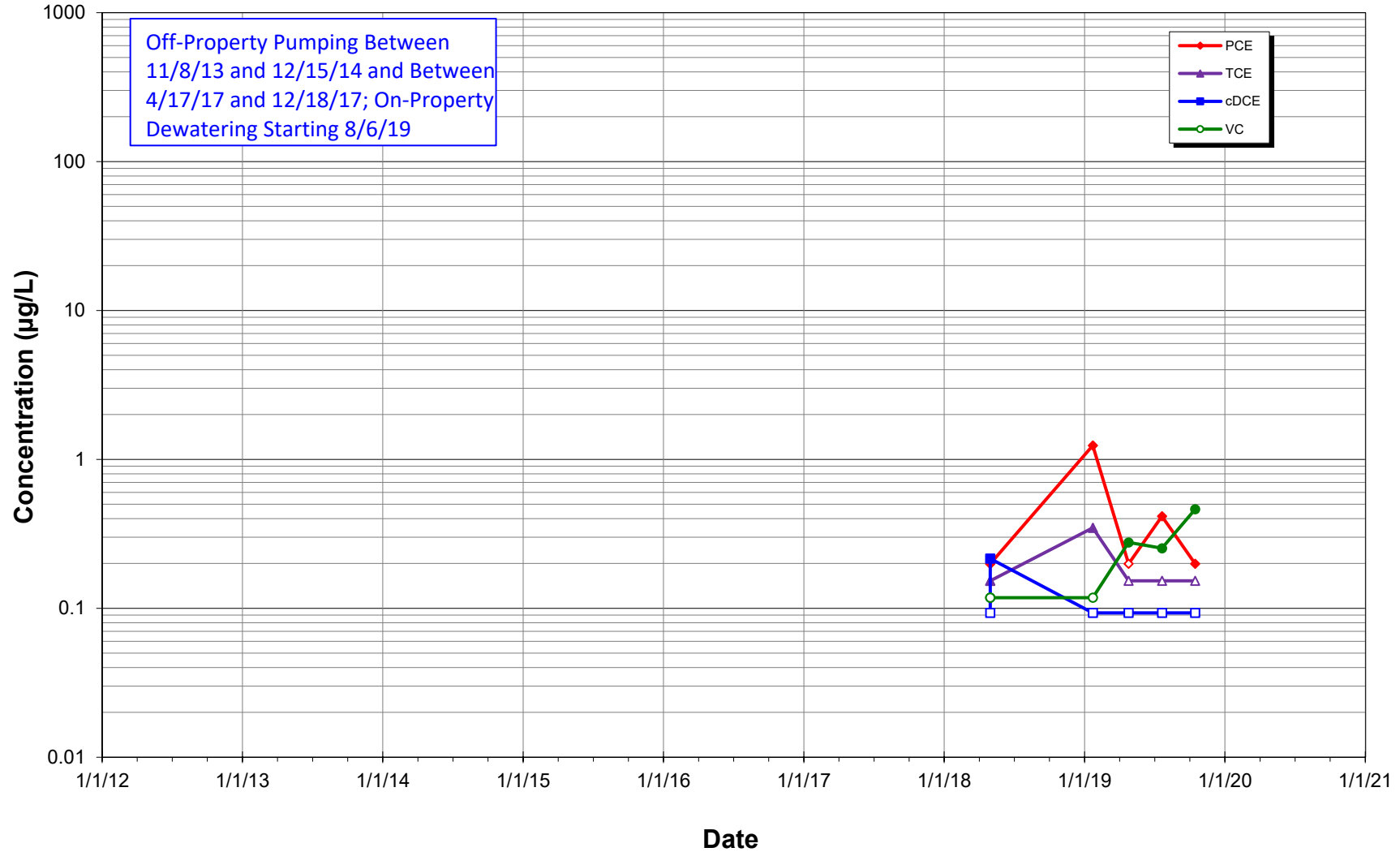
Concentration vs Time
MW-147 (-17.6 to -27.6 feet NAVD), Roy Street
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

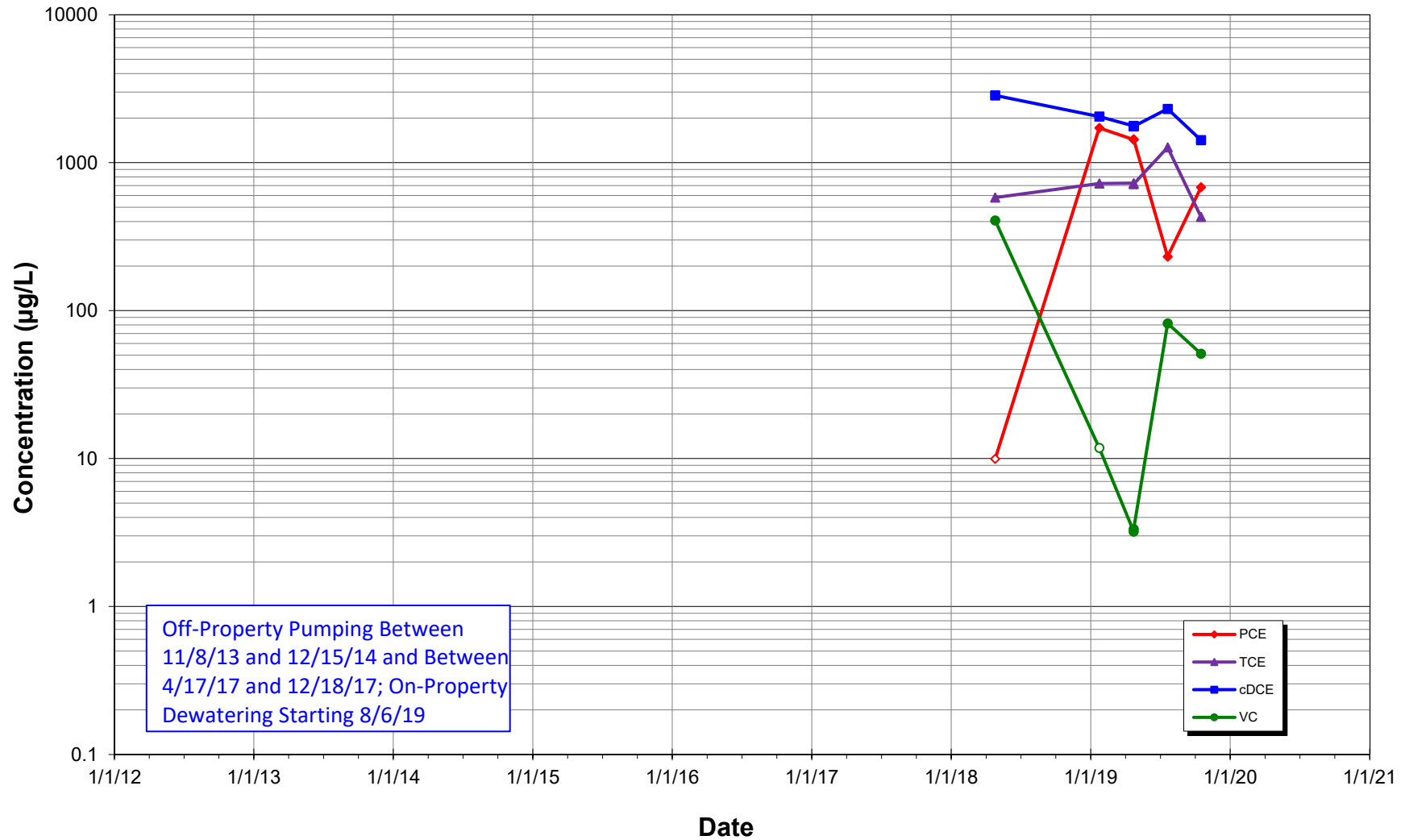
Concentration vs Time
MW-148 (-25.7 to -35.7 feet NAVD), Roy Street
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

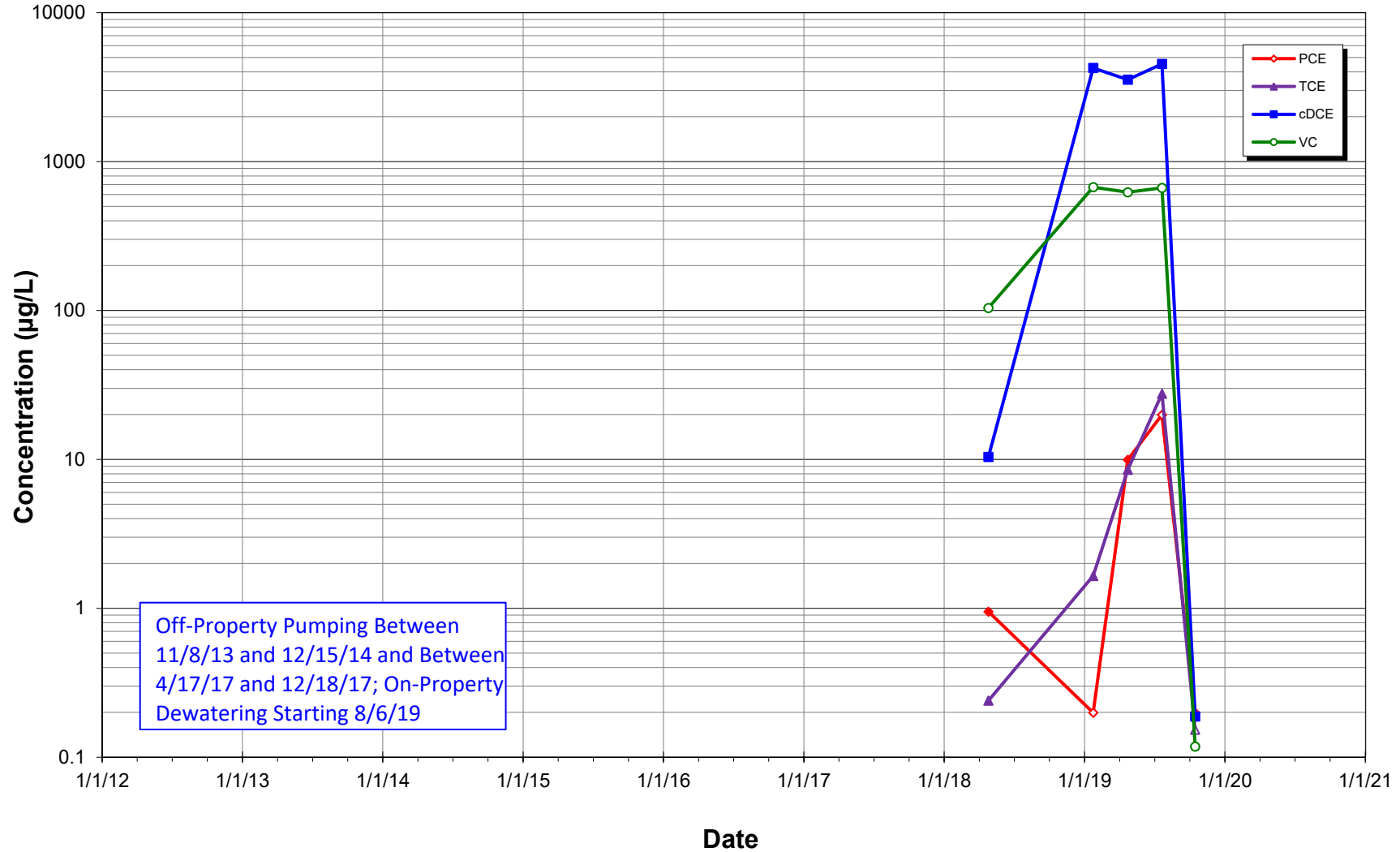
Concentration vs Time
MW-156 (2.0 to -8.0 feet NAVD), 8th Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

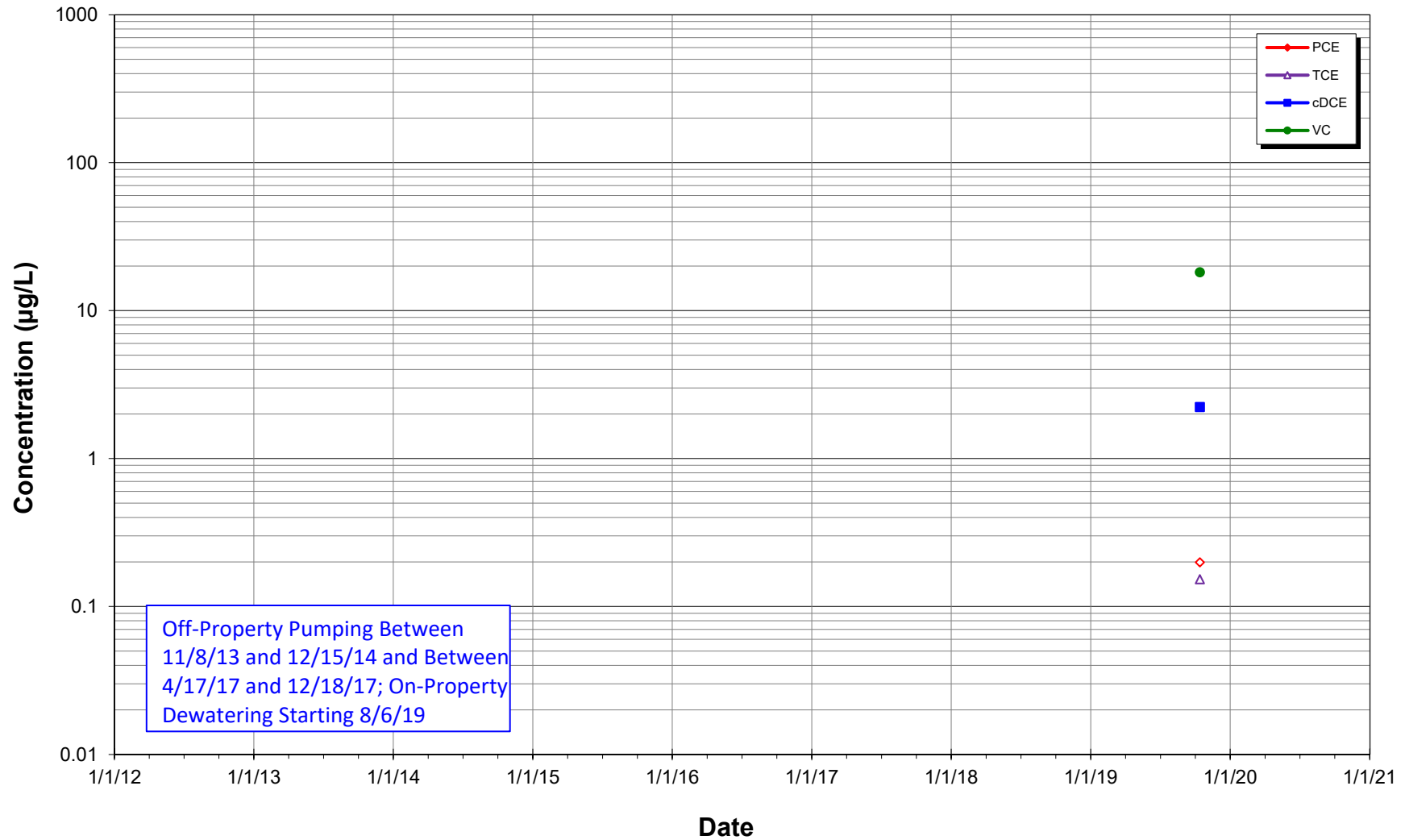
- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

Concentration vs Time
MW-157 (-28.3 to -38.2 feet NAVD), 8th Avenue North
American Linen Supply Co–Dexter Ave Site



- Notes:**
- 1) All results detected below the laboratory MDLs are shown as hollow data points .
 - 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

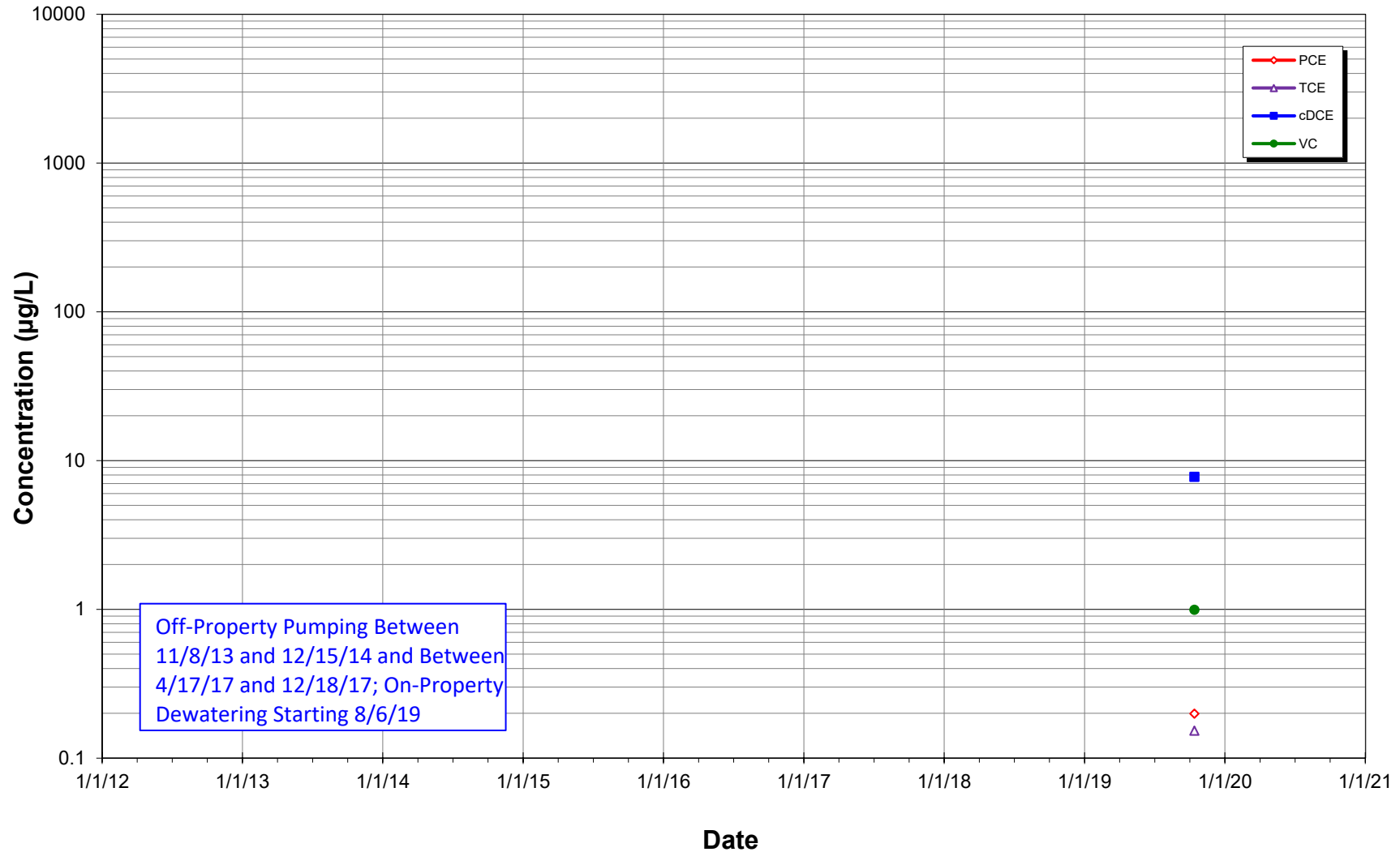
Concentration vs Time
MW-189 (-1.2 to -11.2 feet NAVD), Valley Street
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

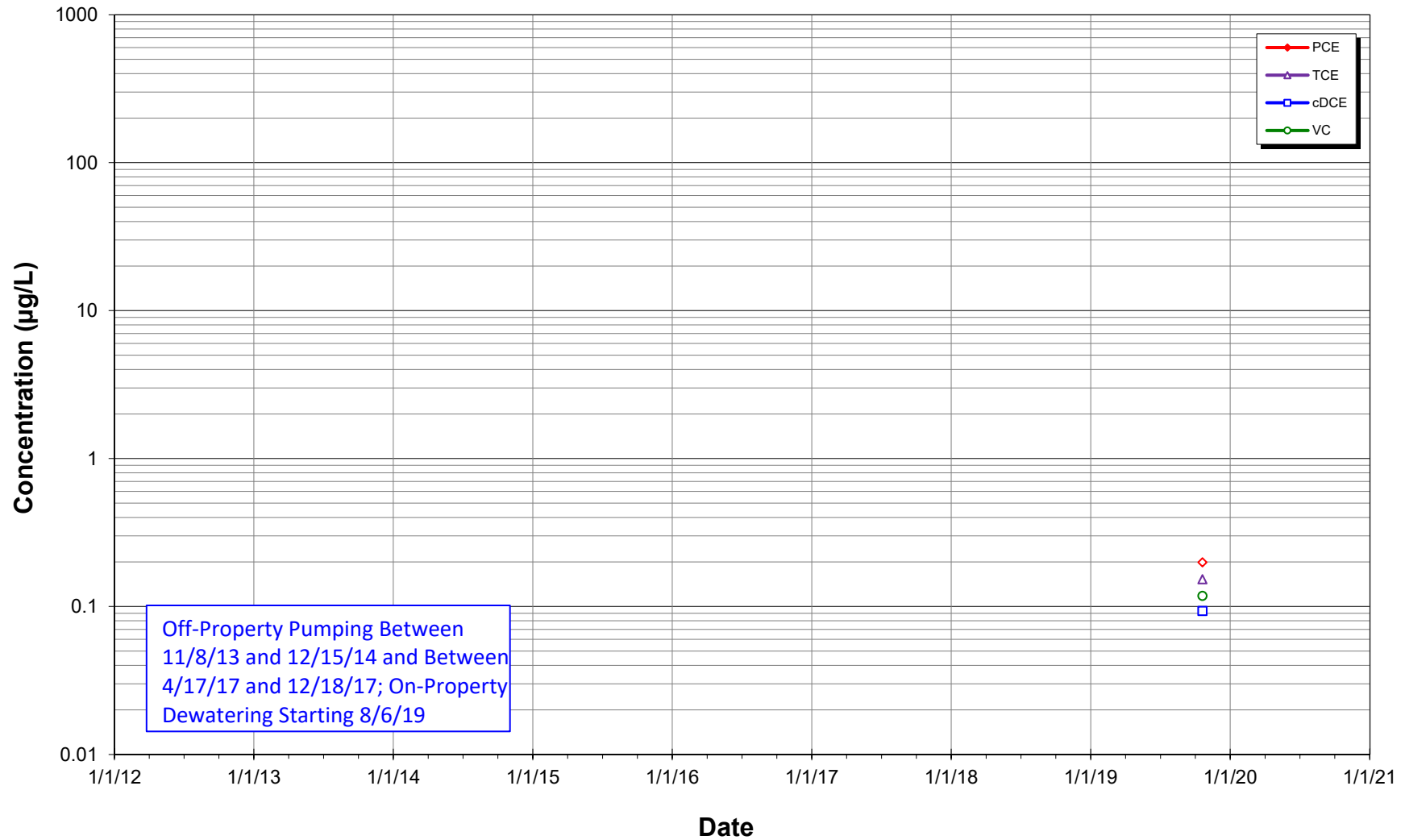
Concentration vs Time
MW-190 (-30.2 to -40.2 feet NAVD), Valley Street
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

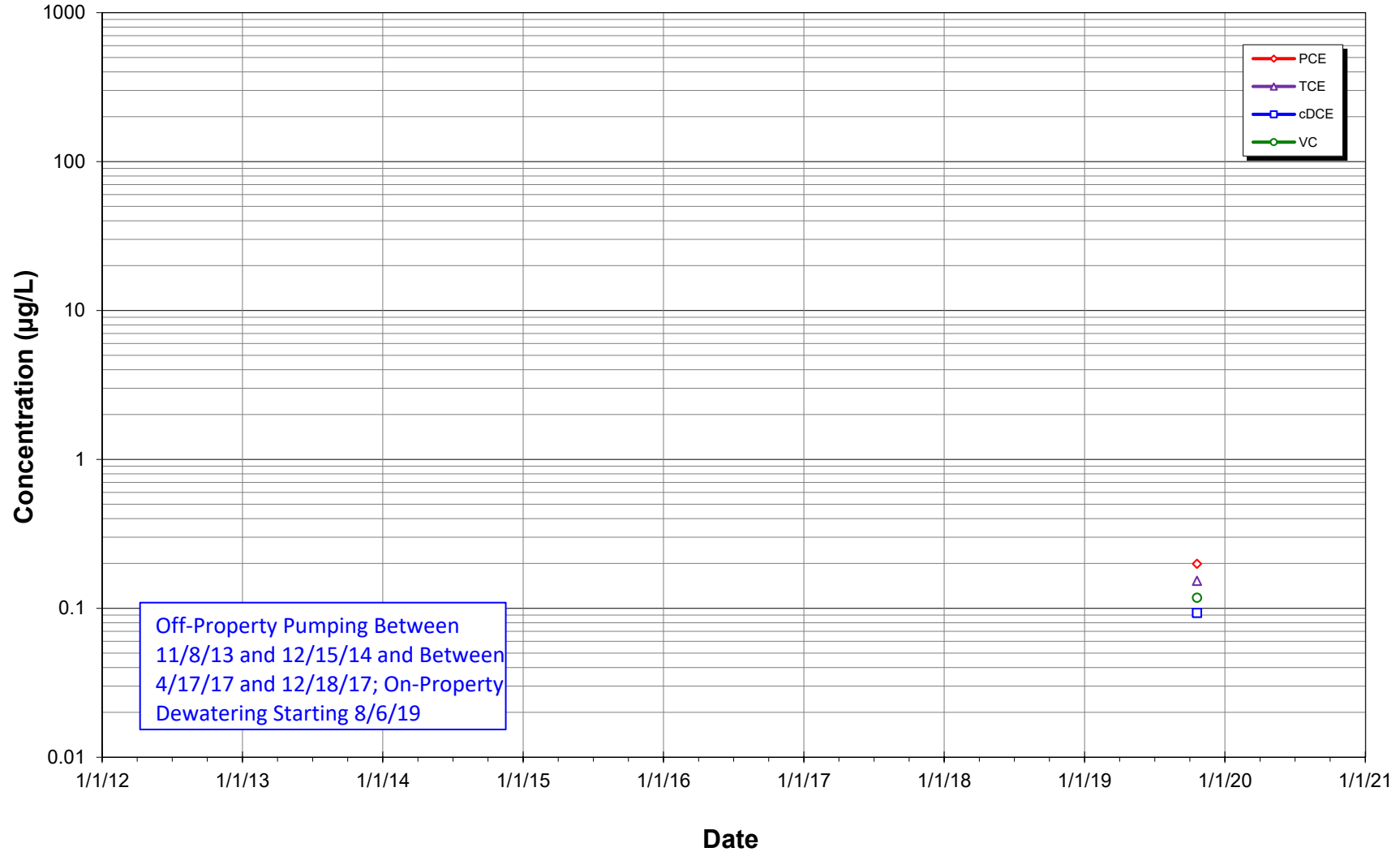
Concentration vs Time
MW-302 (2.0 to -8.0 feet NAVD), Dexter Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

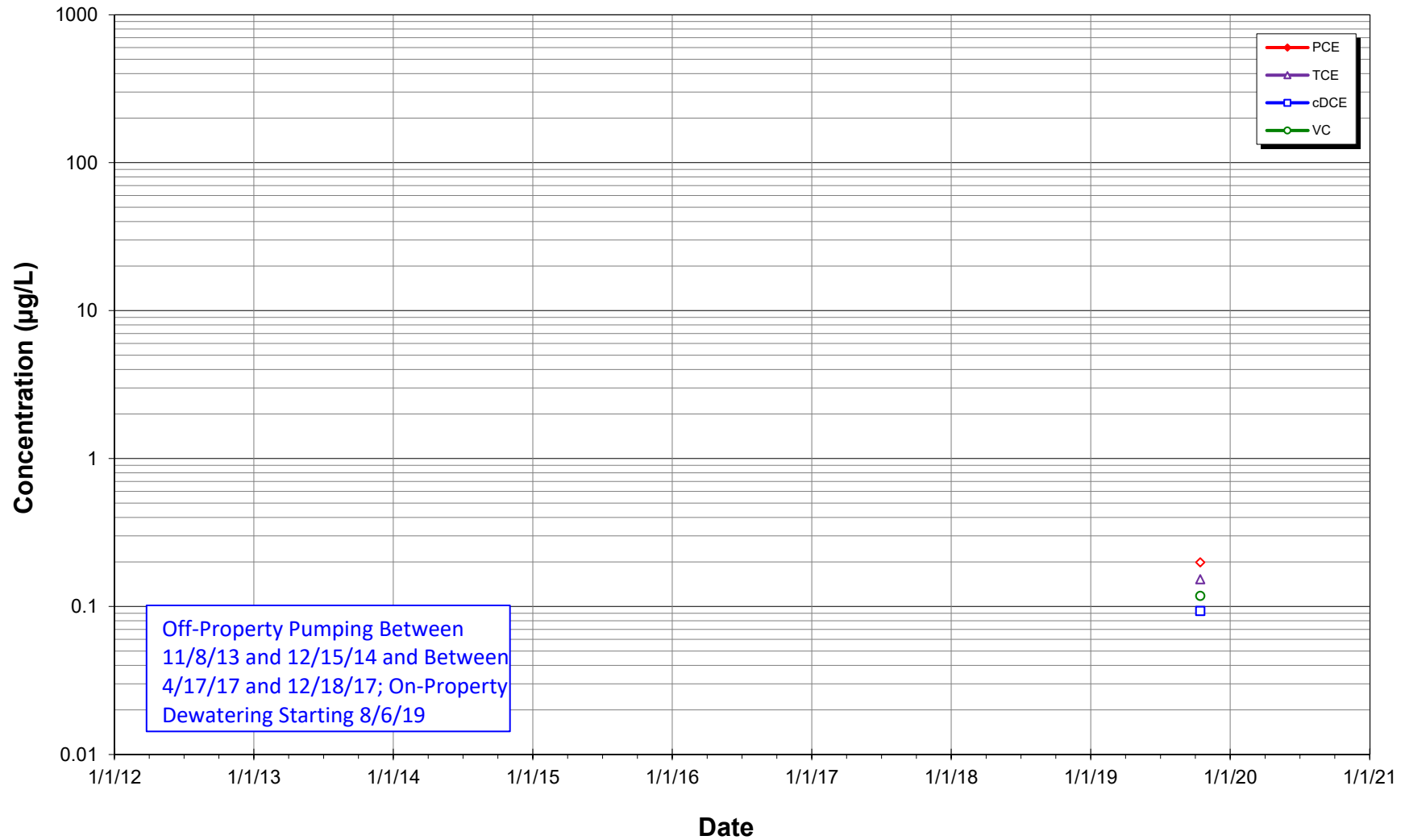
Concentration vs Time
MW-303 (-13.8 to -23.8 feet NAVD), Dexter Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

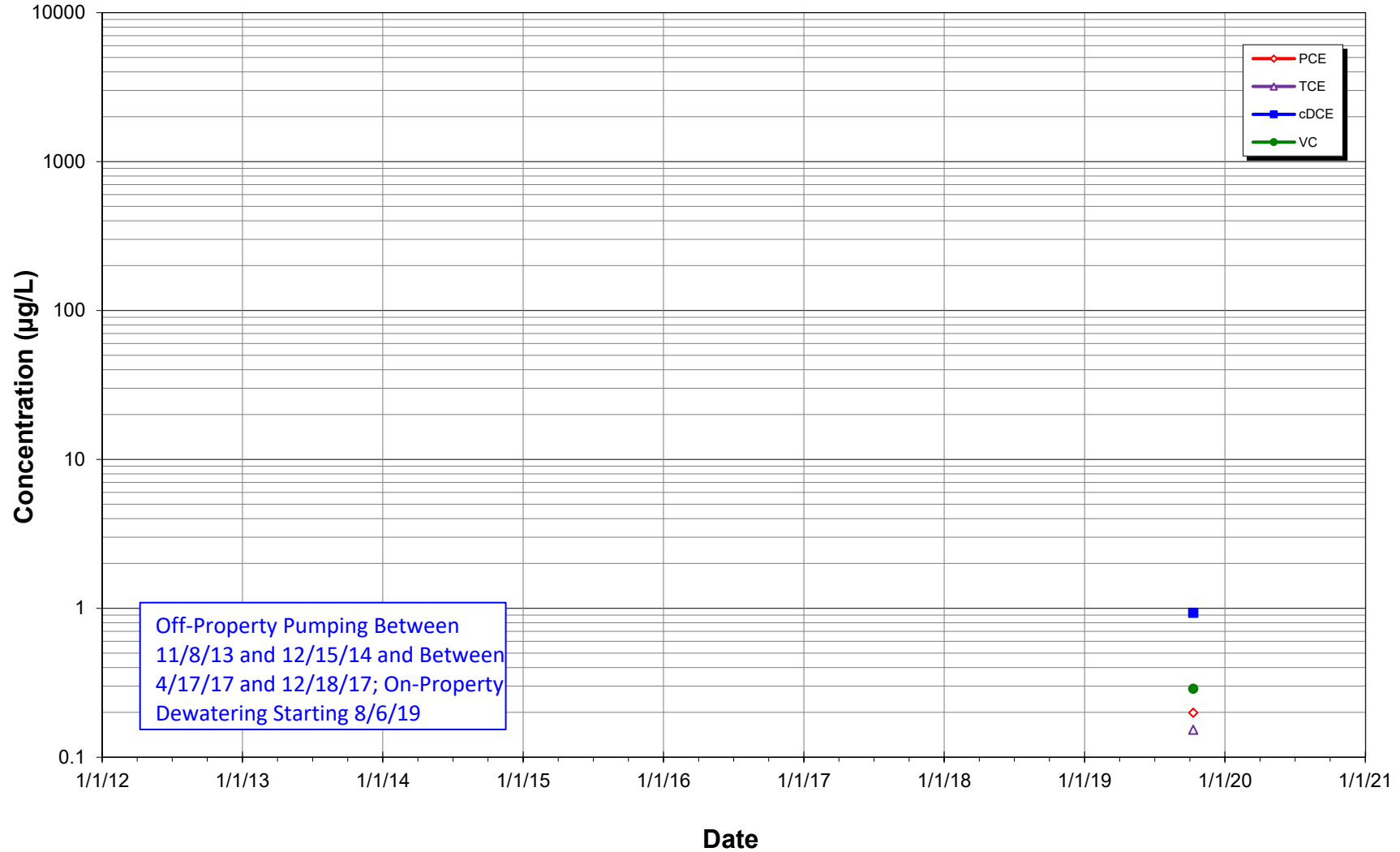
Concentration vs Time
MW-306 (17.2 to 7.2 feet NAVD), Dexter Ave
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

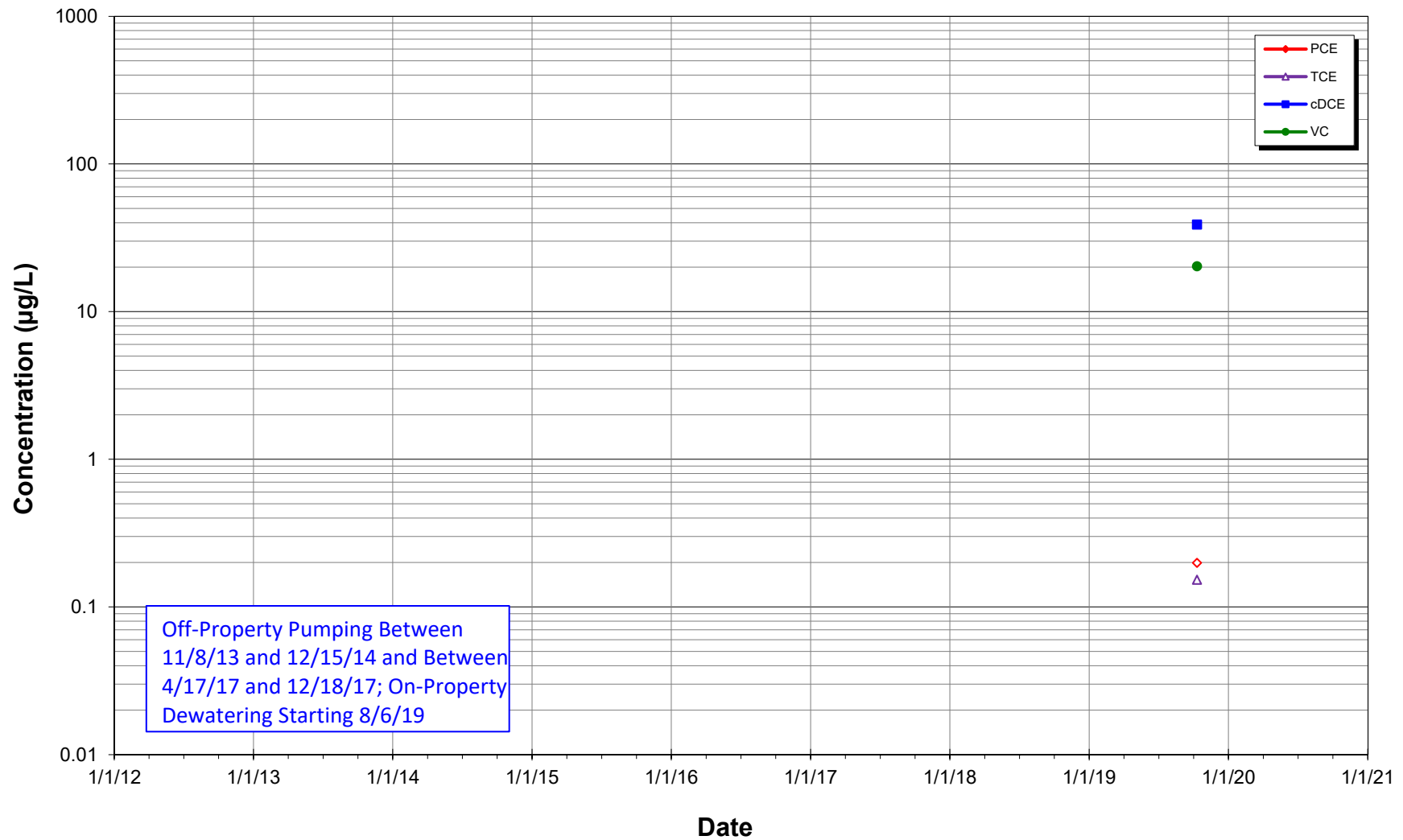
Concentration vs Time
MW-307 (-12.4 to -22.4 feet NAVD), Dexter Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

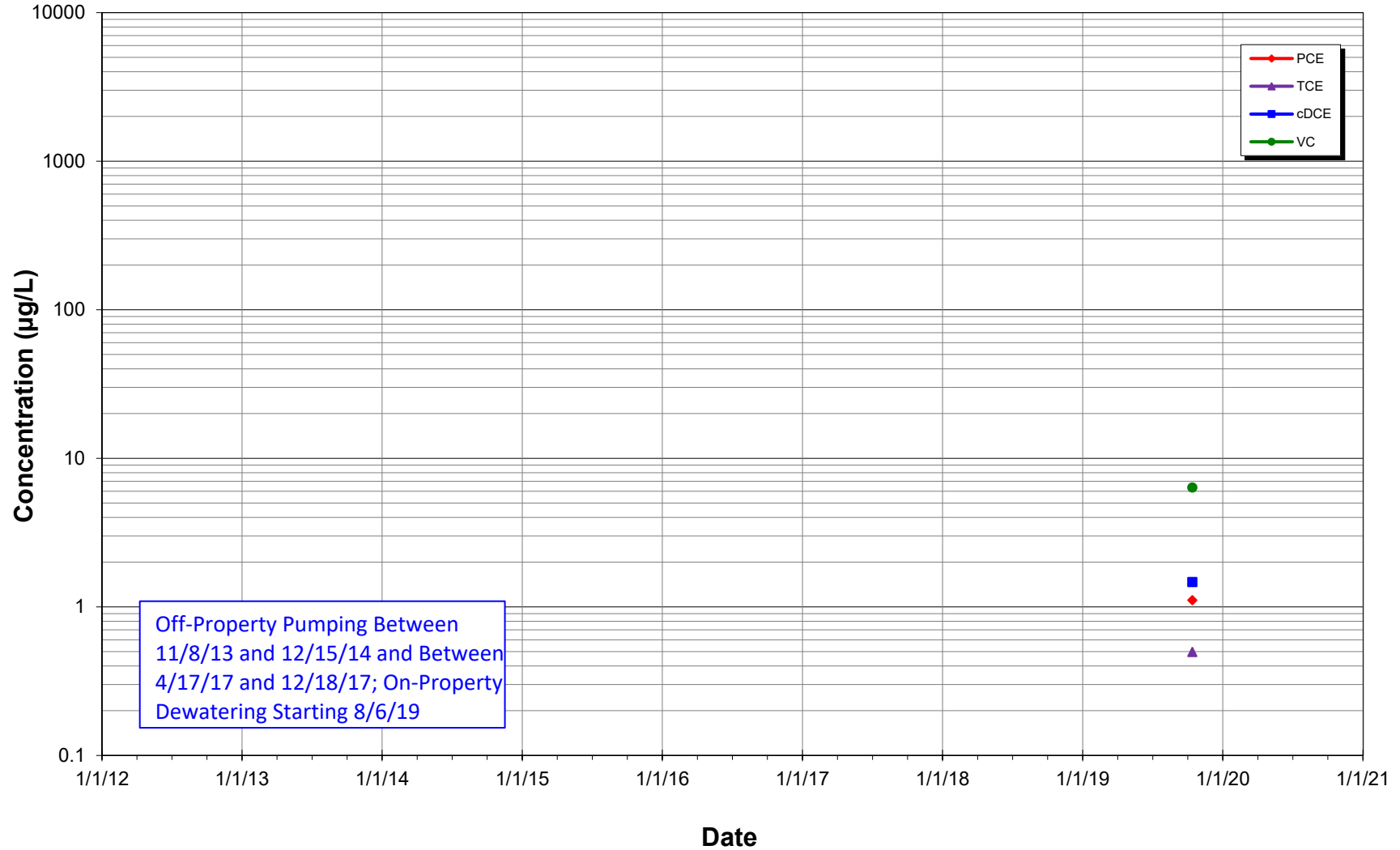
Concentration vs Time
MW-308 (-4.7 to -14.7 feet NAVD), Alley Between 8th and 9th
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

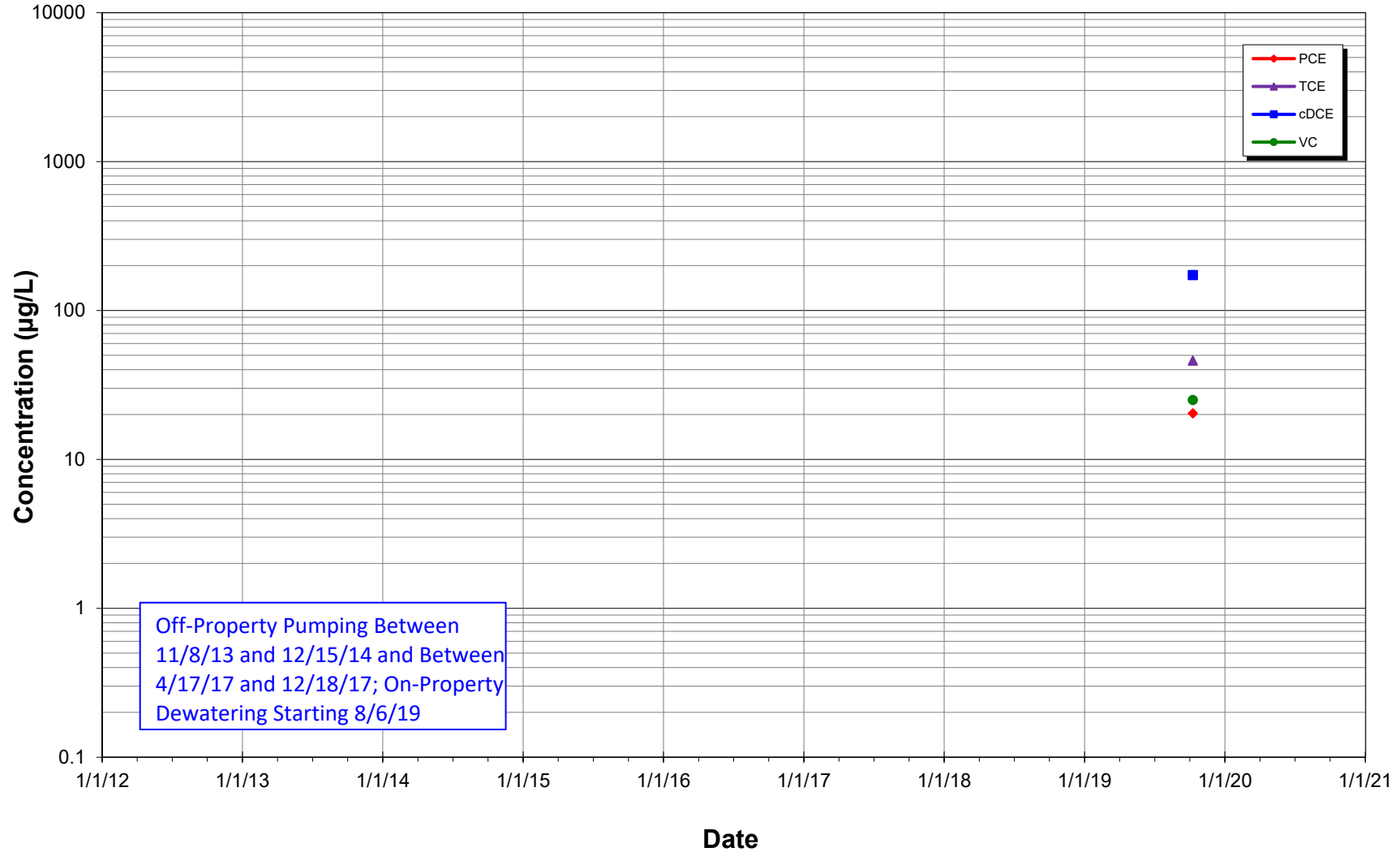
Concentration vs Time
MW-309 (-32.0 to -42.0 feet NAVD), Alley Between 8th and 9th
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

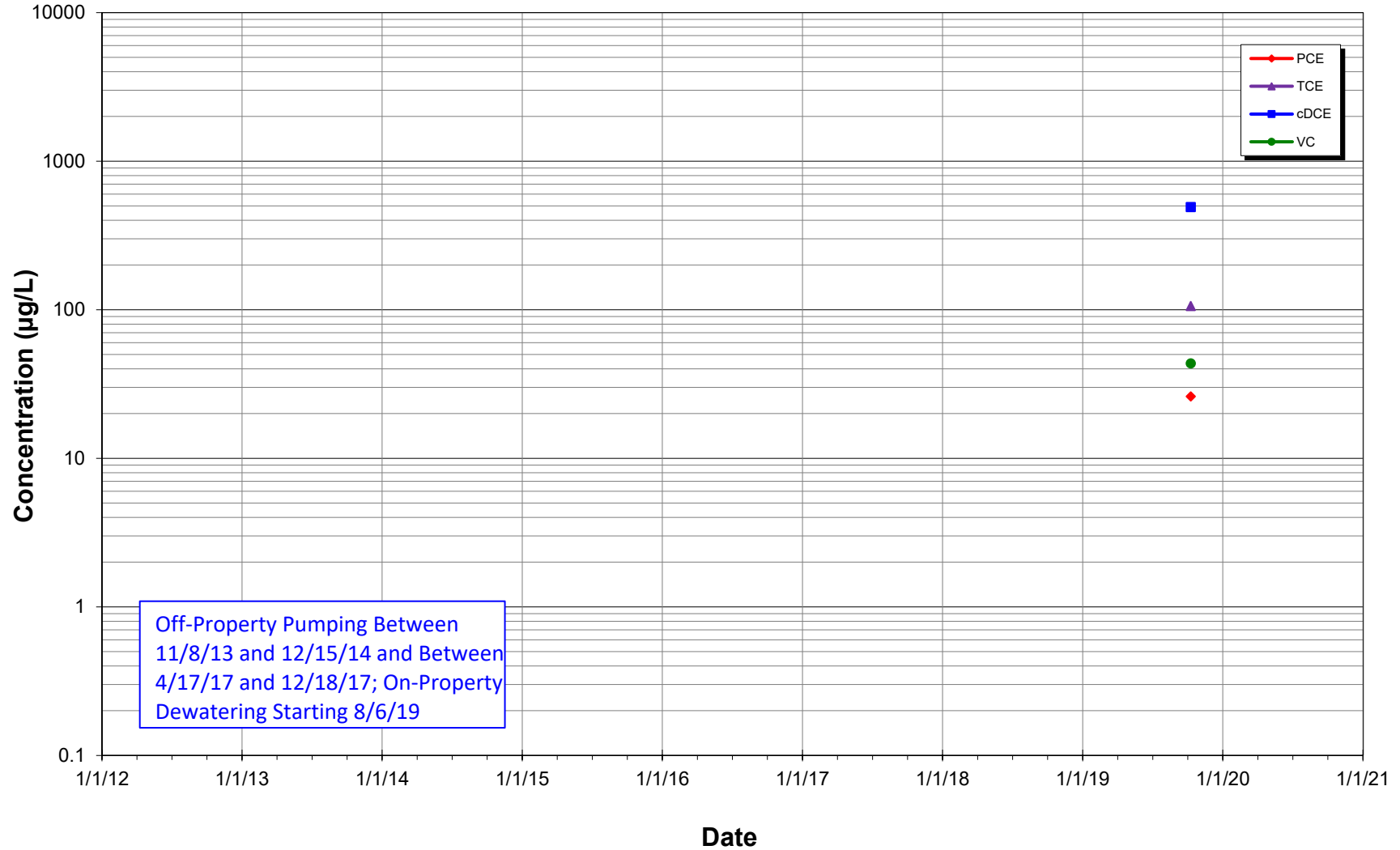
Concentration vs Time
MW-311 (-29.0 to -39.0 feet NAVD), Alley Between 8th and 9th
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

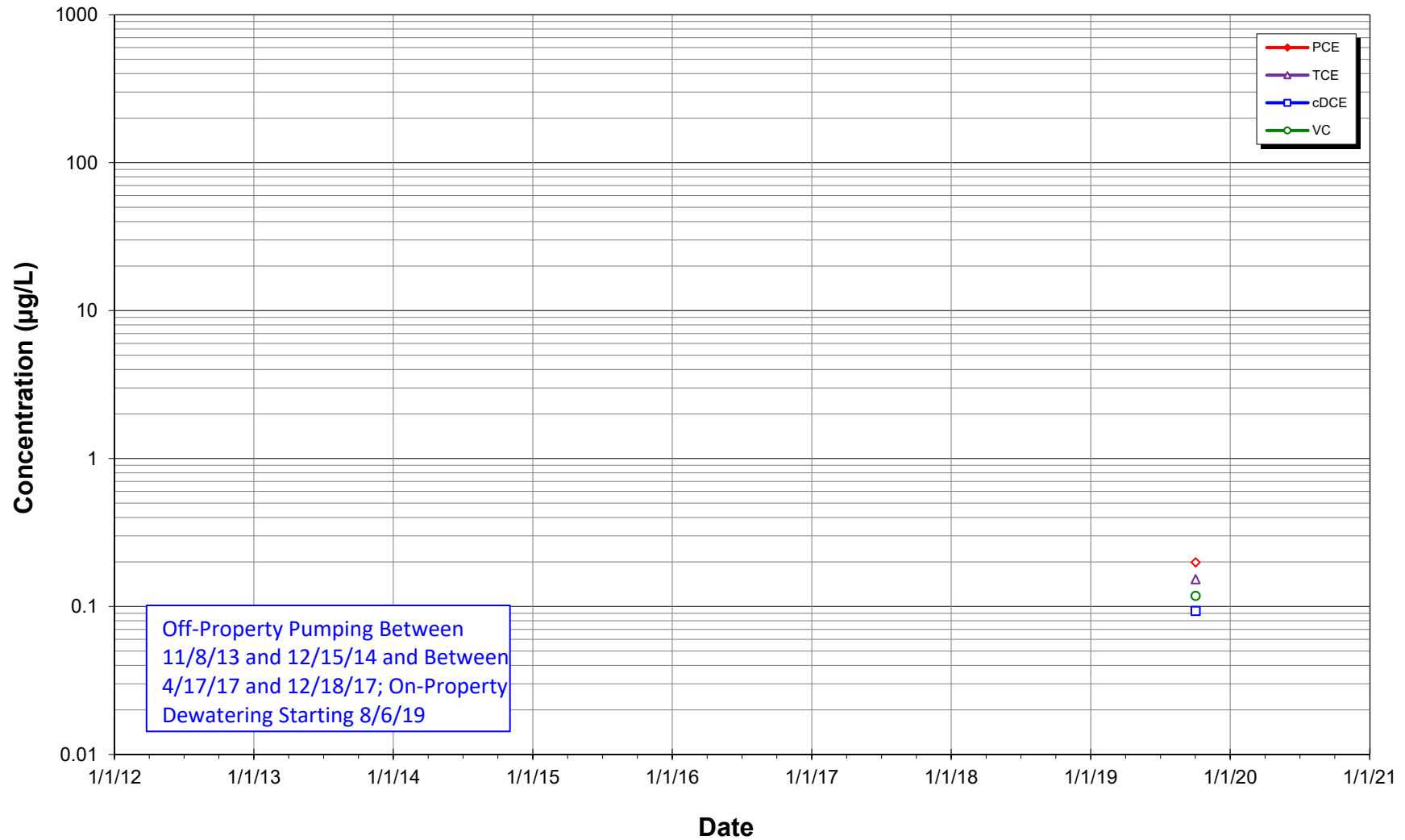
Concentration vs Time
MW-314 (-28.0 to -38.0 feet NAVD), Alley Between 8th and 9th
American Linen Supply Co–Dexter Ave Site



Off-Property Pumping Between 11/8/13 and 12/15/14 and Between 4/17/17 and 12/18/17; On-Property Dewatering Starting 8/6/19

- Notes:**
- 1) All results detected below the laboratory MDLs are shown as hollow data points .
 - 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

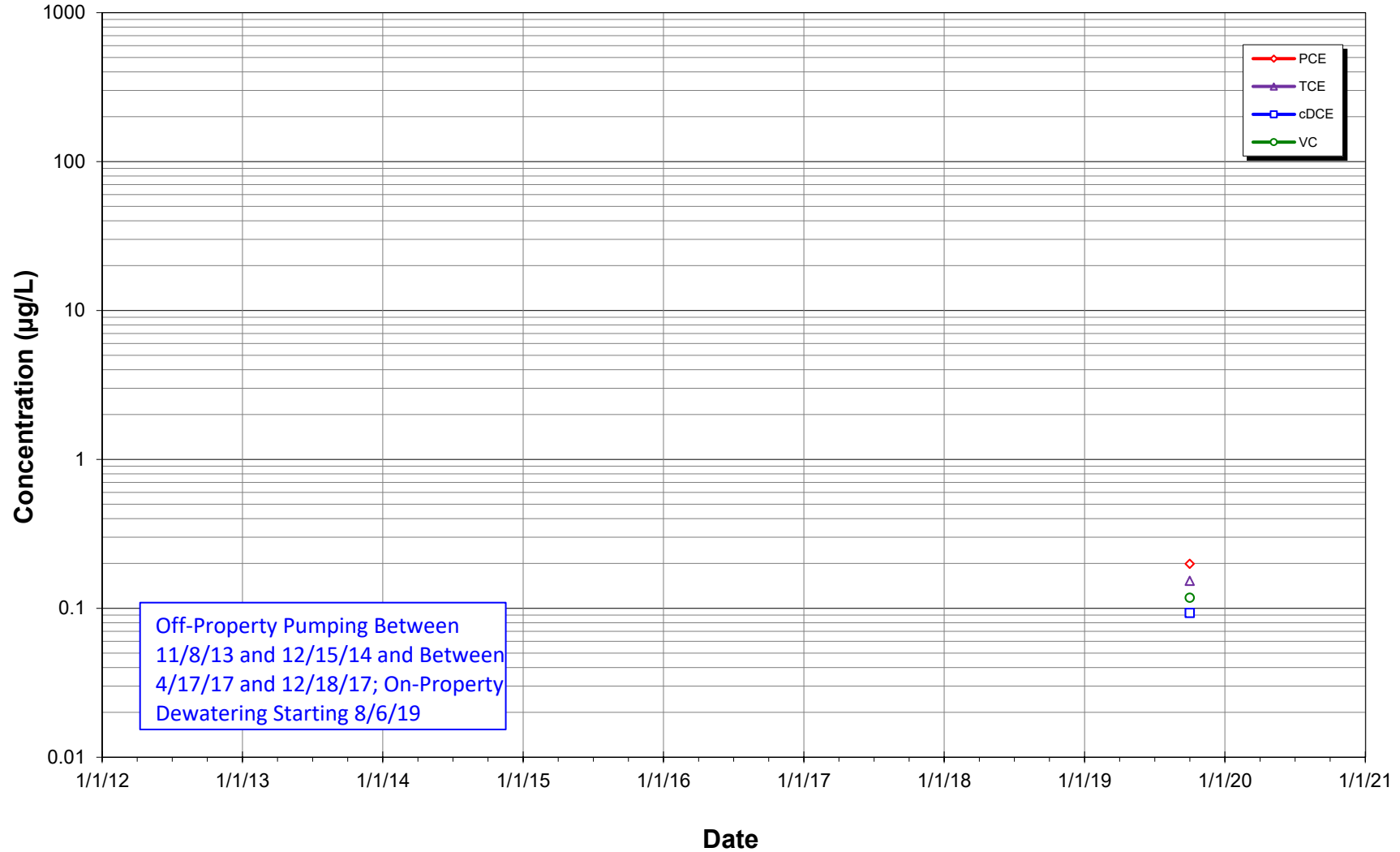
Concentration vs Time
MW-315 (12.2 to 2.2 feet NAVD), Mercer Street
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

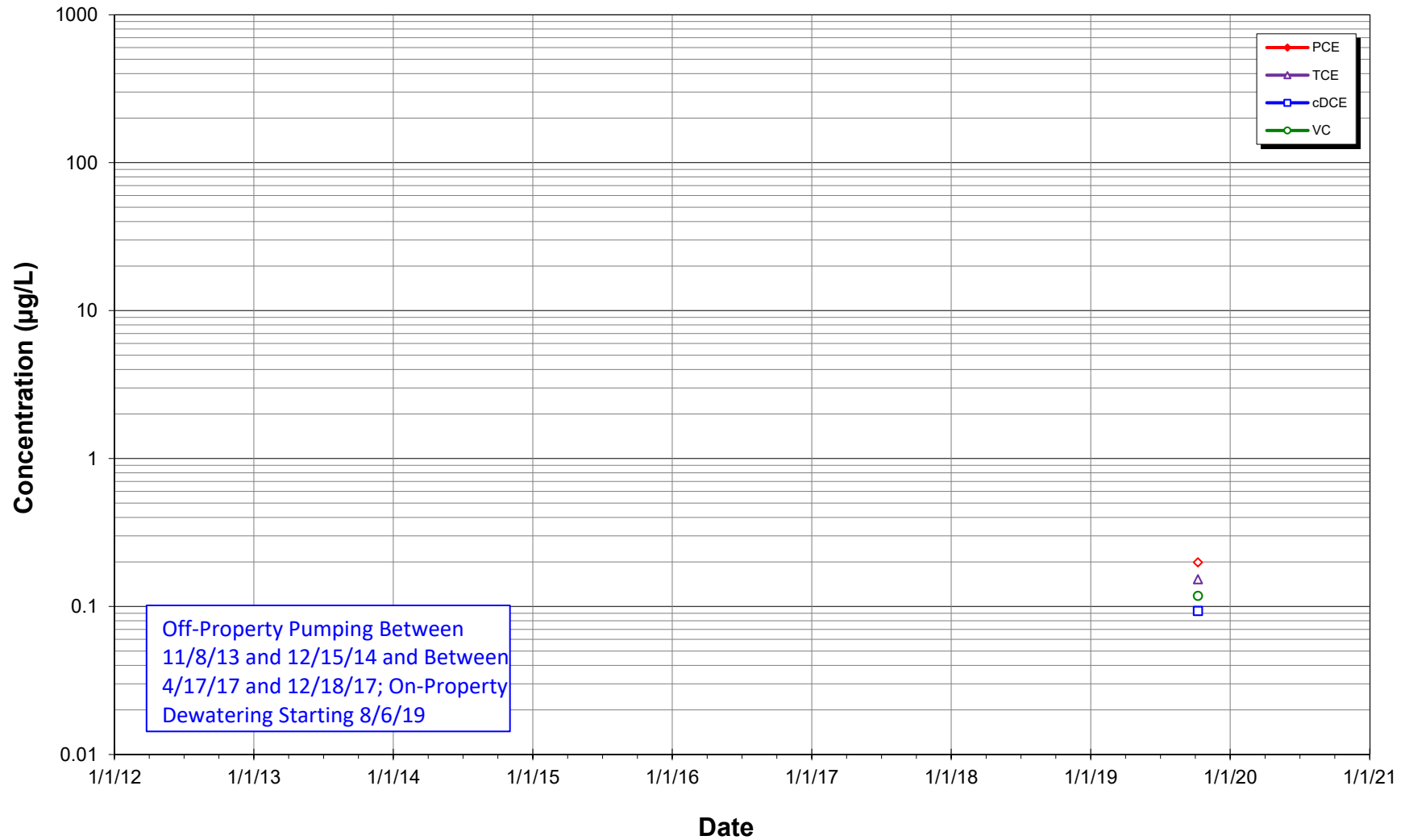
Concentration vs Time MW-316 (-10.0 to -20.0 feet NAVD), Mercer Street American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

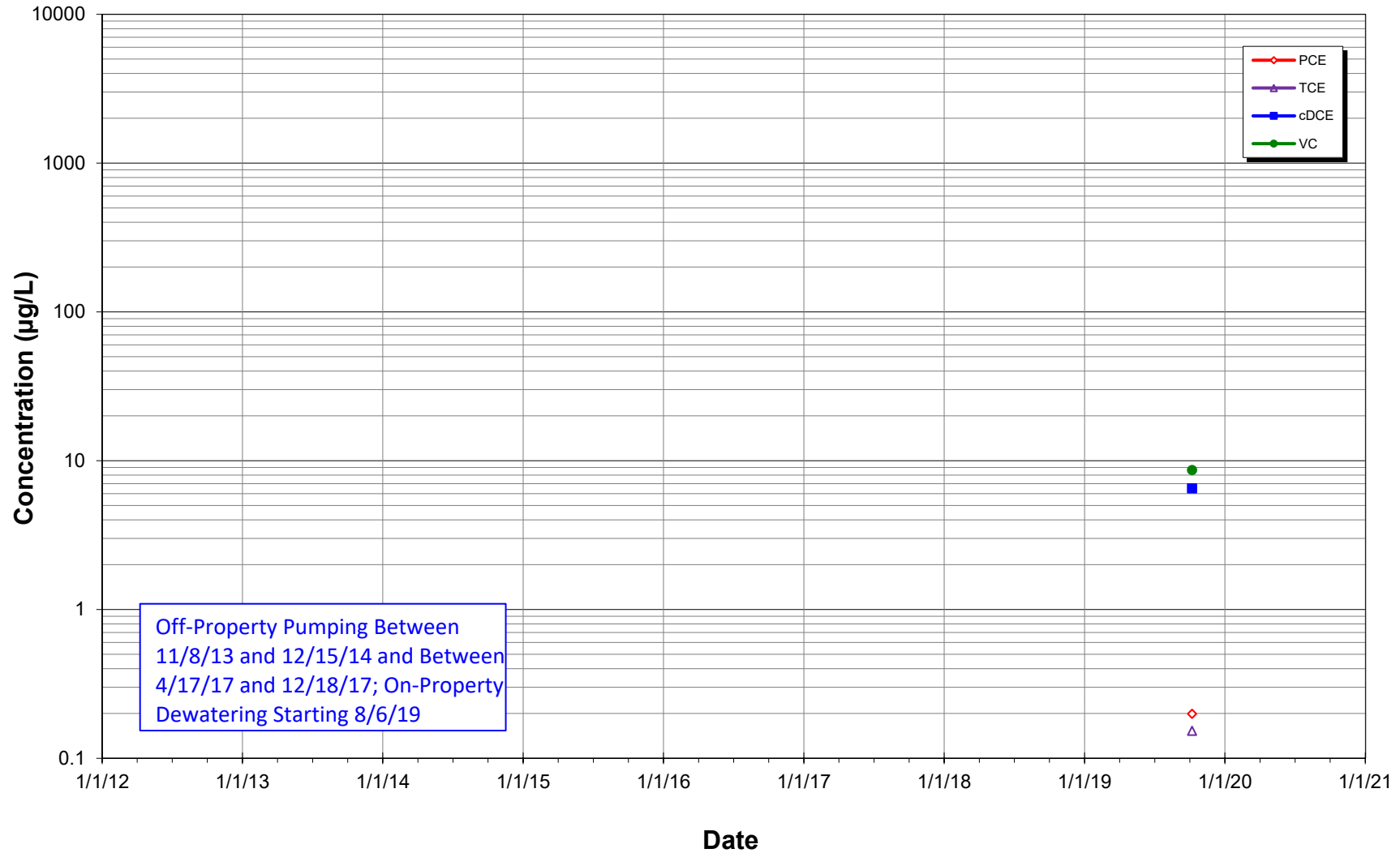
Concentration vs Time
MW-317 (3.4 to -6.6 feet NAVD), 9th Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

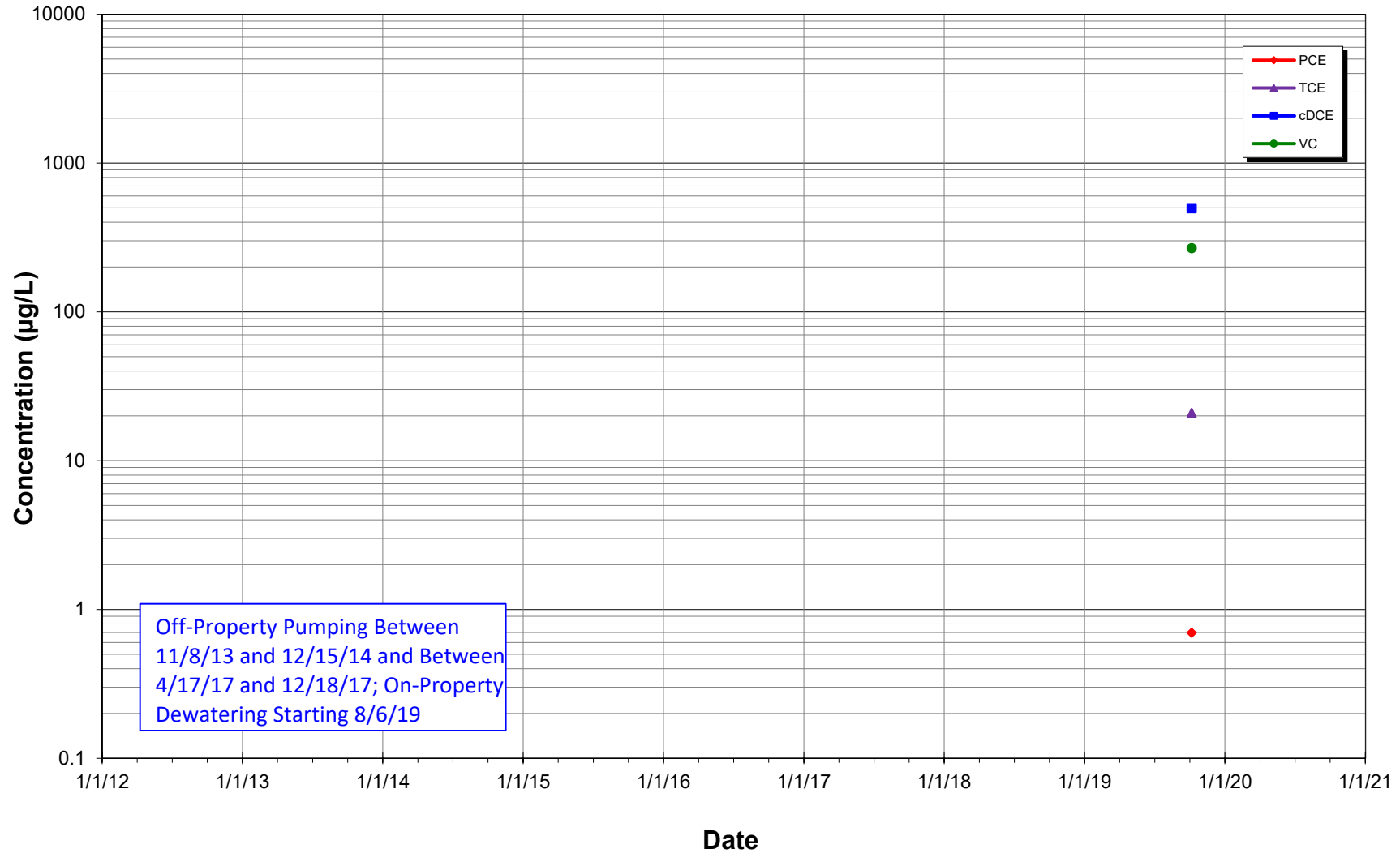
Concentration vs Time
MW-318 (-23.1 to -33.1 feet NAVD), 9th Avenue N
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

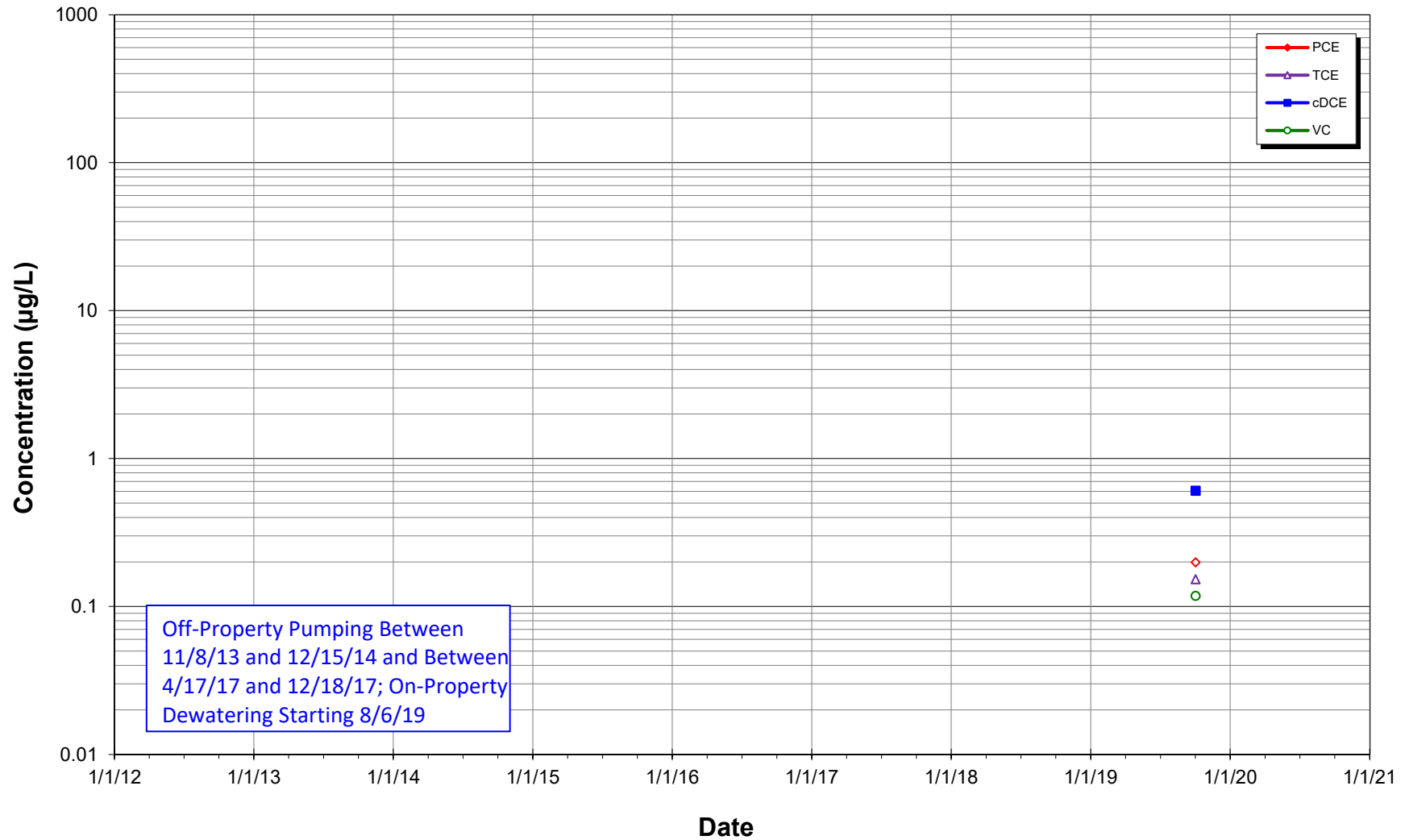
Concentration vs Time
MW-322 (-21.2 to -31.2 feet NAVD), 9th Avenue N
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

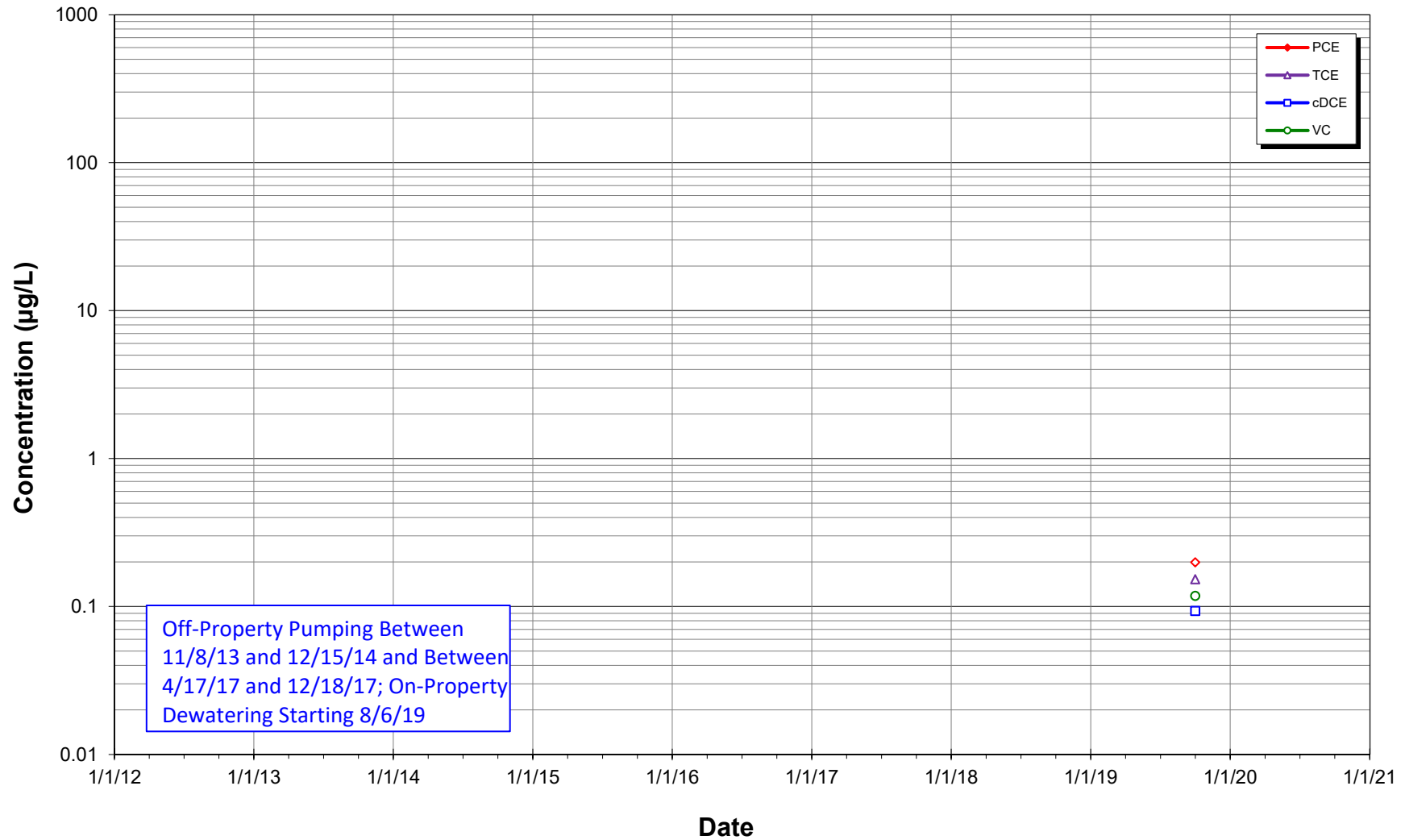
Concentration vs Time
MW-325 (7.0 to -3.0 feet NAVD), Mercer Street
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

Concentration vs Time
MW-327 (3.6 to -6.3 feet NAVD), South Lake Union Park
American Linen Supply Co–Dexter Ave Site

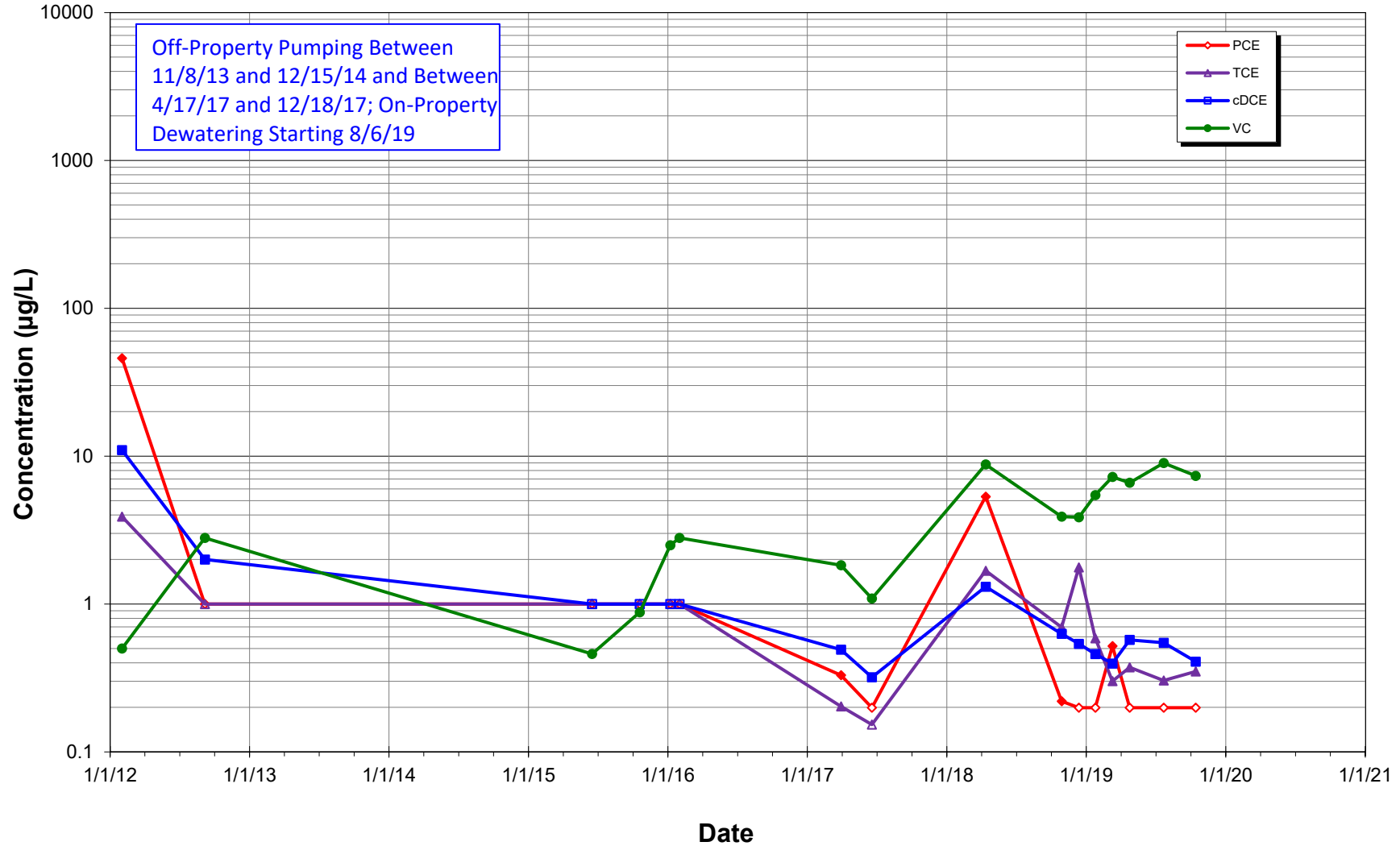


Off-Property Pumping Between
 11/8/13 and 12/15/14 and Between
 4/17/17 and 12/18/17; On-Property
 Dewatering Starting 8/6/19

Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

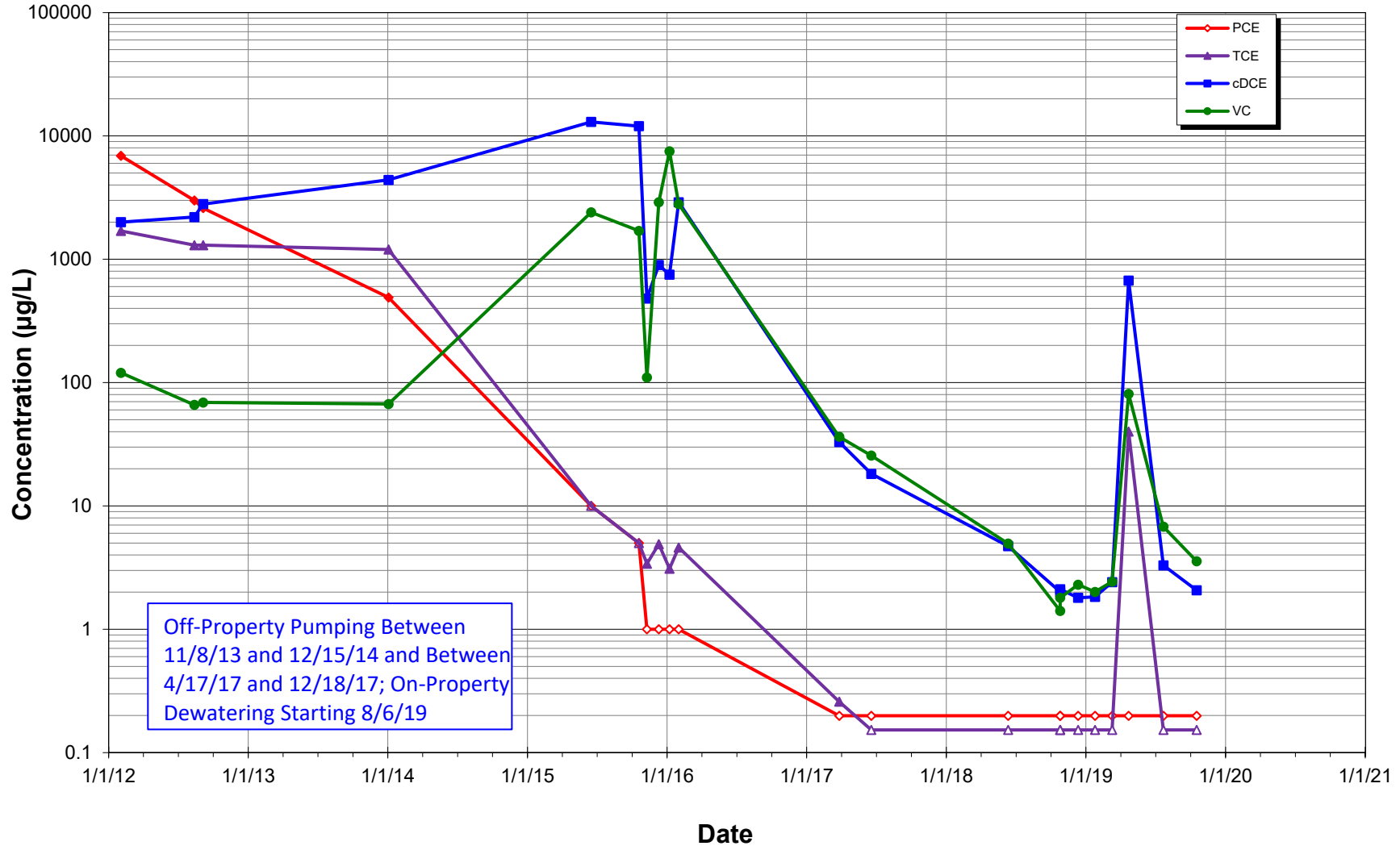
Concentration vs Time
W-MW-01 (-25.1 to -35.1 feet NAVD), 8th Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

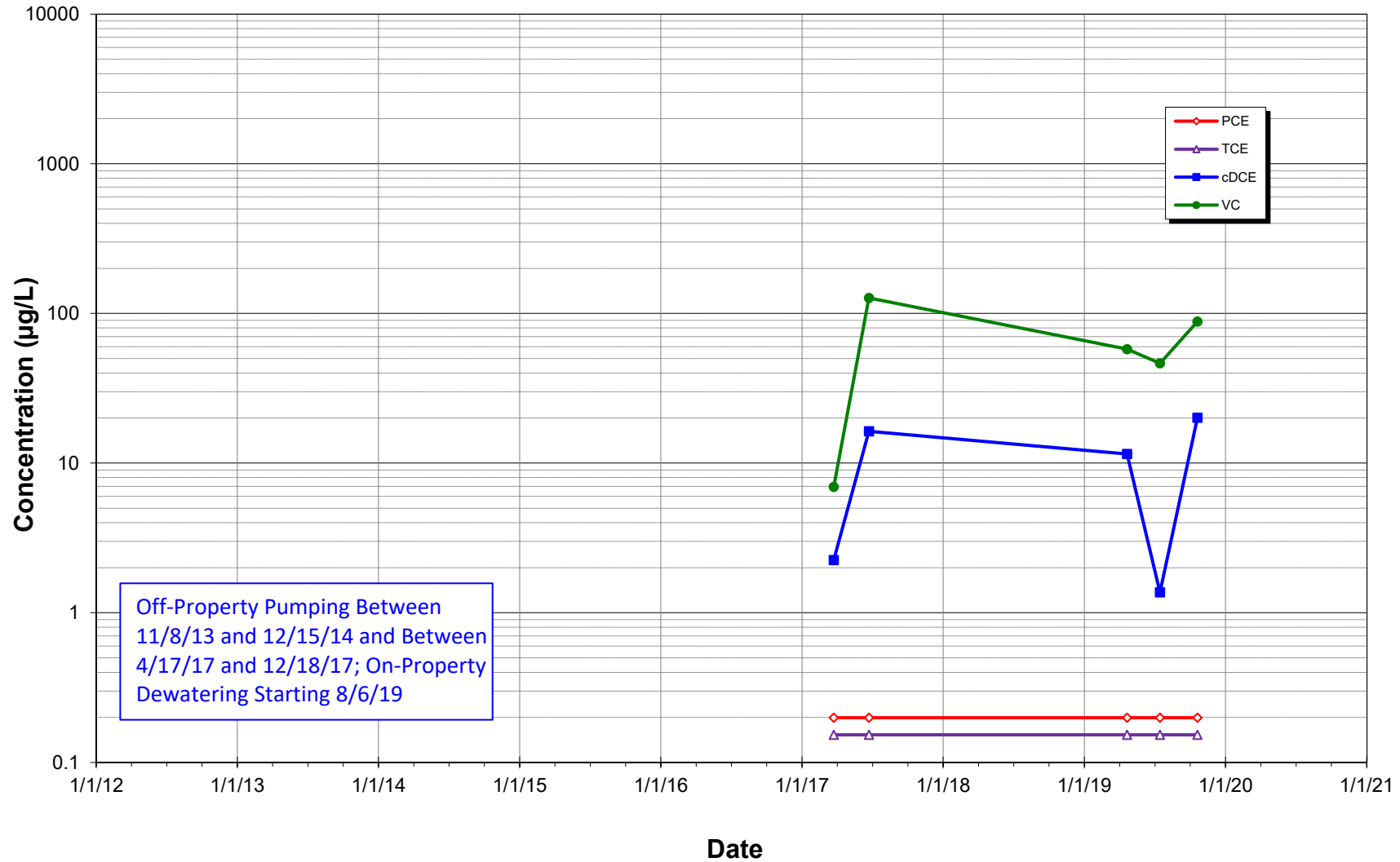
Concentration vs Time
W-MW-02 (-26.5 to -36.5 feet NAVD), 8th Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

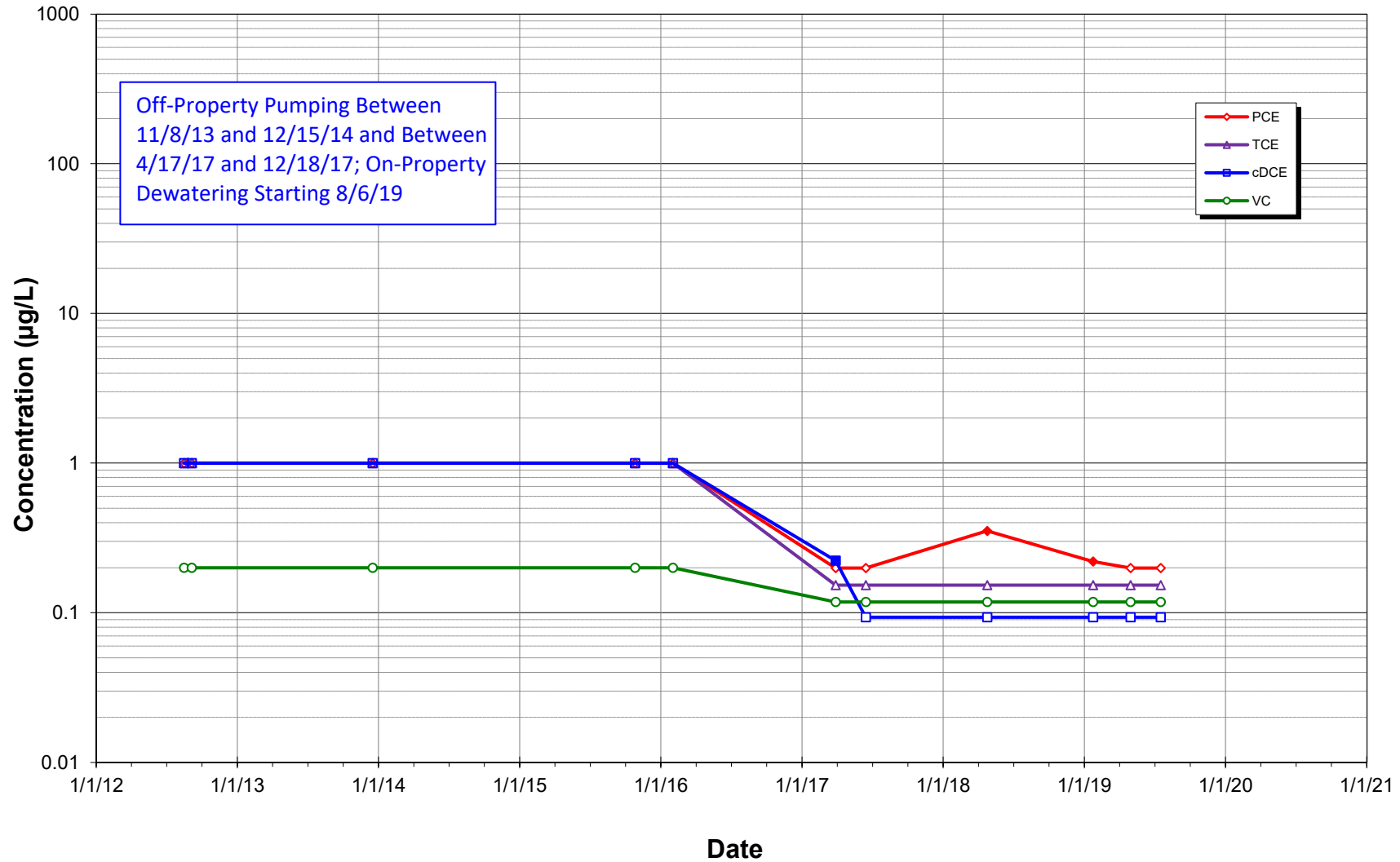
Concentration vs Time
GEI-2 (-21.1 to -31.1 feet NAVD), Block 37
American Linen Supply Co–Dexter Ave Site



Notes:

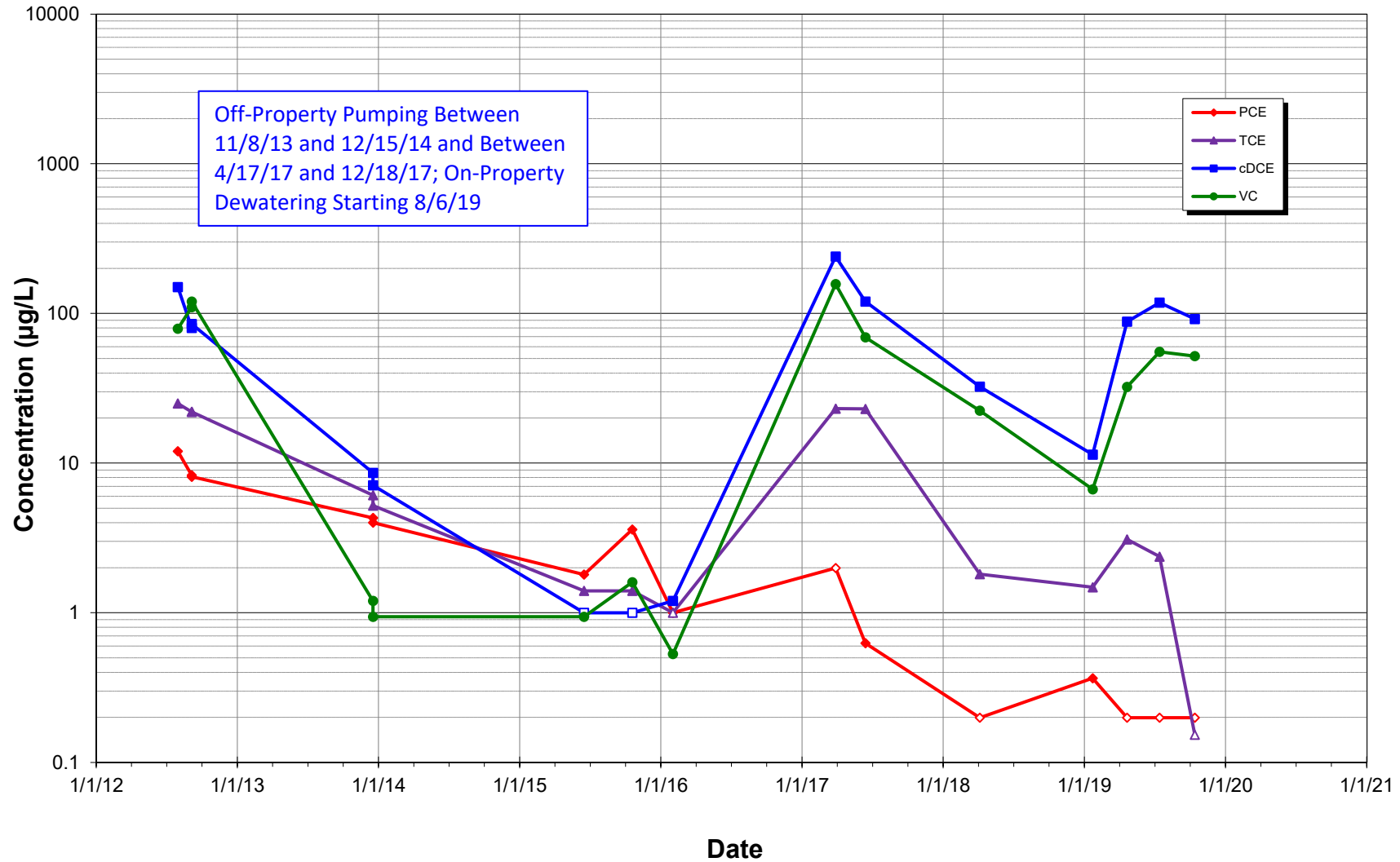
- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

Concentration vs Time
MW102 (-65.8 to -75.8 feet NAVD), Valley Street
American Linen Supply Co–Dexter Ave Site



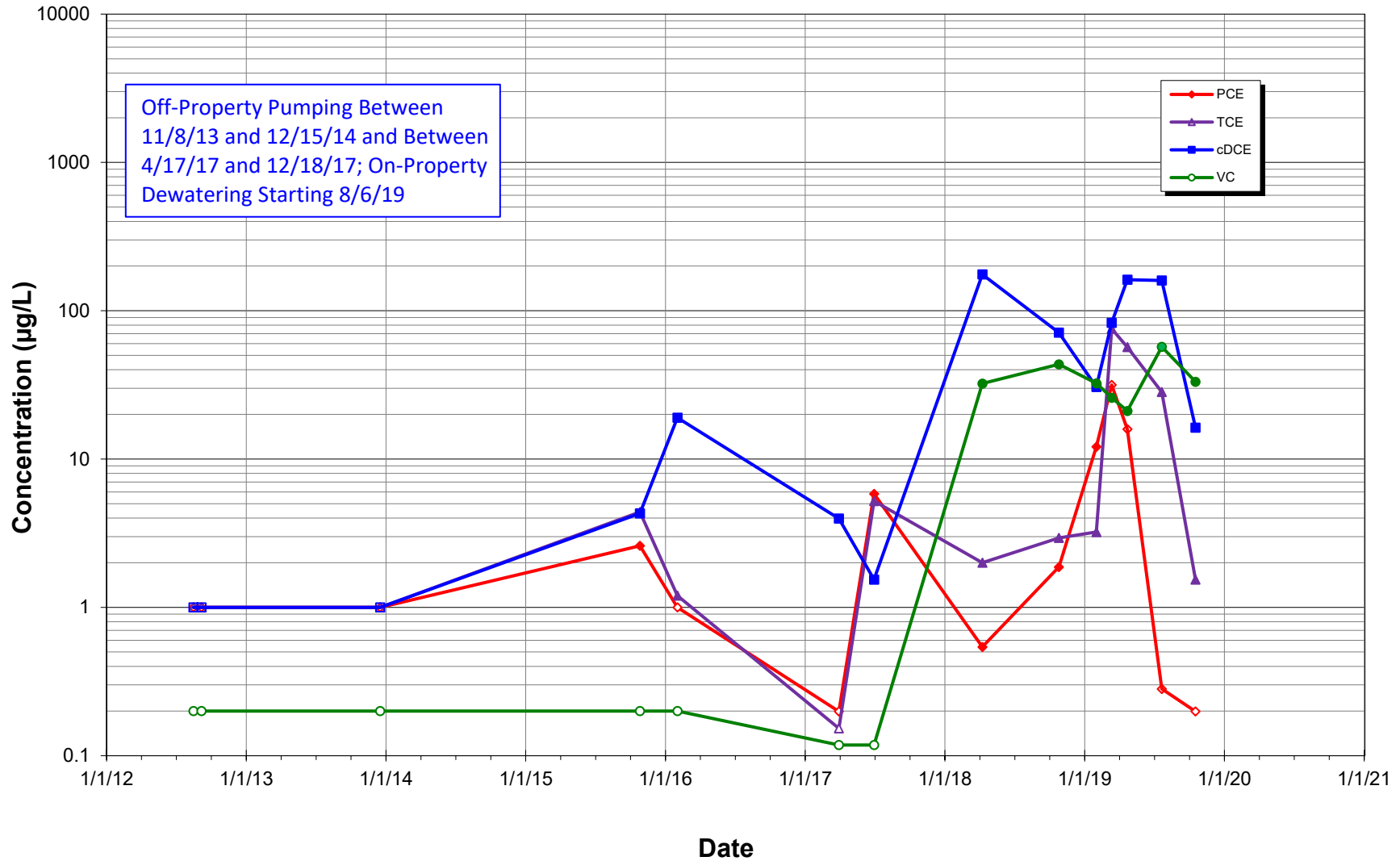
- Notes:**
- 1) All results detected below the laboratory MDLs are shown as hollow data points .
 - 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

Concentration vs Time
MW103 (-67.6 to -77.6 feet NAVD), Alley
American Linen Supply Co–Dexter Ave Site



- Notes:**
- 1) All results detected below the laboratory MDLs are shown as hollow data points .
 - 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

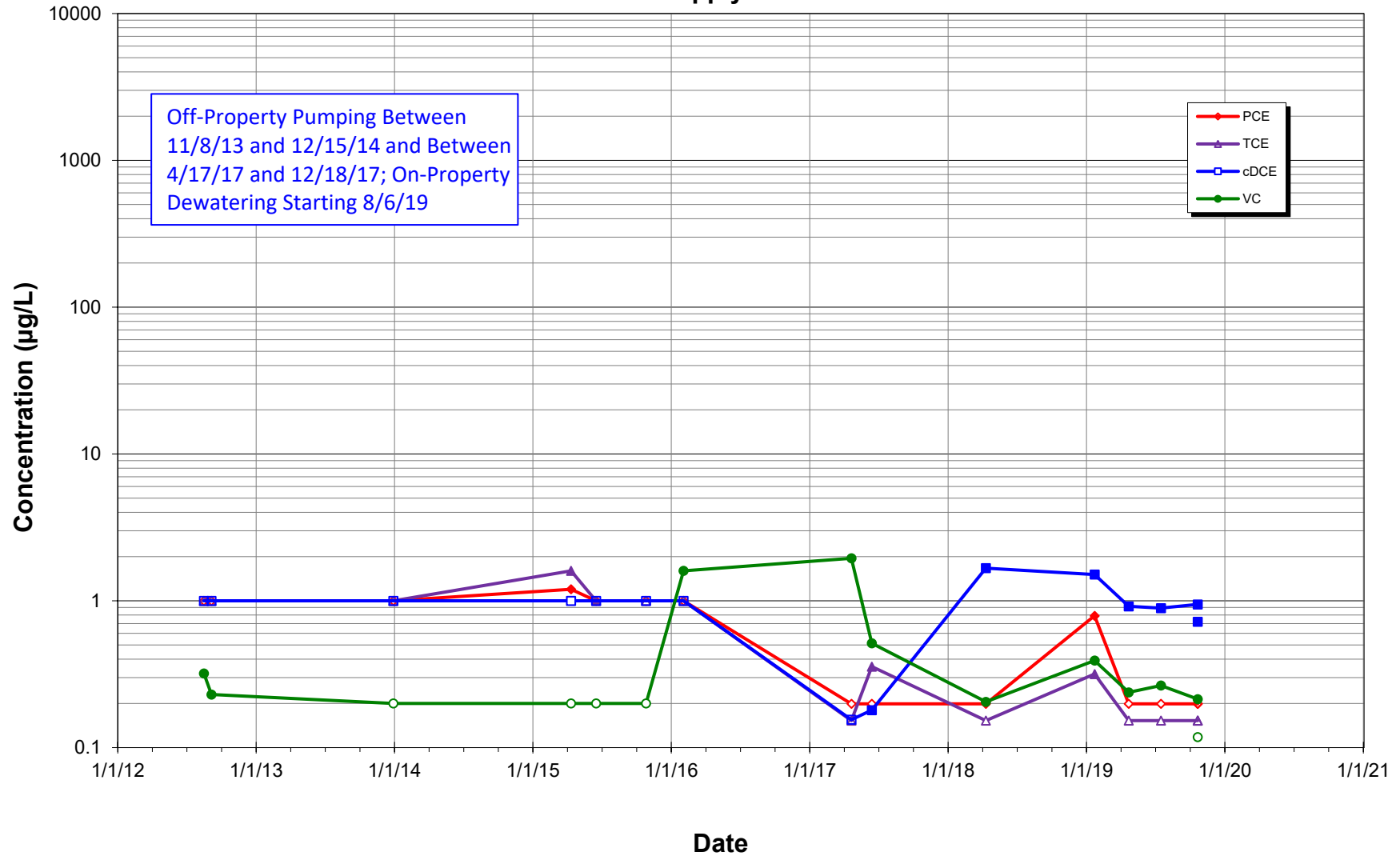
Concentration vs Time
MW104 (-76.3 to -86.3 feet NAVD), 8th Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

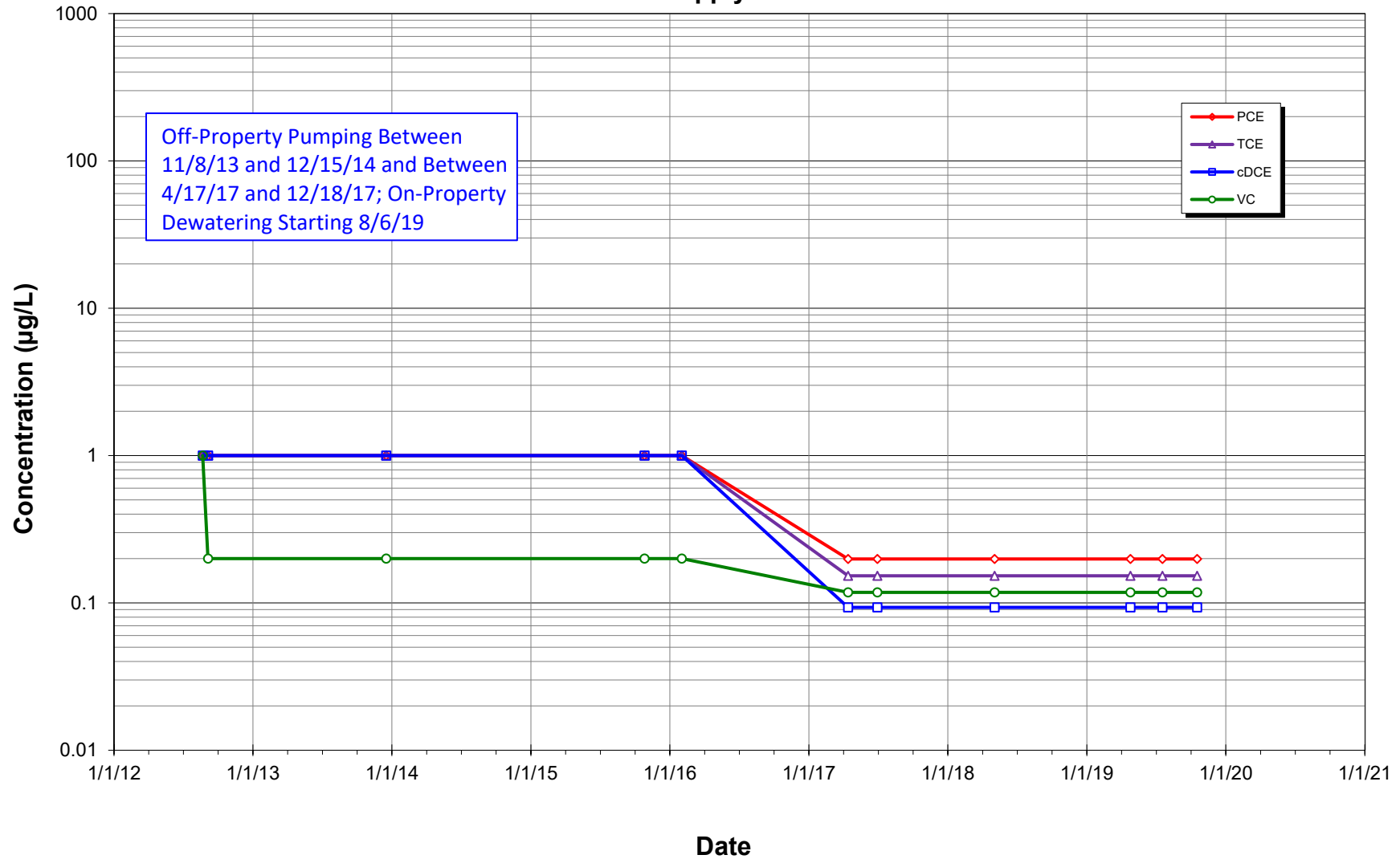
Concentration vs Time
MW105 (-85.3 to -95.3 feet NAVD), Roy Street
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

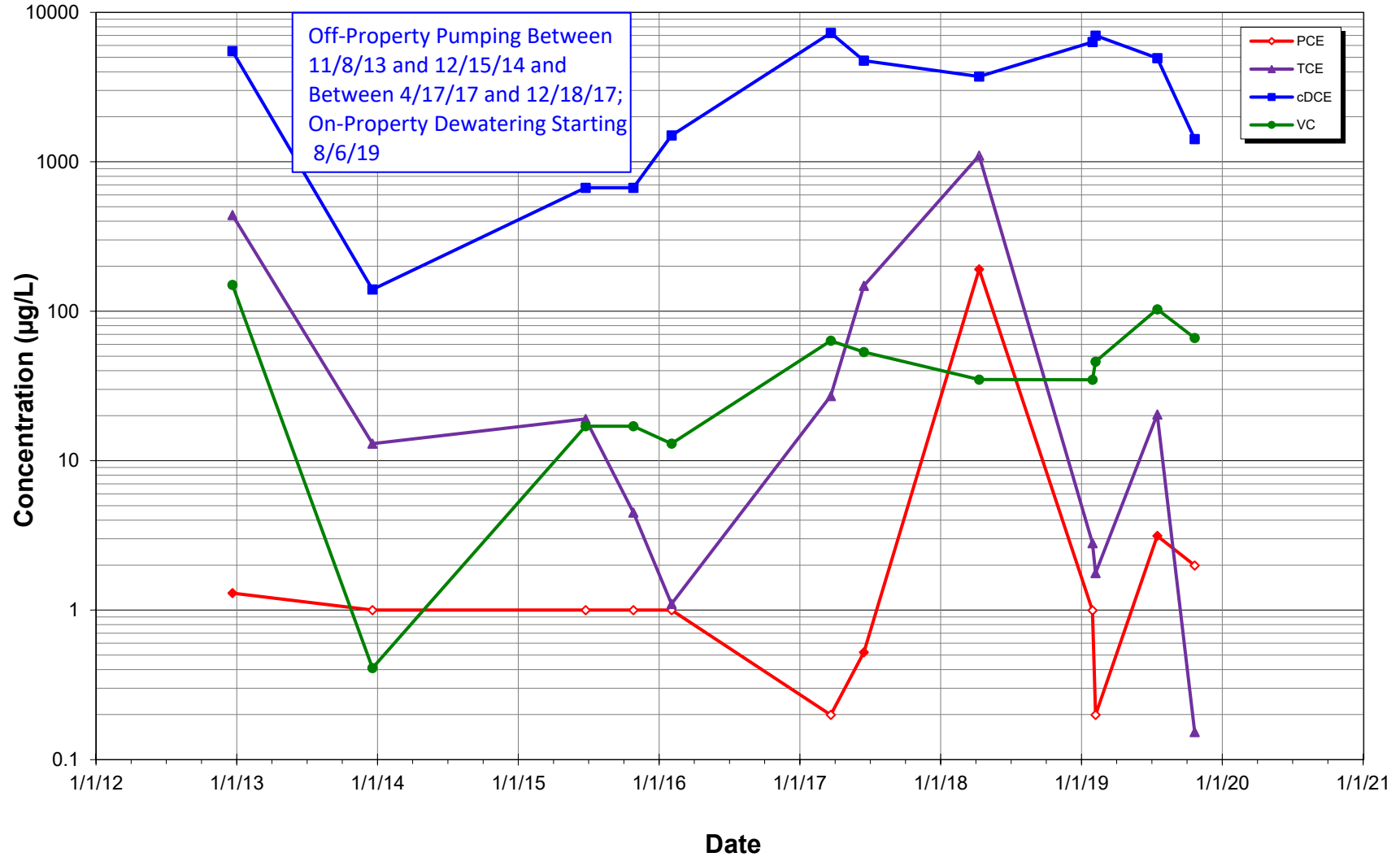
Concentration vs Time
MW106 (-78.0 to -88.0 feet NAVD), South of Roy Street
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

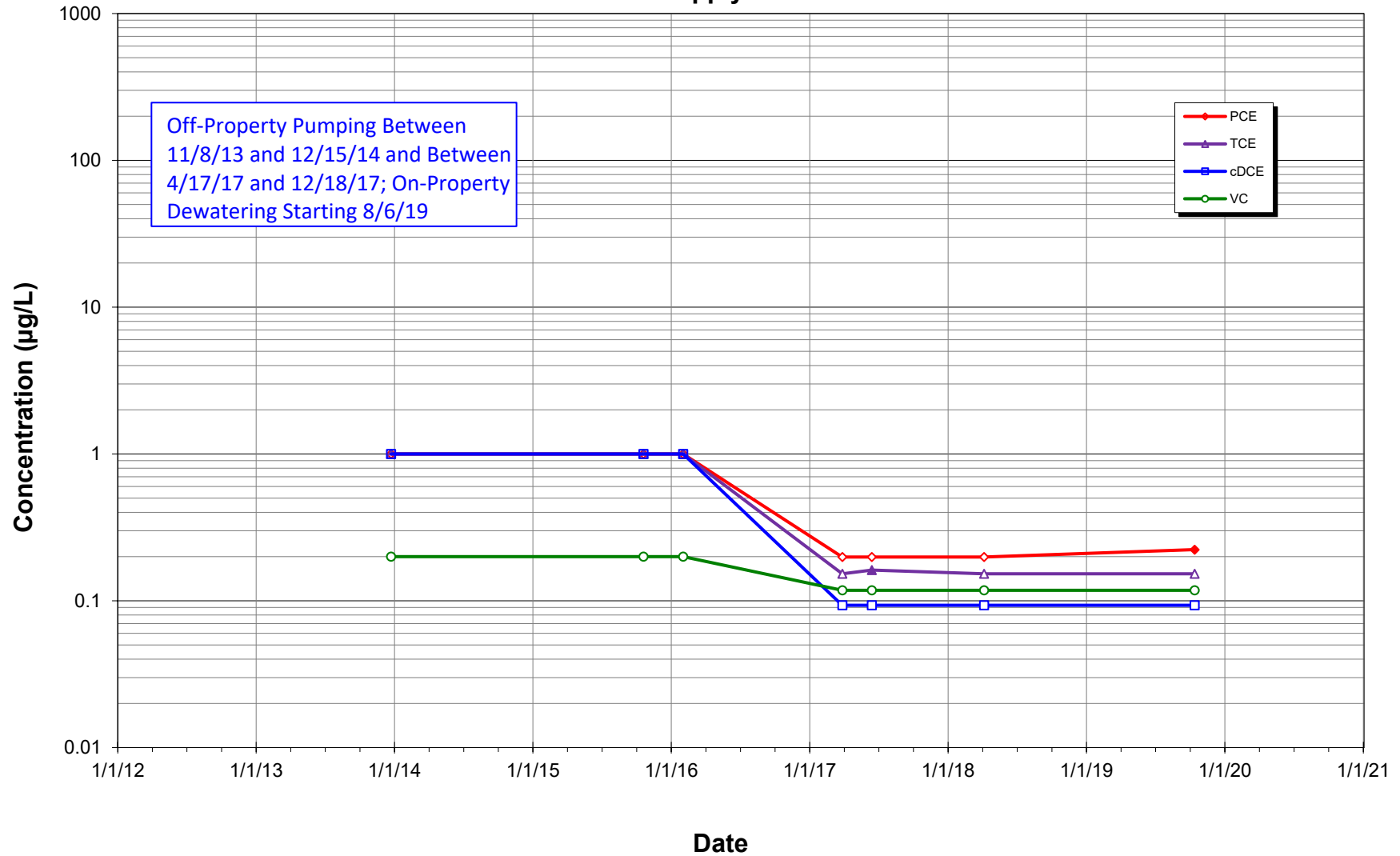
Concentration vs Time
MW113 (-36.8 to -46.8 feet NAVD), 9th Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

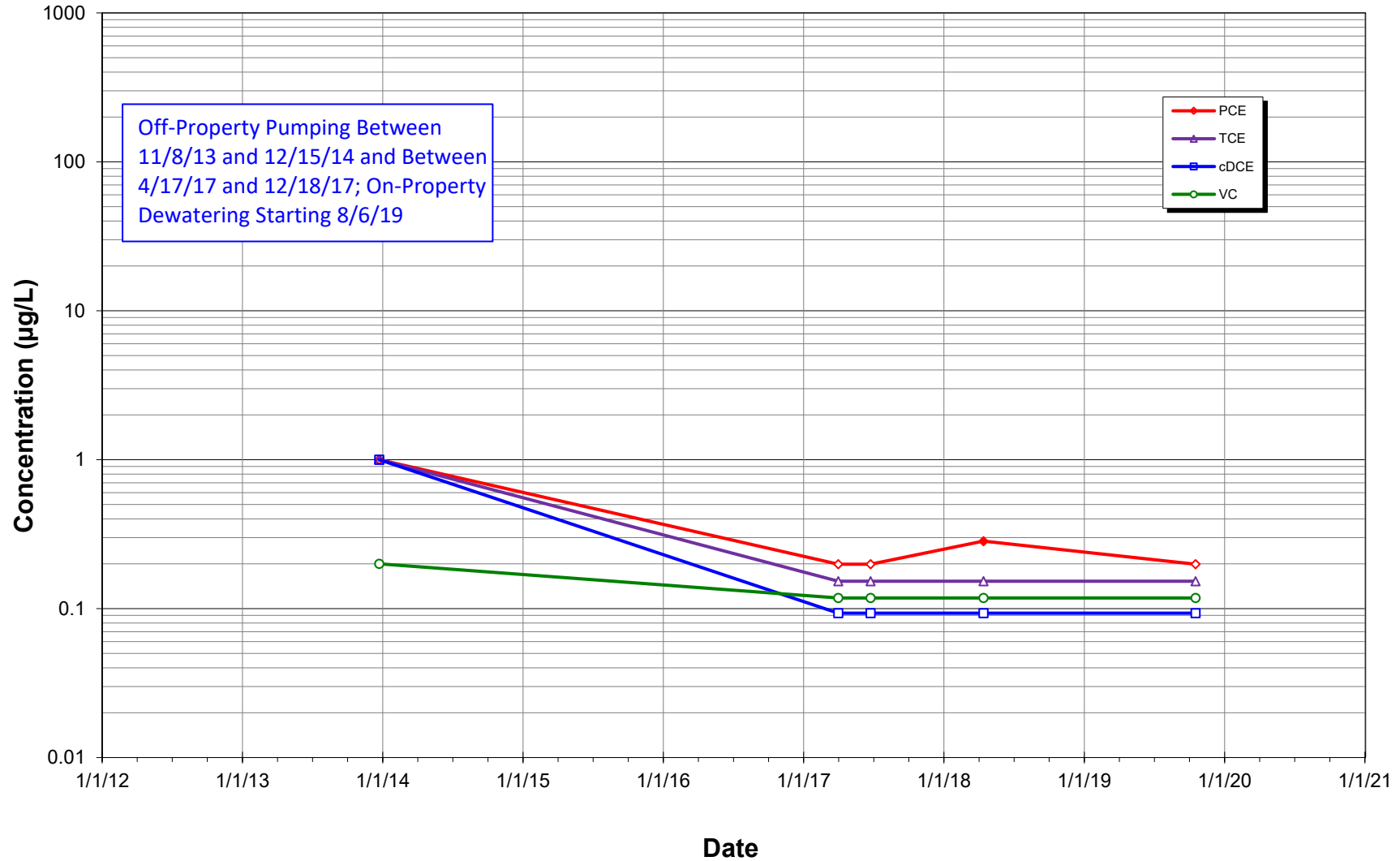
Concentration vs Time
MW122 (-75.0 to -85.0 feet NAVD), SCL Parcel
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

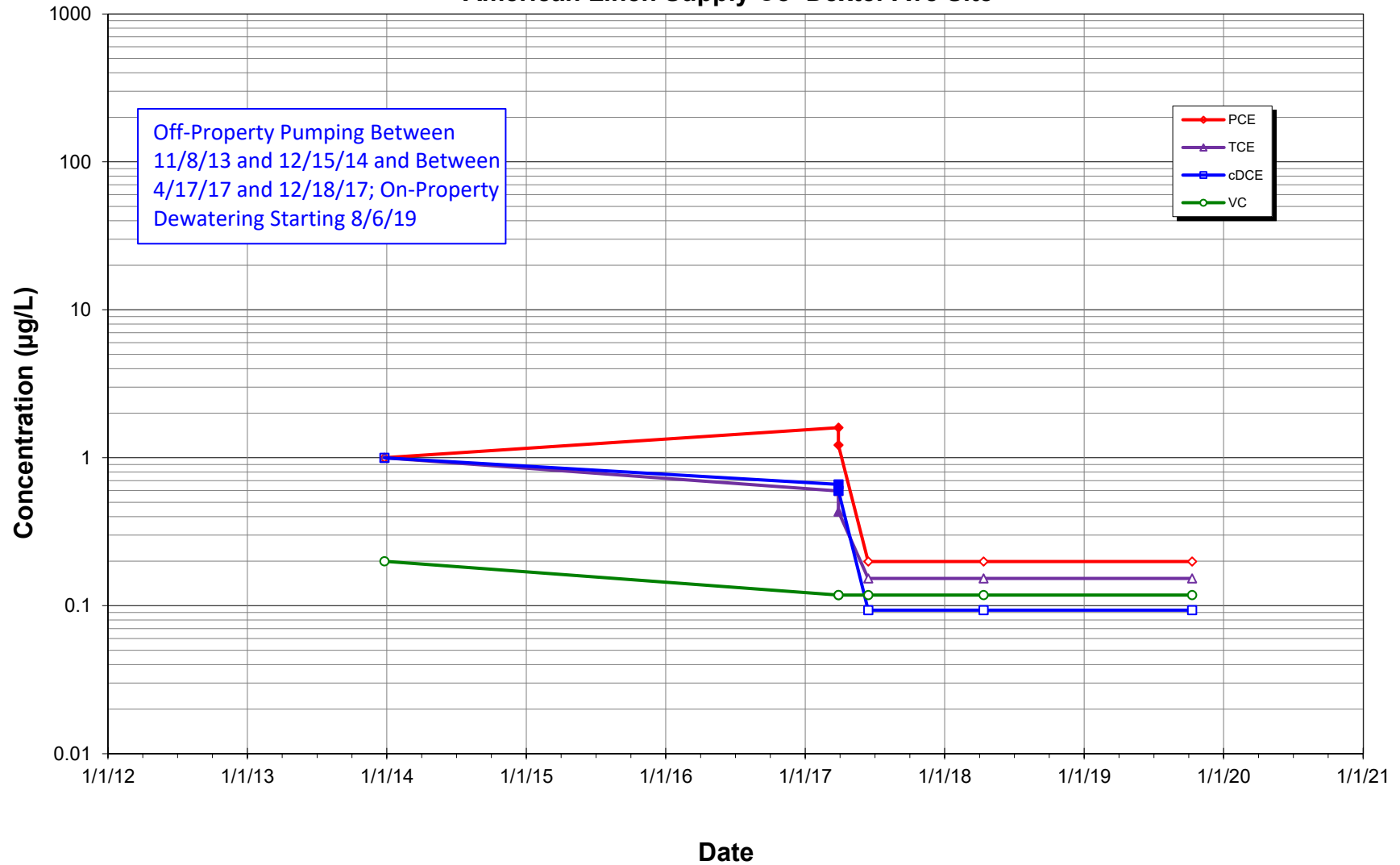
Concentration vs Time
MW123 (-42.5 to -52.5 feet NAVD), Westlake Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

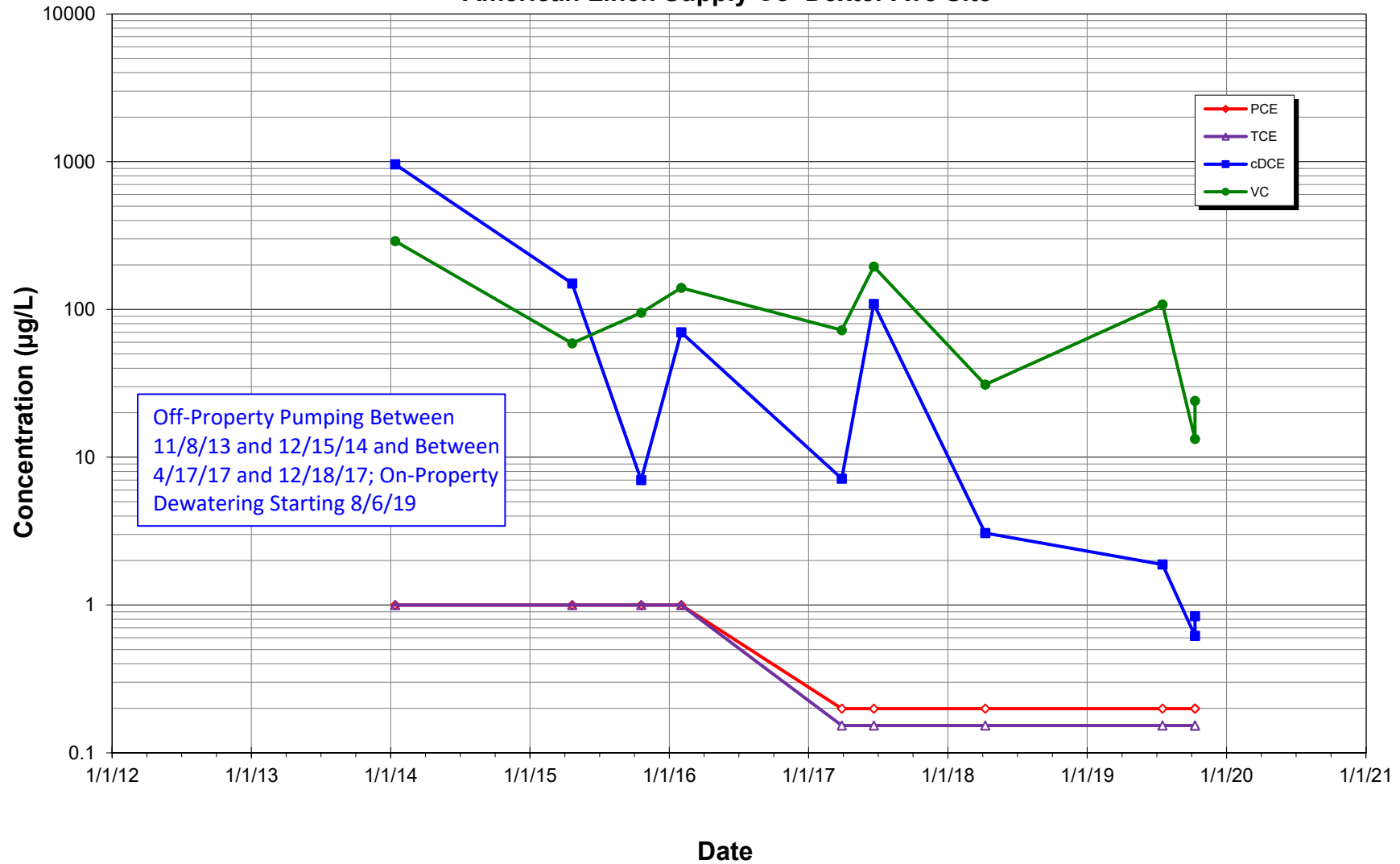
Concentration vs Time
MW124 (-53.8 to -63.8 feet NAVD), Valley Street
American Linen Supply Co–Dexter Ave Site



Notes:

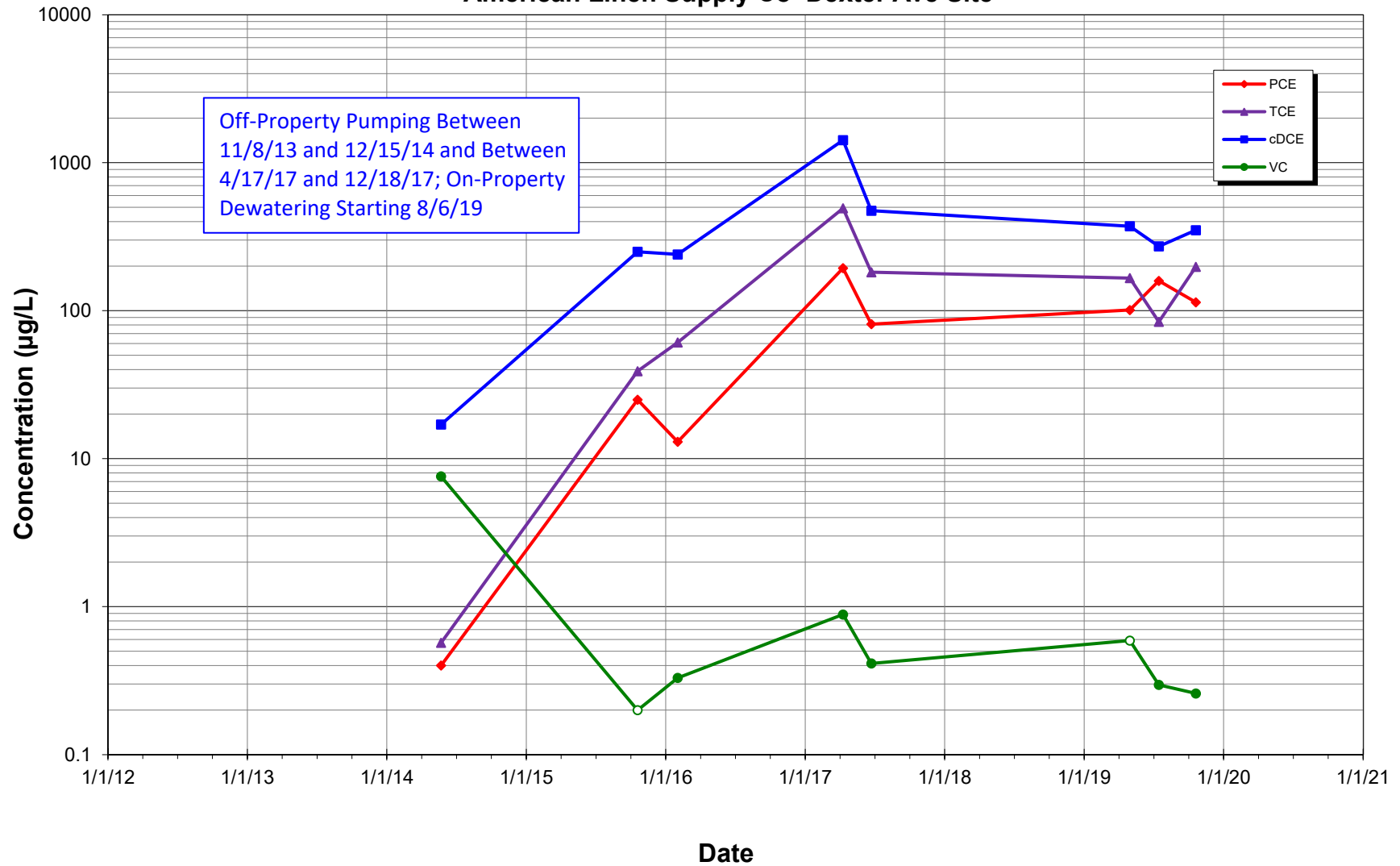
- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

Concentration vs Time
MW128 (-30.8 to -40.8 feet NAVD), Westlake Avenue North
American Linen Supply Co–Dexter Ave Site



- Notes:**
- 1) All results detected below the laboratory MDLs are shown as hollow data points .
 - 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

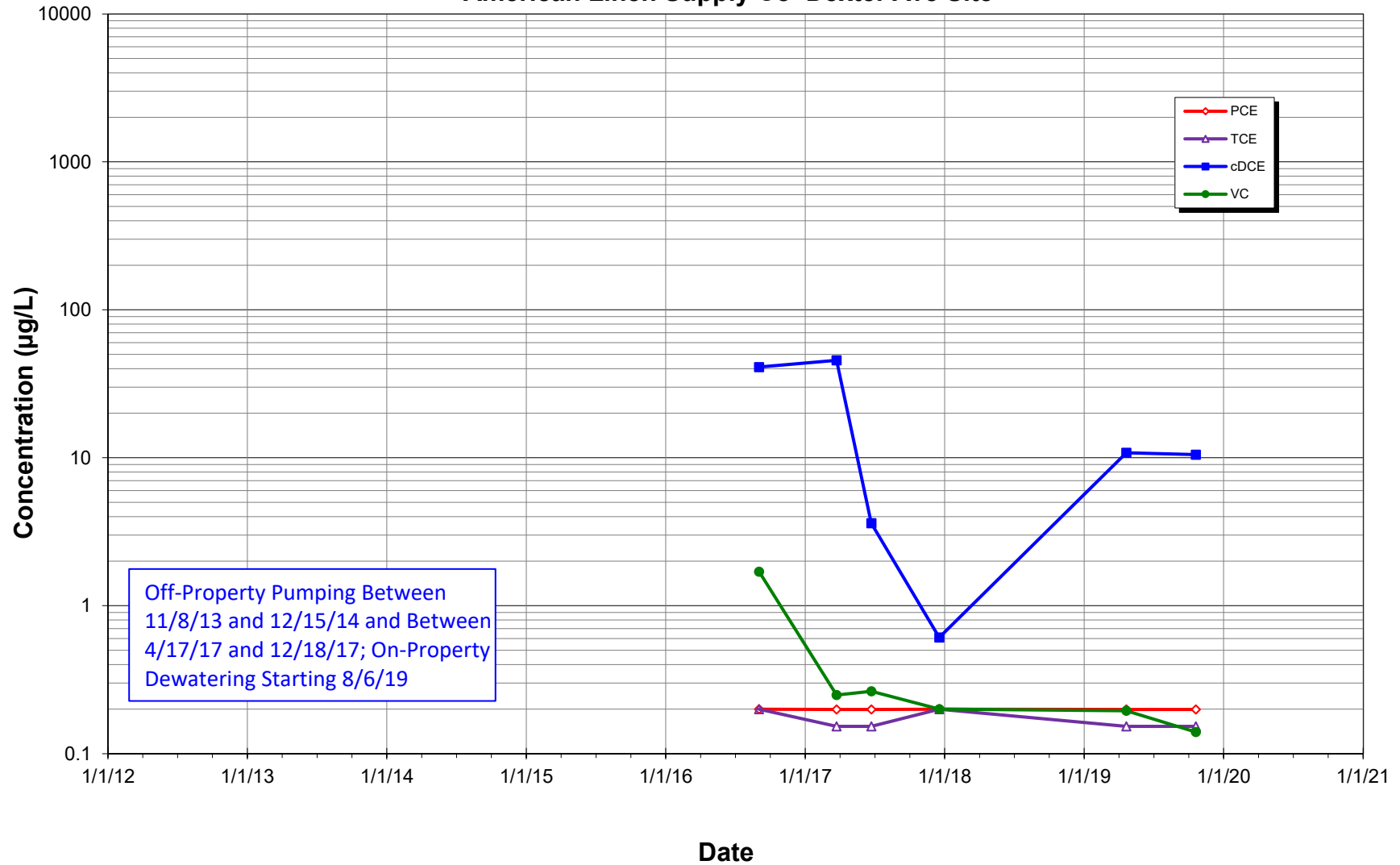
Concentration vs Time
FMW-129 (-45.6 to -50.6 feet NAVD), Roy Street
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

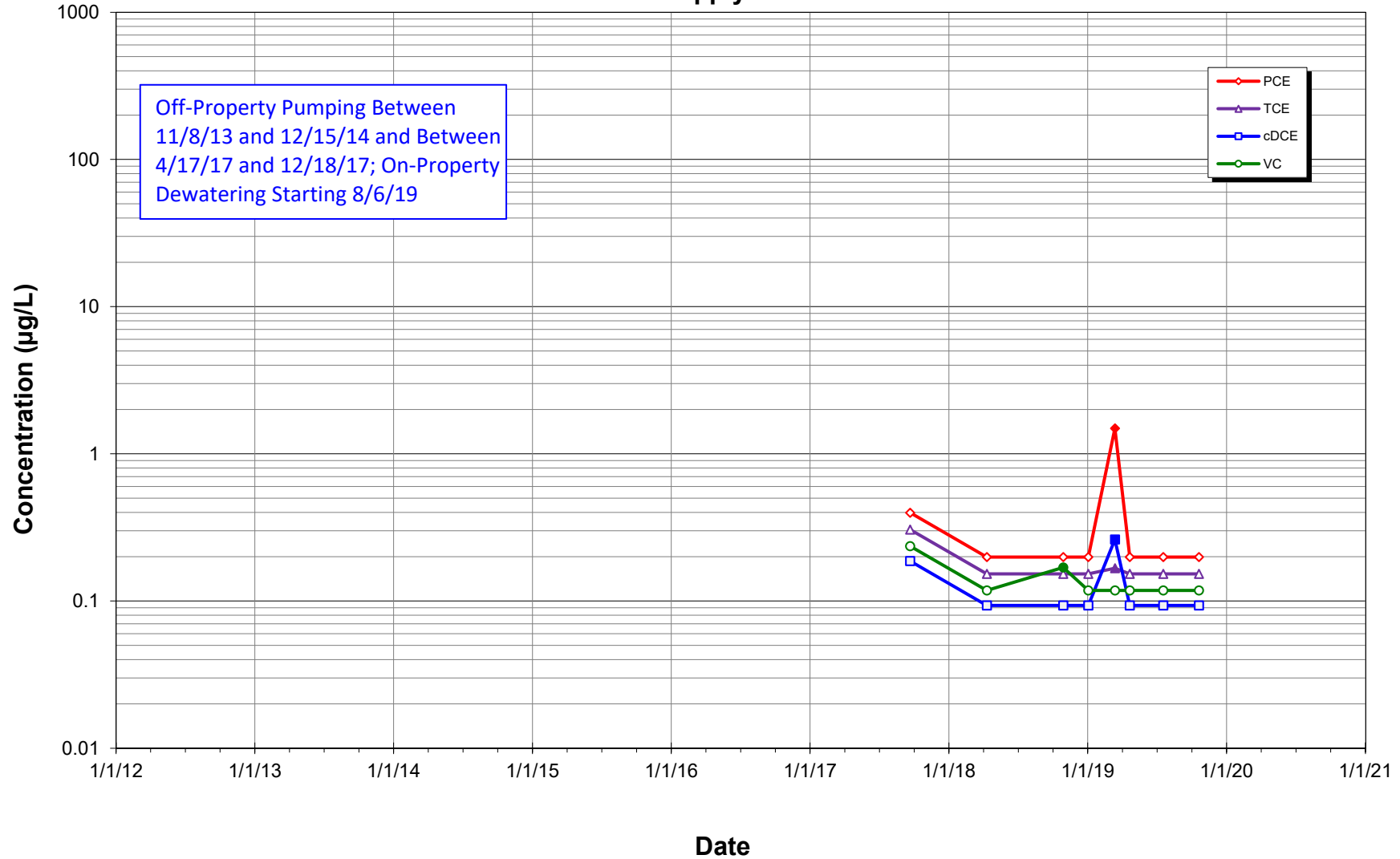
Concentration vs Time
FMW-131 (-34.7 to -44.7 feet NAVD), Block 37
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

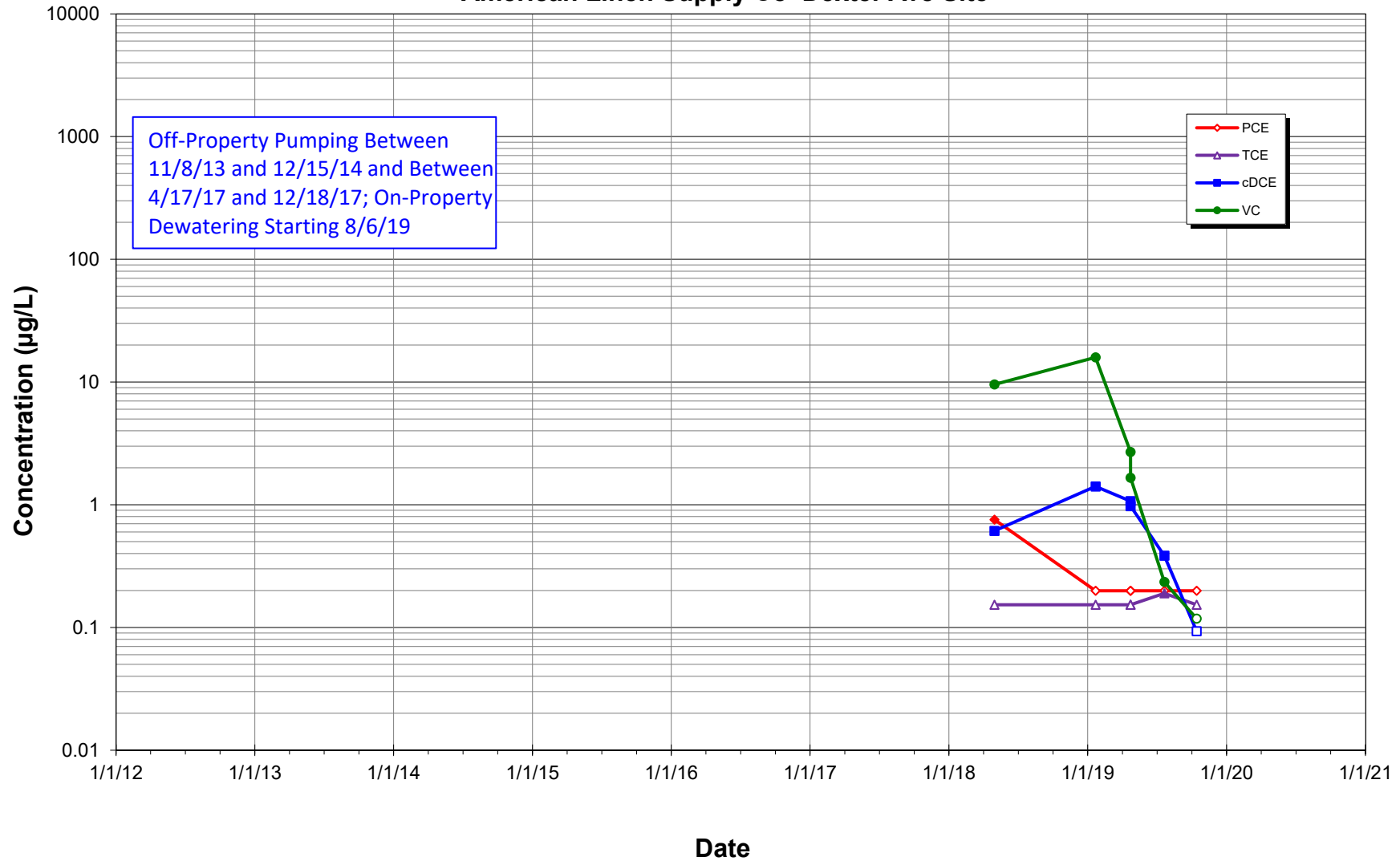
Concentration vs Time
MW-138 (-47.5 to -57.5 feet NAVD), Dexter Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

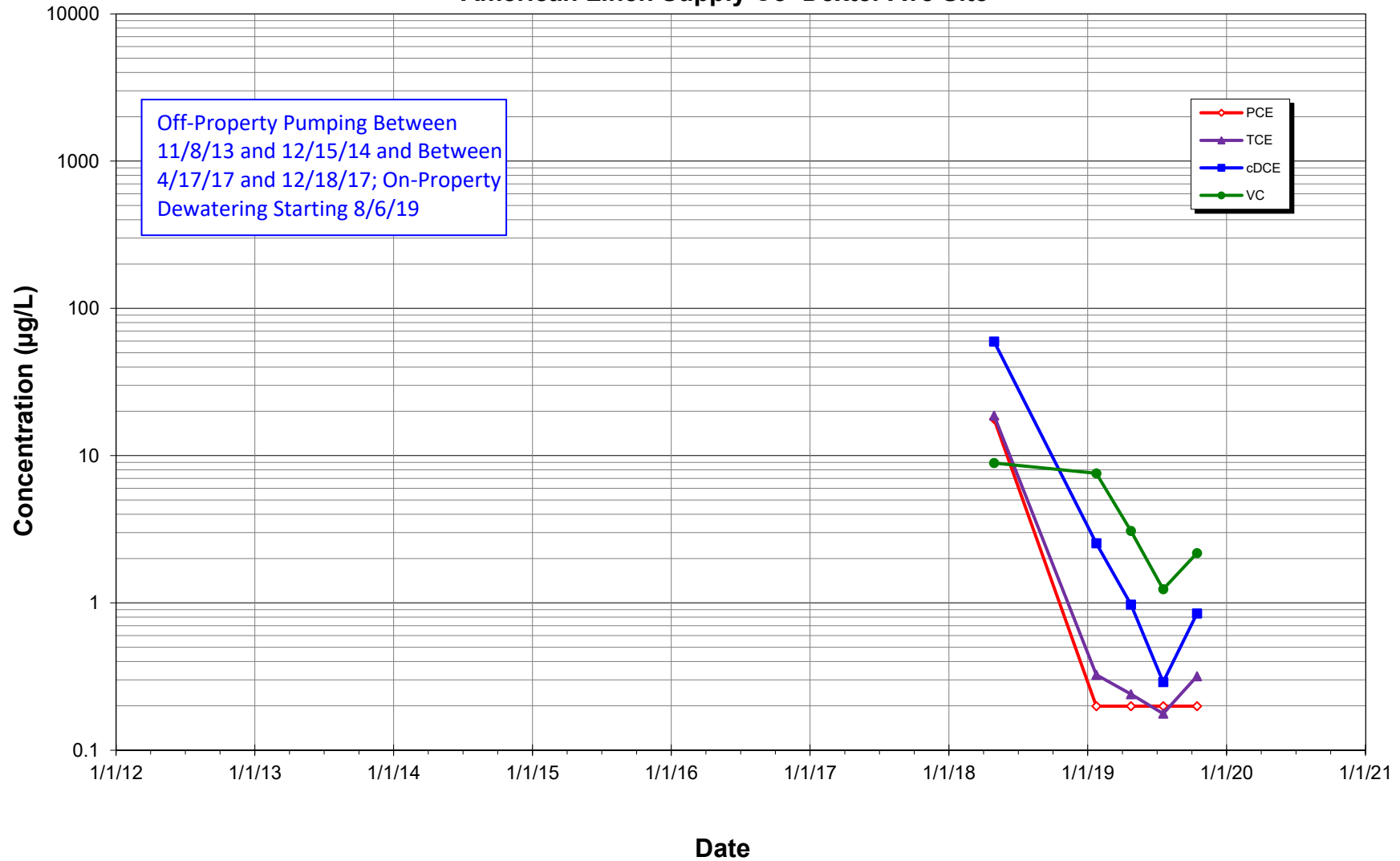
Concentration vs Time
MW-153 (-65.3 to -75.3 feet NAVD), Roy Street
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

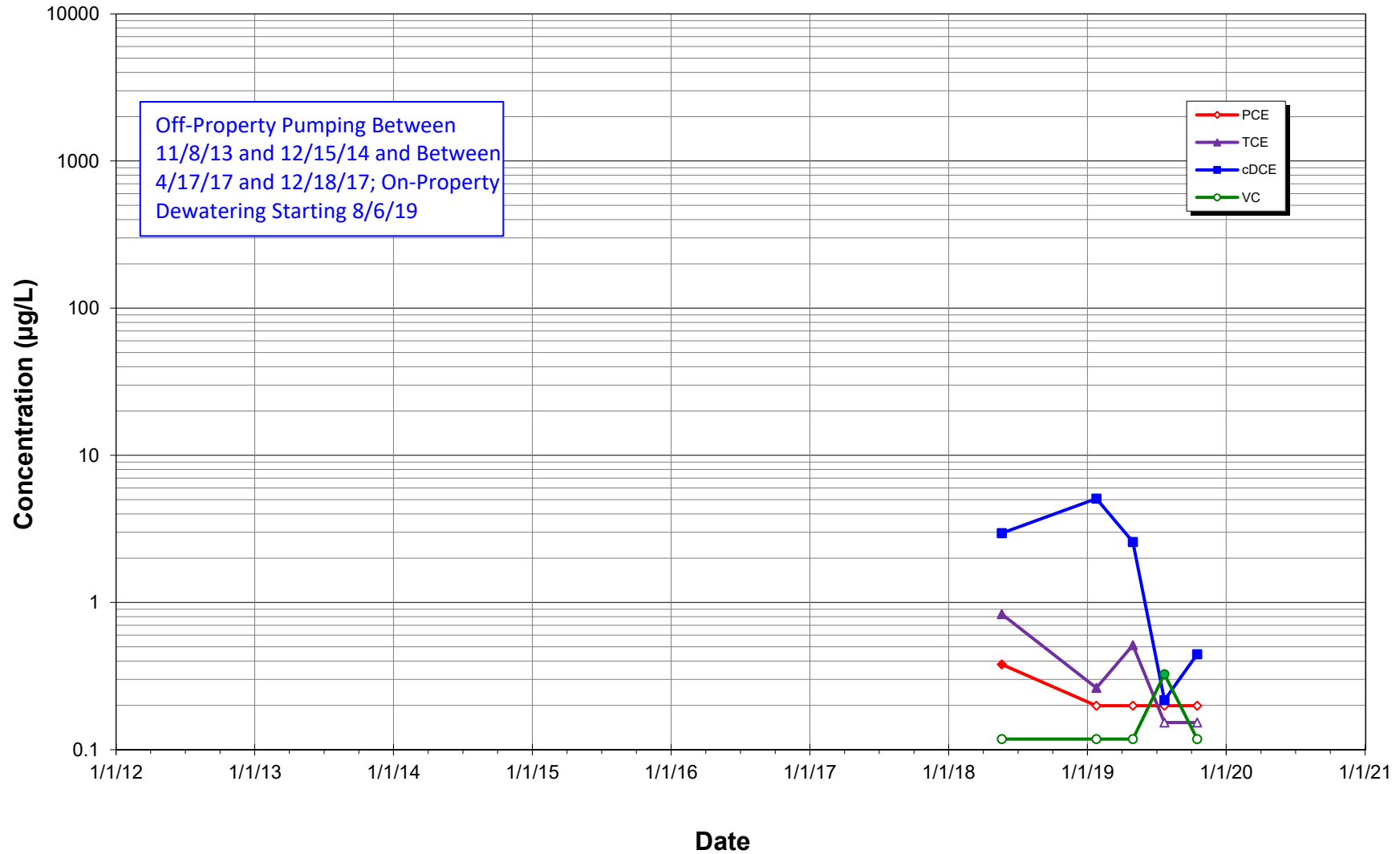
Concentration vs Time
MW-158A (-48.2 to -58.2 feet NAVD), 8th Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

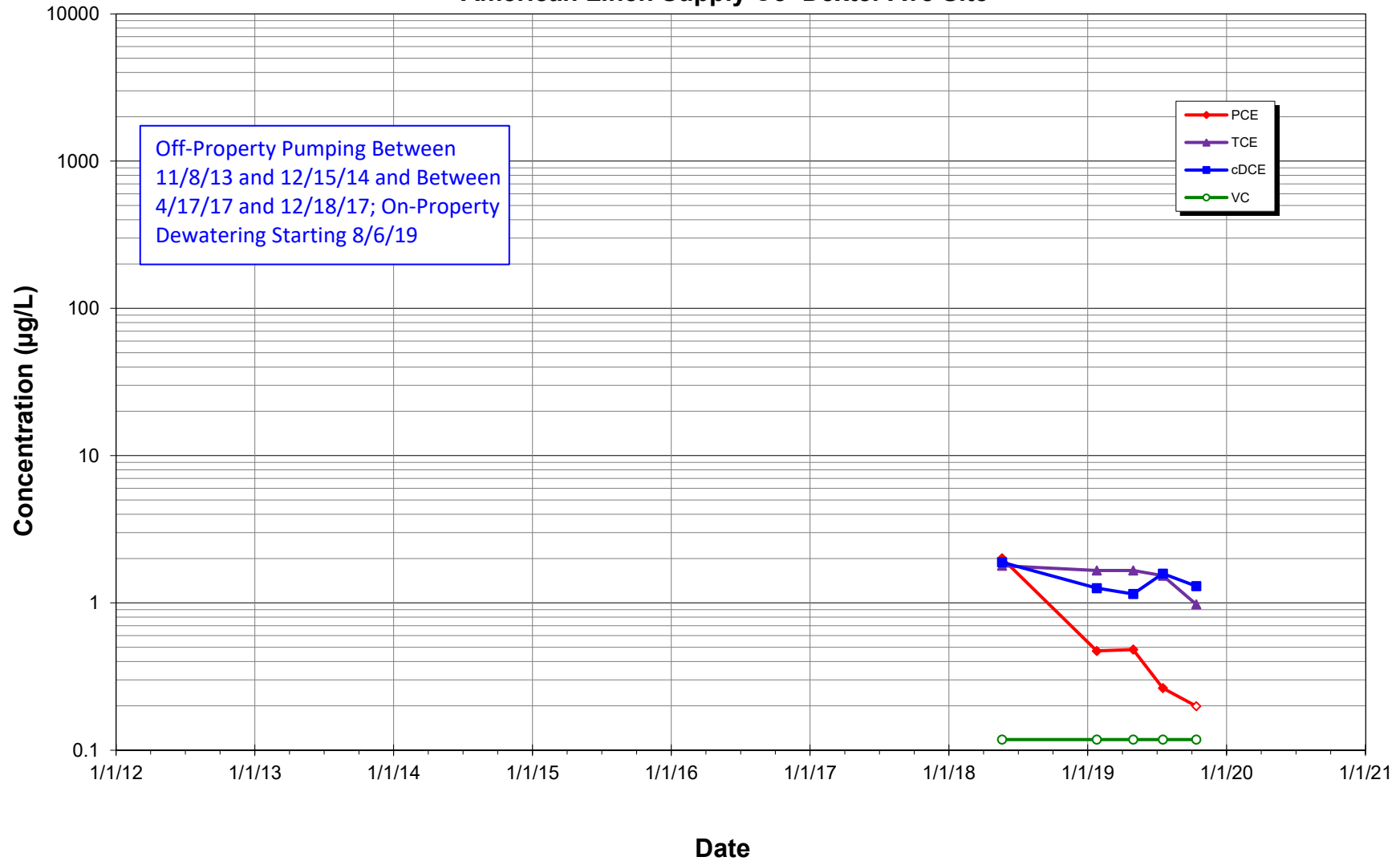
Concentration vs Time
MW-160 (-75.4 to -85.4 feet NAVD), 8th Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

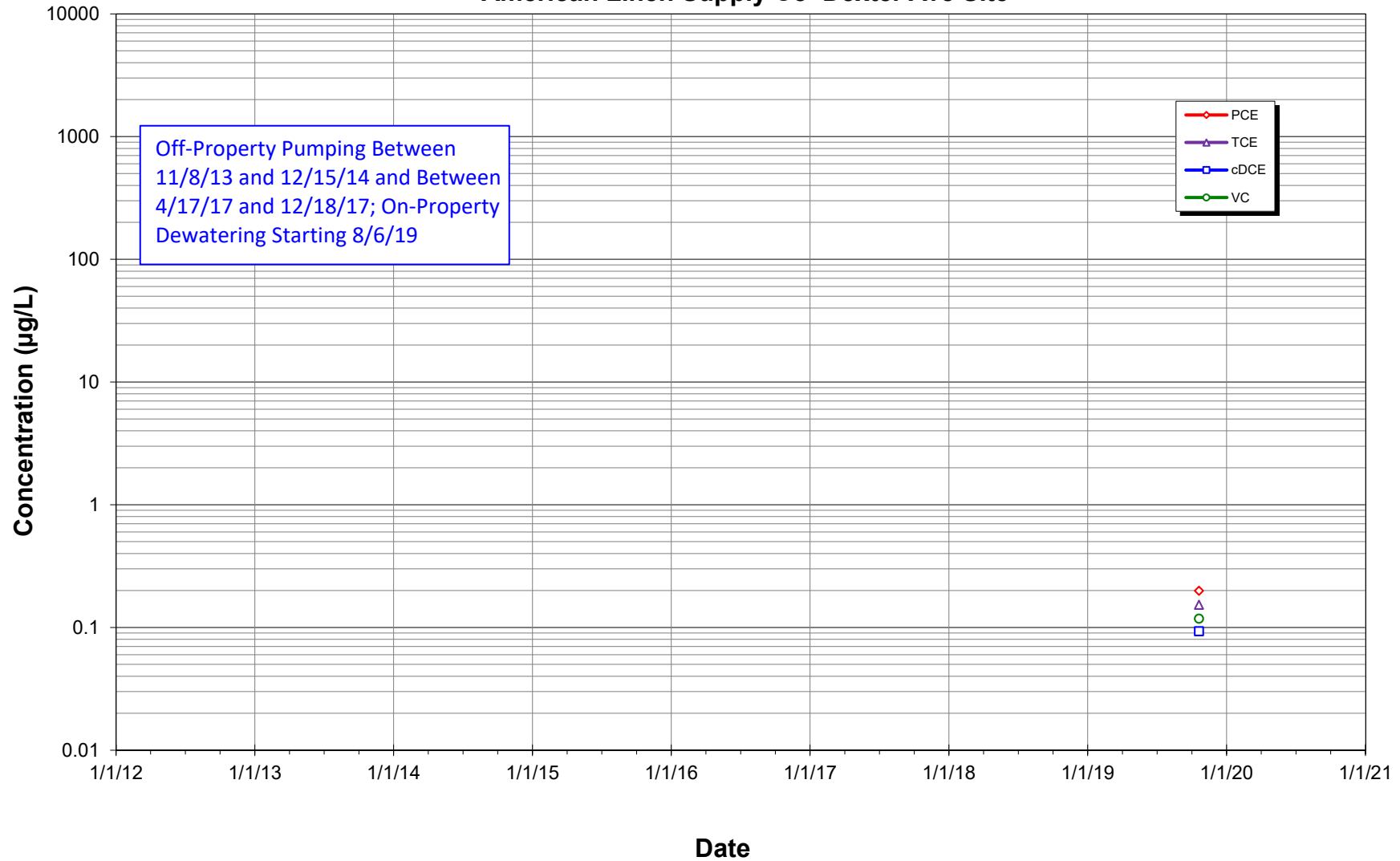
Concentration vs Time
MW-161 (-88.5 to -98.5 feet NAVD), 8th Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

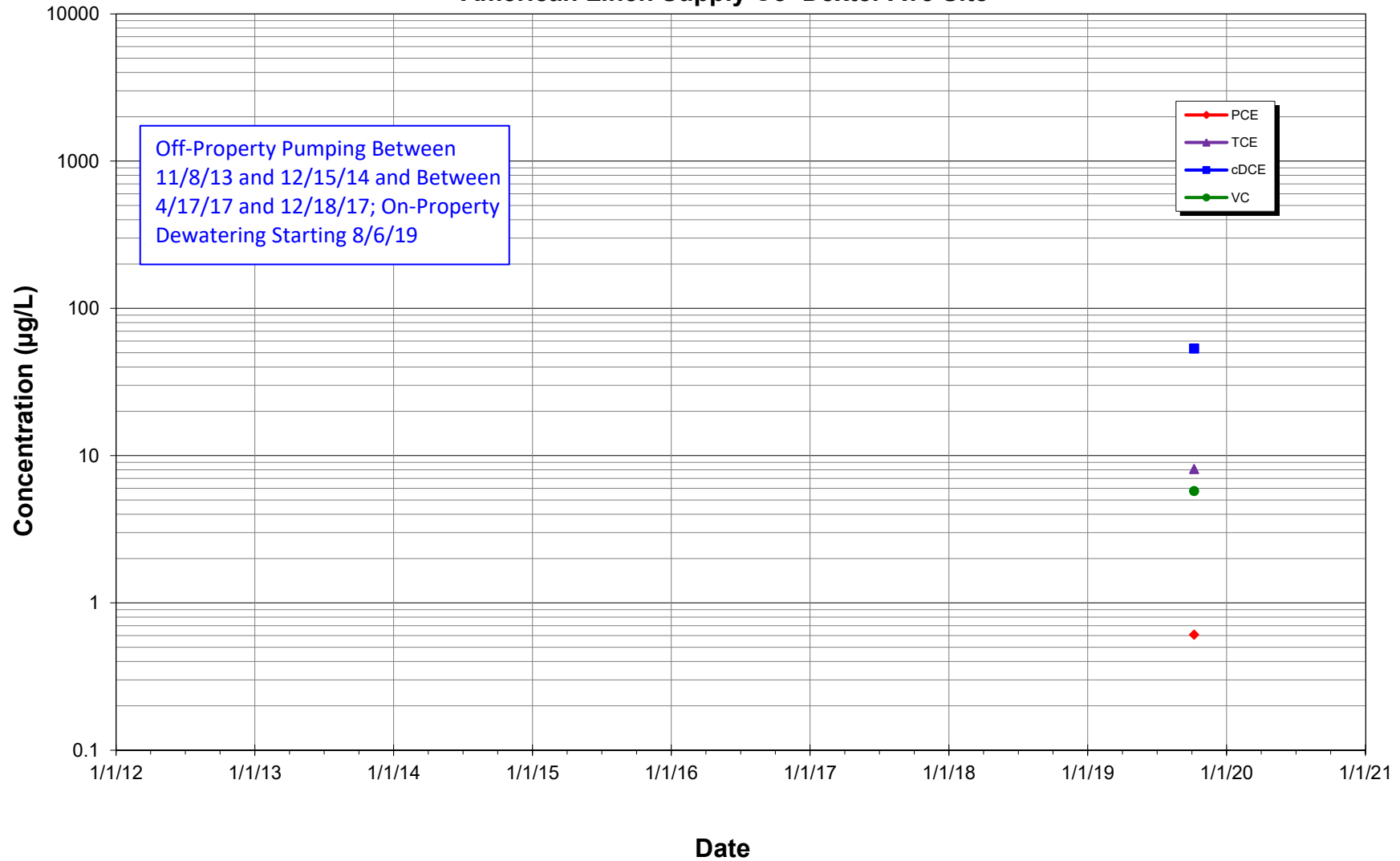
Concentration vs Time
MW-304 (-47.6 to -57.6 feet NAVD), Dexter Avenue North
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

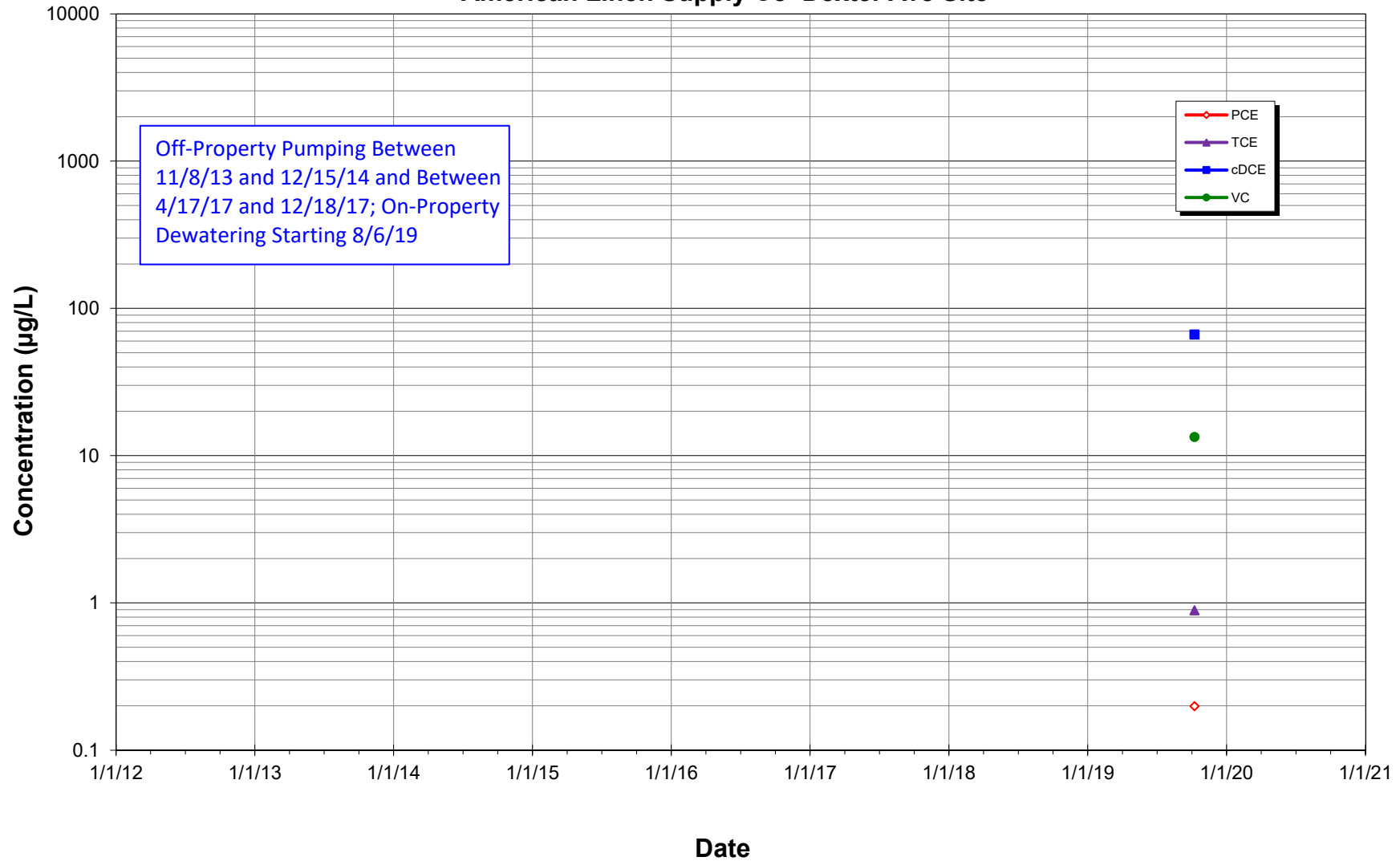
Concentration vs Time
MW-319 (-42.8 to -52.8 feet NAVD), 9th Avenue N
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

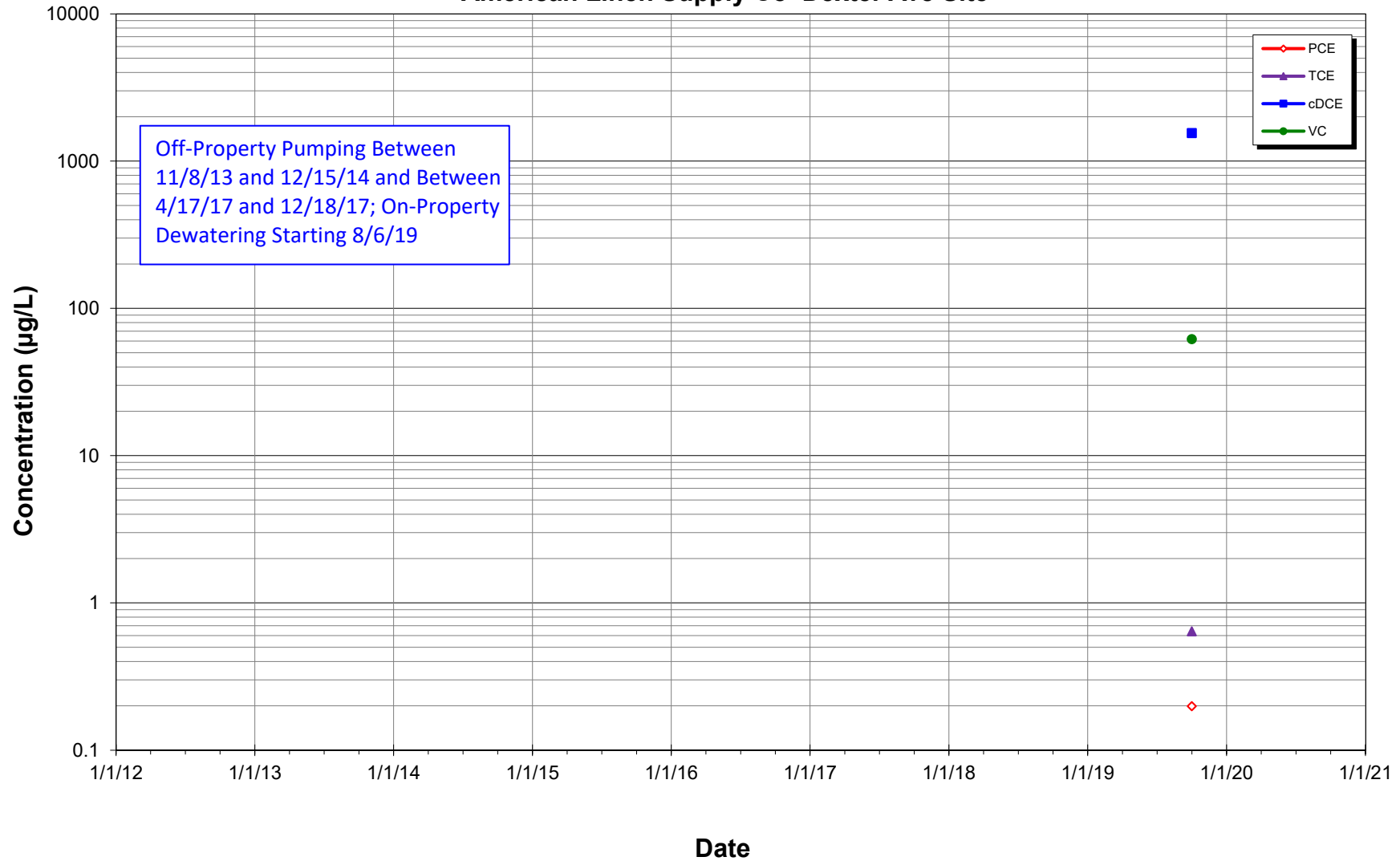
Concentration vs Time
MW-323 (-65.4 to -75.4 feet NAVD), 9th Avenue N
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

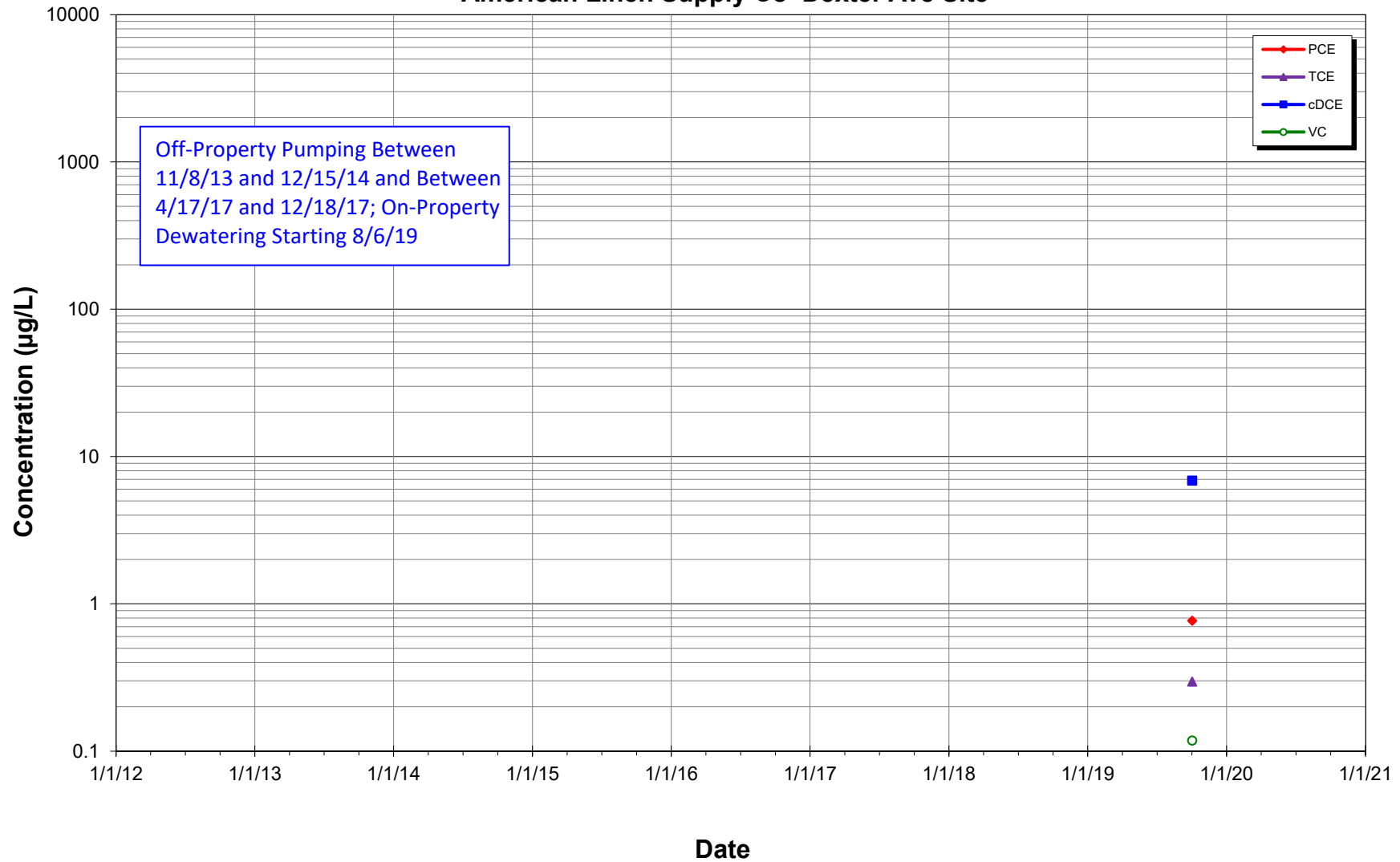
Concentration vs Time
MW-324 (-32.1 to -42.1 feet NAVD), 9th Avenue N
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

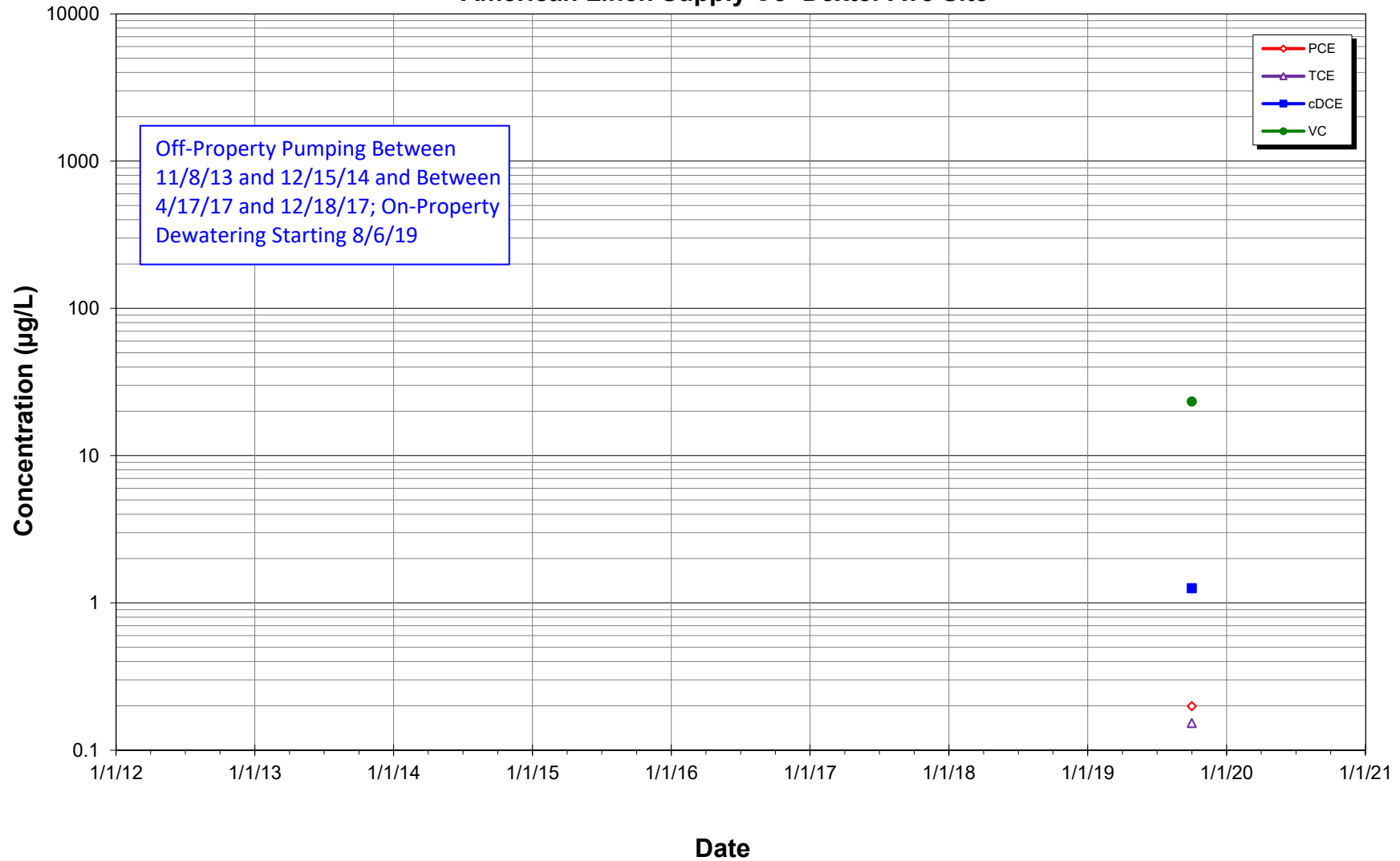
Concentration vs Time
MW-326 (-48.7 to -58.7 feet NAVD), Mercer Street
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

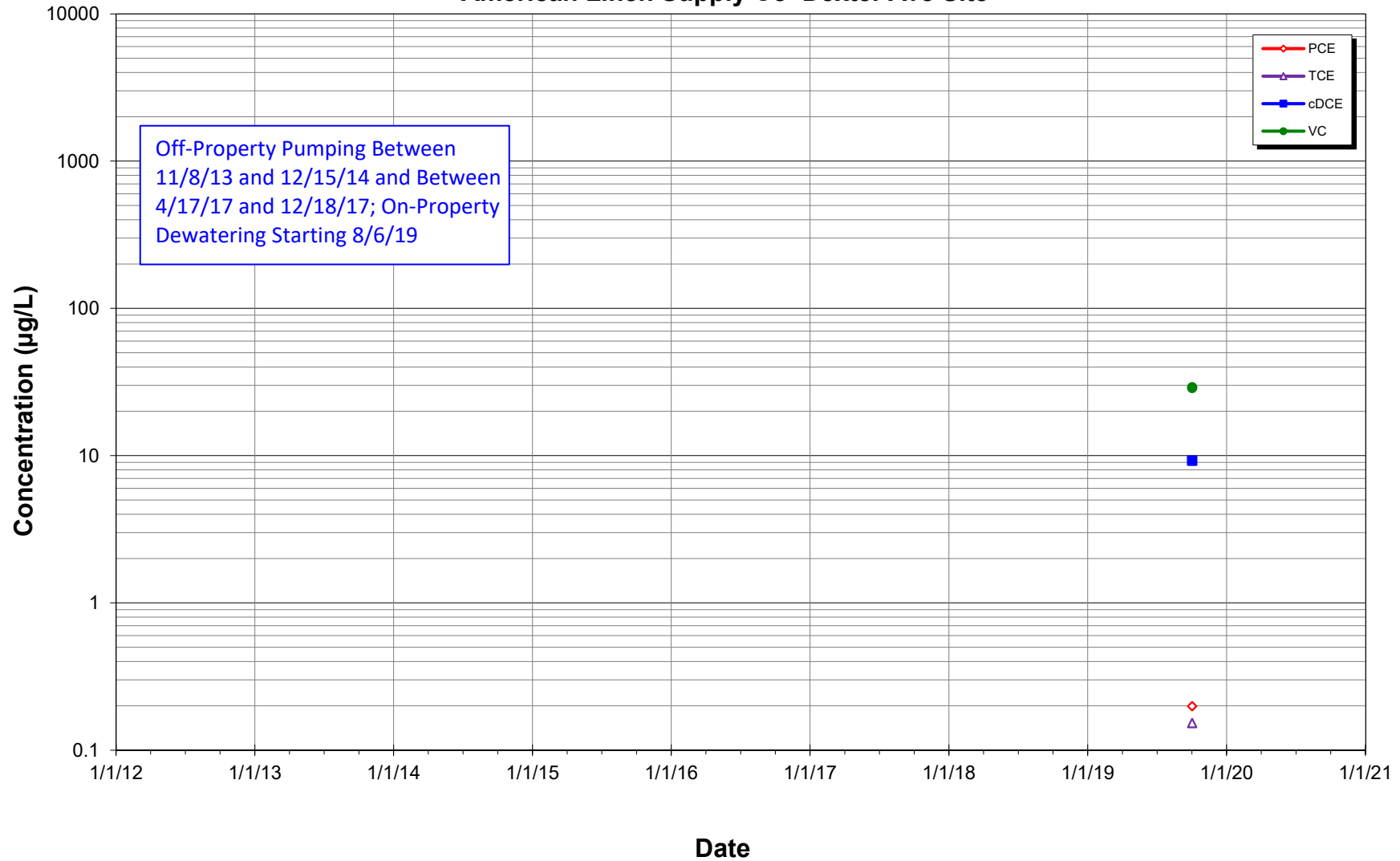
Concentration vs Time
MW-328 (-36.1 to -46.1 feet NAVD), East of Westlake Ave N
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

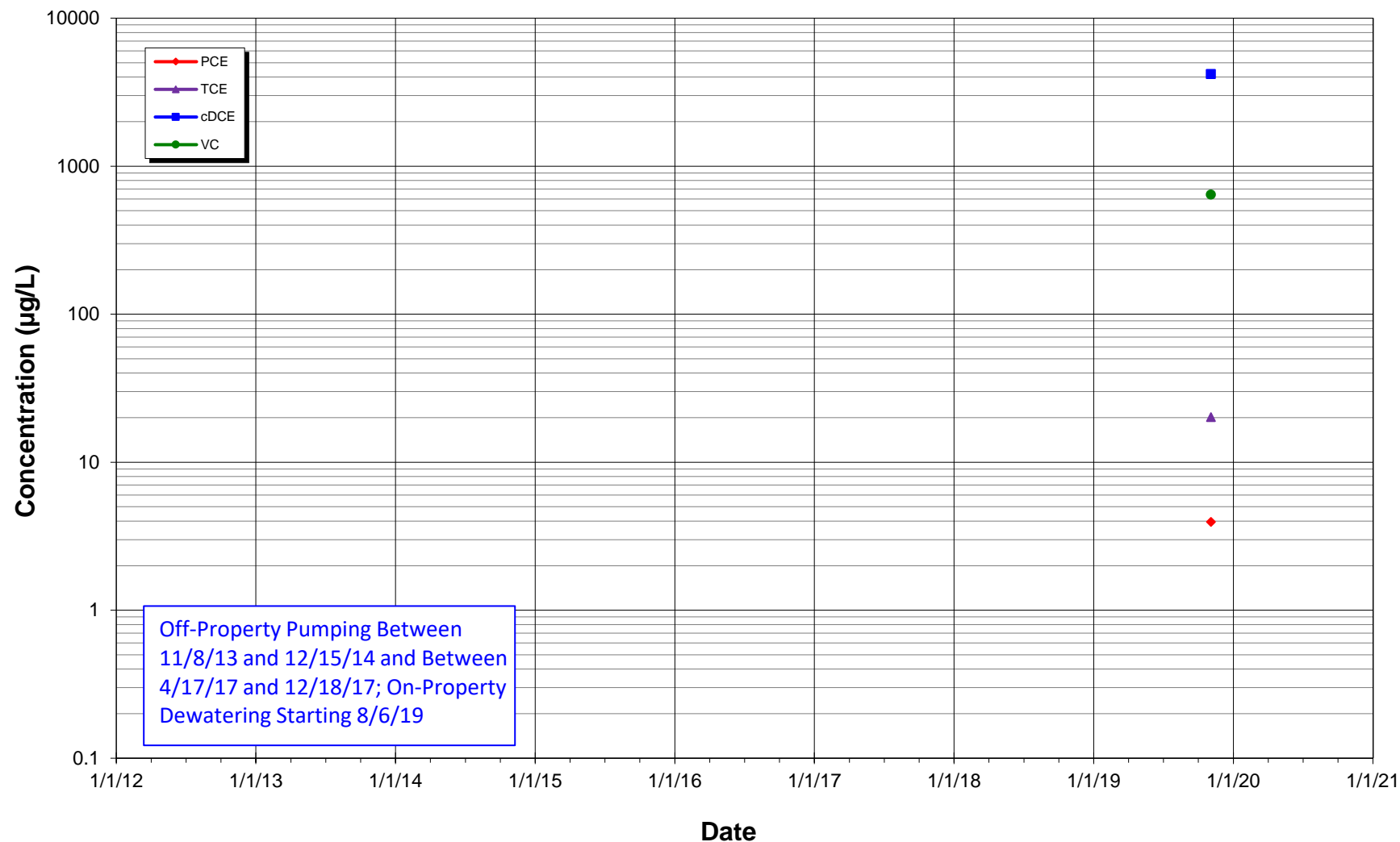
Concentration vs Time
MW-329 (-69.0 to -79.0 feet NAVD), East of Westlake Ave N
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

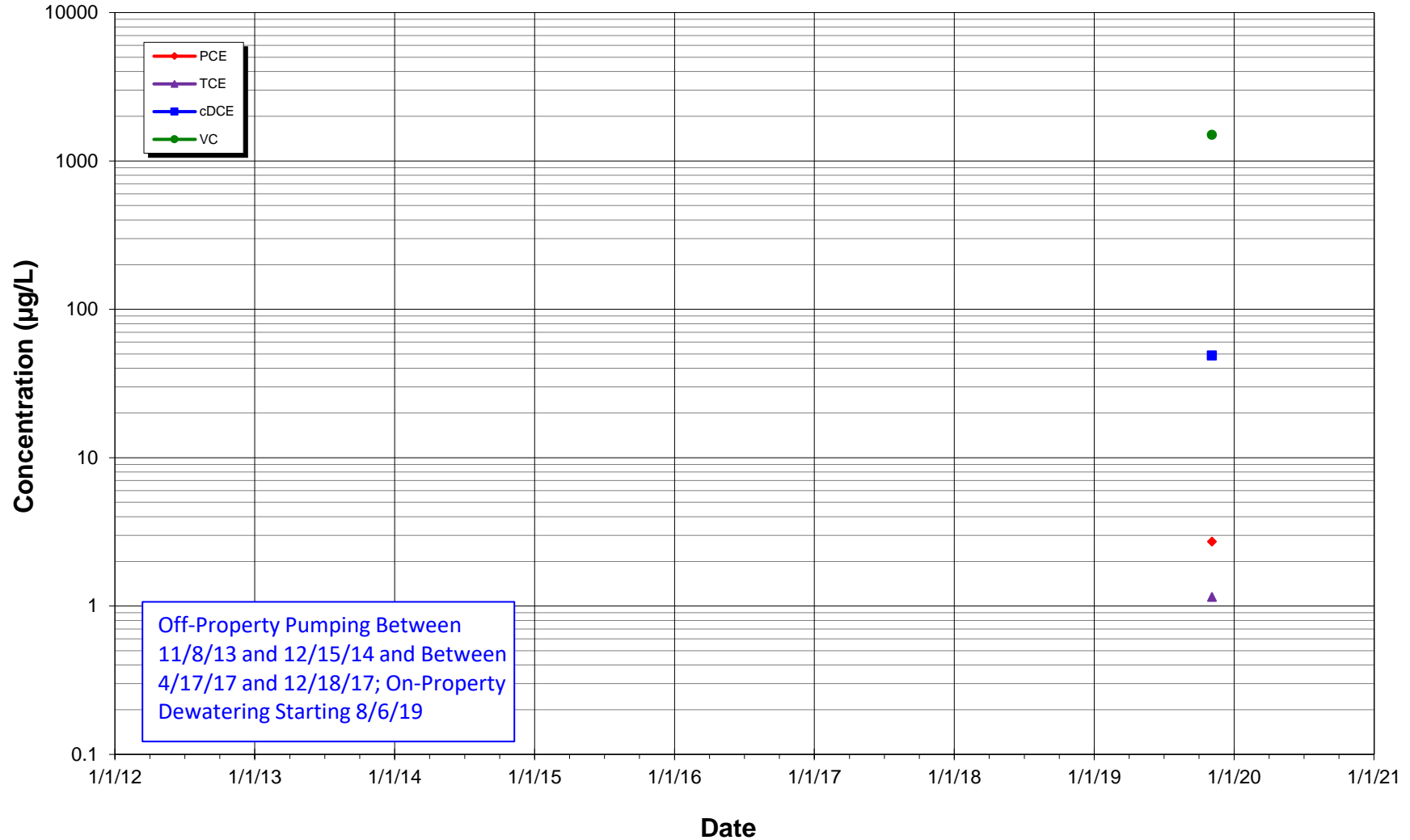
Concentration vs Time MW-165 (1.3 to -8.8 feet NAVD), Property, Treatment Zone A American Linen Supply Co-Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

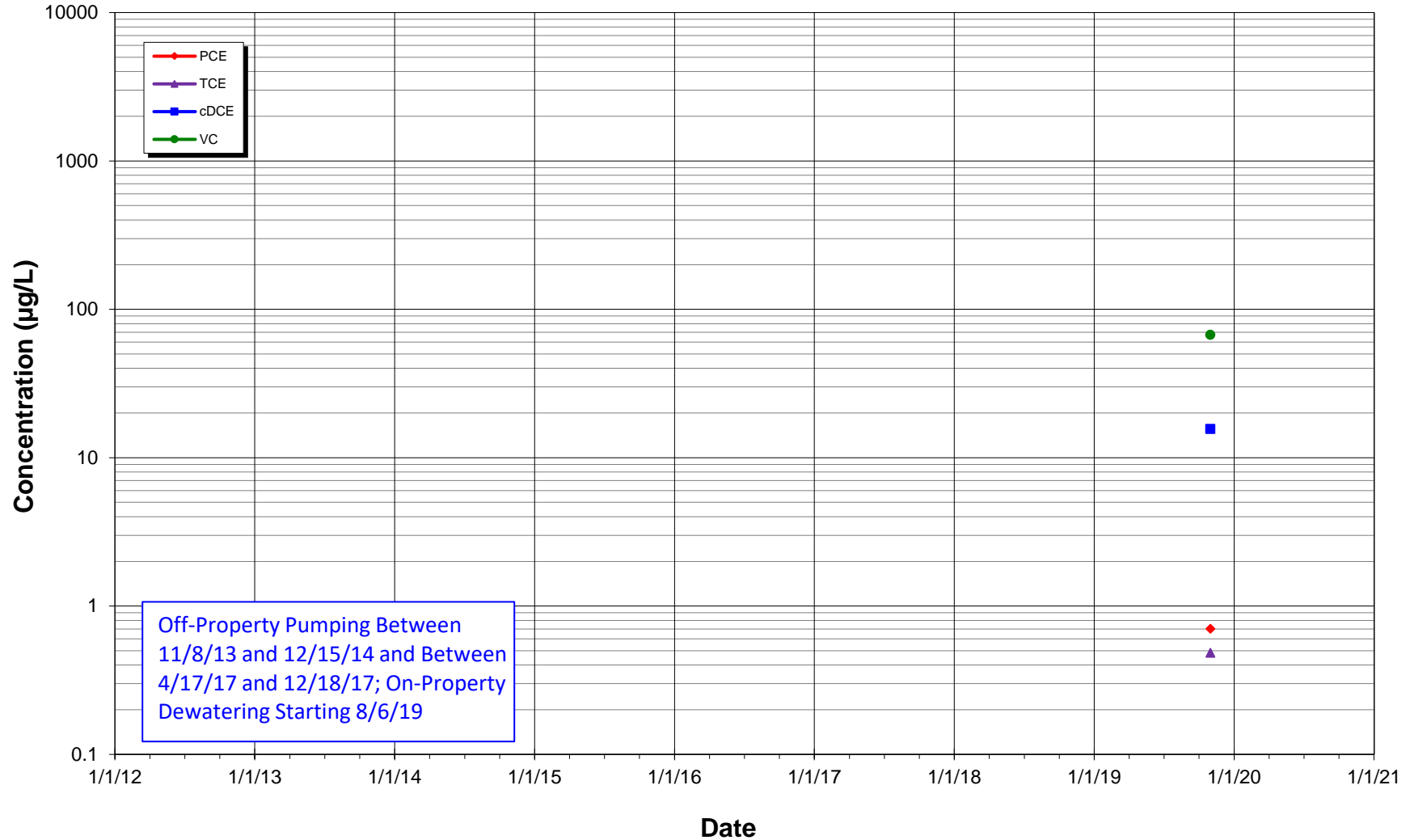
Concentration vs Time
MW-169 (1.2 to -8.8 feet NAVD), Property, Treatment Zone A
American Linen Supply Co-Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

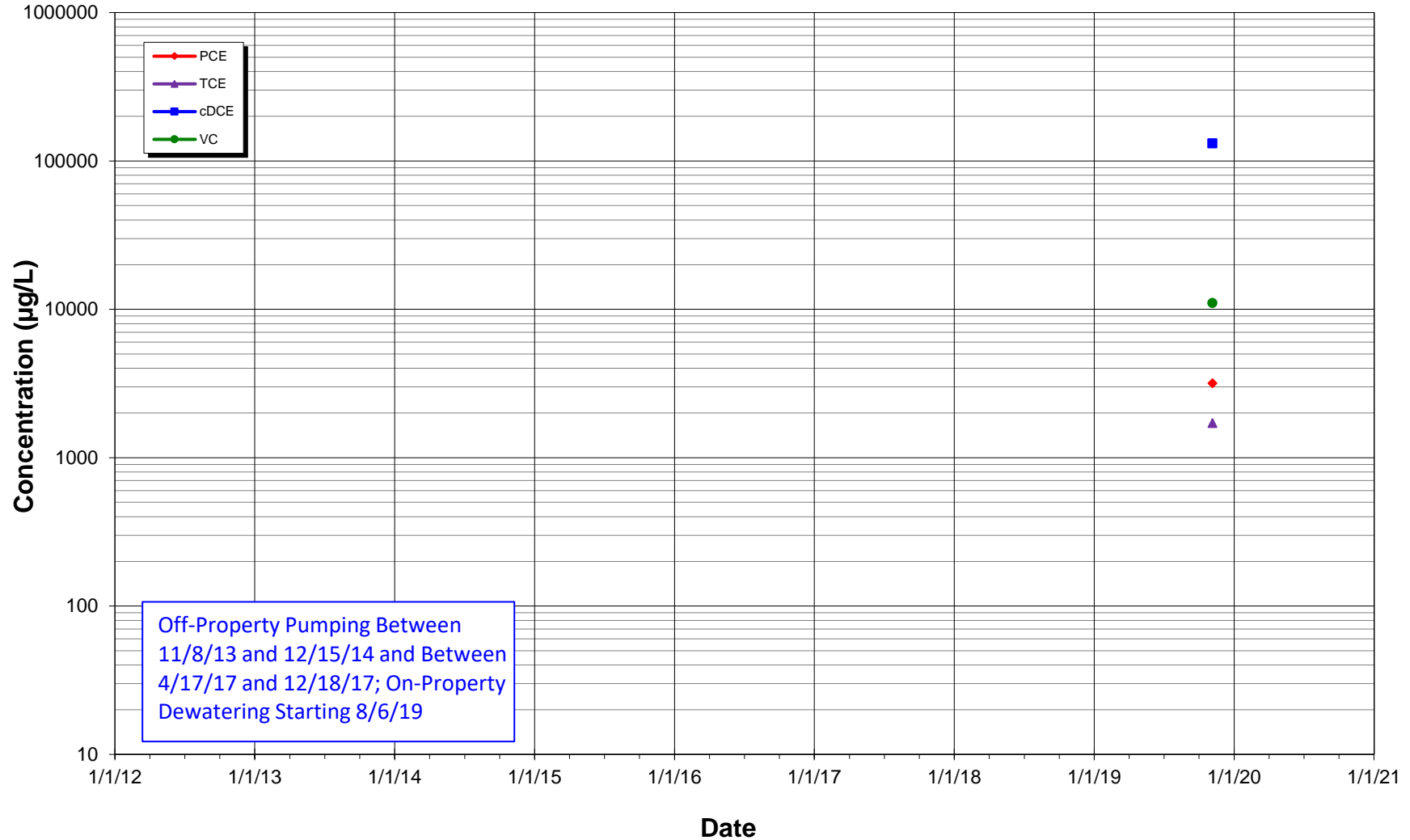
Concentration vs Time
MW-173 (2.2 to -7.8 feet NAVD), Property, Treatment Zone A
American Linen Supply Co-Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

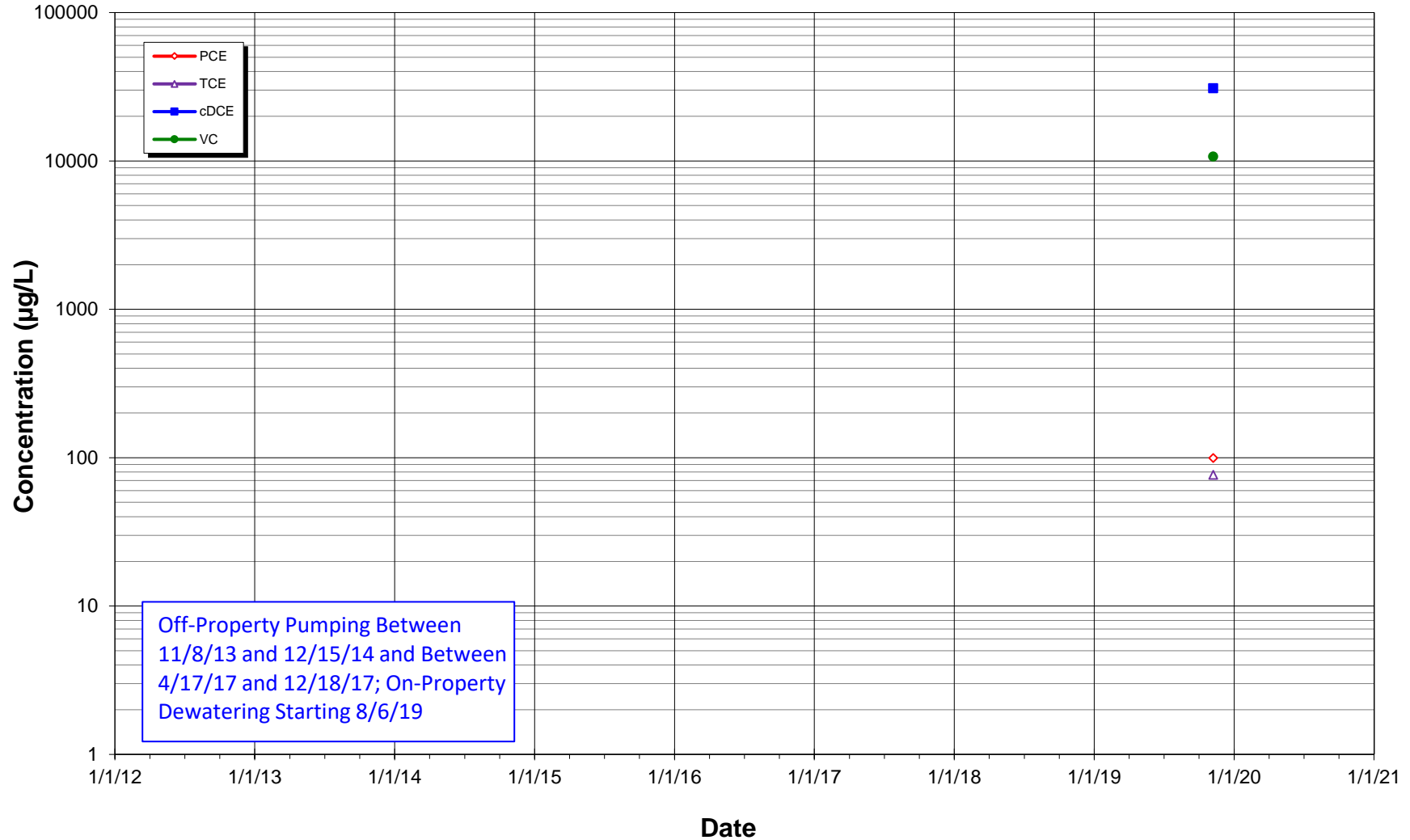
Concentration vs Time
MW-177 (2.3 to -7.7 feet NAVD), Property, Treatment Zone A
American Linen Supply Co-Dexter Ave Site



Off-Property Pumping Between 11/8/13 and 12/15/14 and Between 4/17/17 and 12/18/17; On-Property Dewatering Starting 8/6/19

- Notes:**
- 1) All results detected below the laboratory MDLs are shown as hollow data points .
 - 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

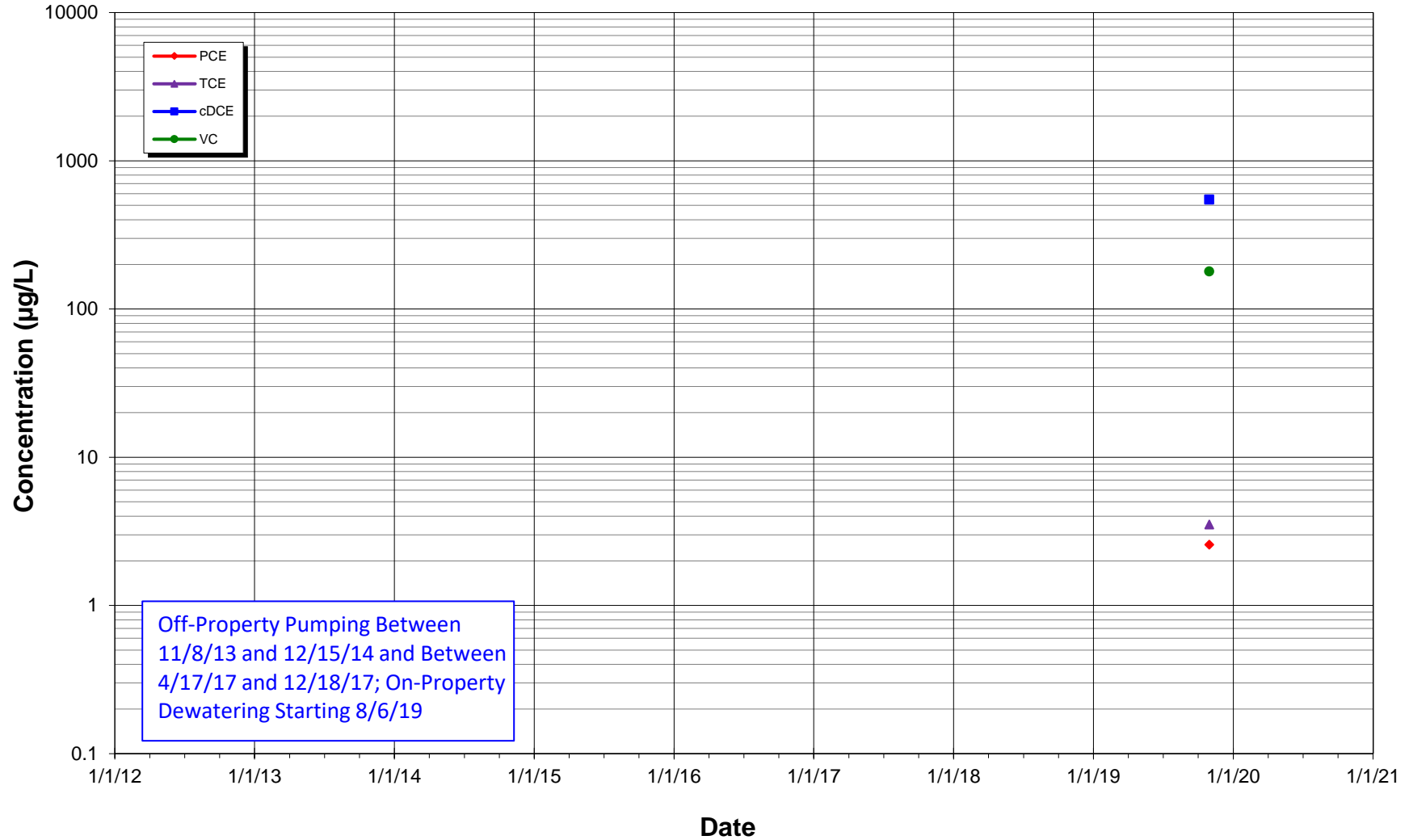
Concentration vs Time
MW-181 (1.5 to -8.5 feet NAVD), Property, Treatment Zone A
American Linen Supply Co-Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

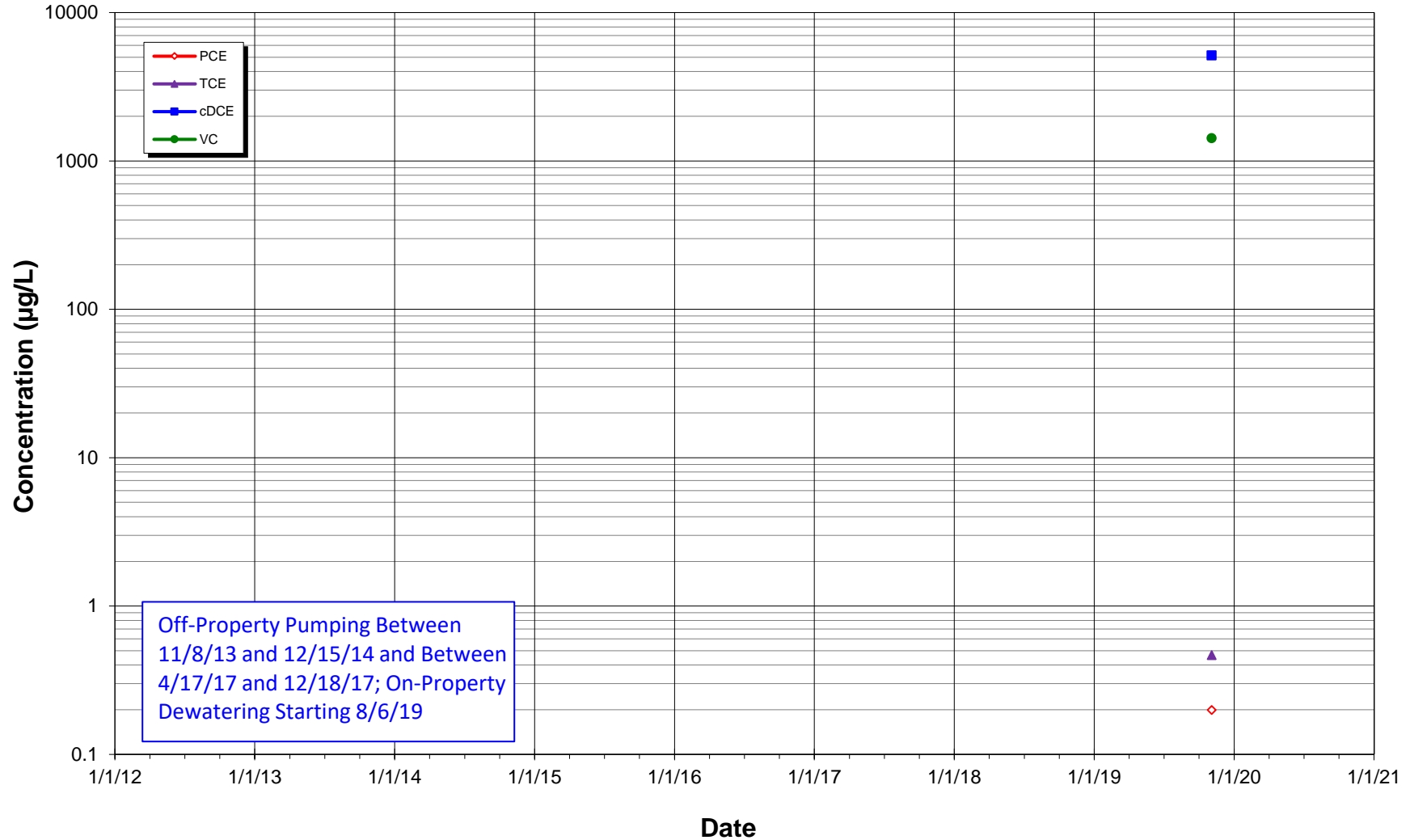
Concentration vs Time
MW-185 (1.4 to -8.7 feet NAVD), Property, Treatment Zone A
American Linen Supply Co-Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

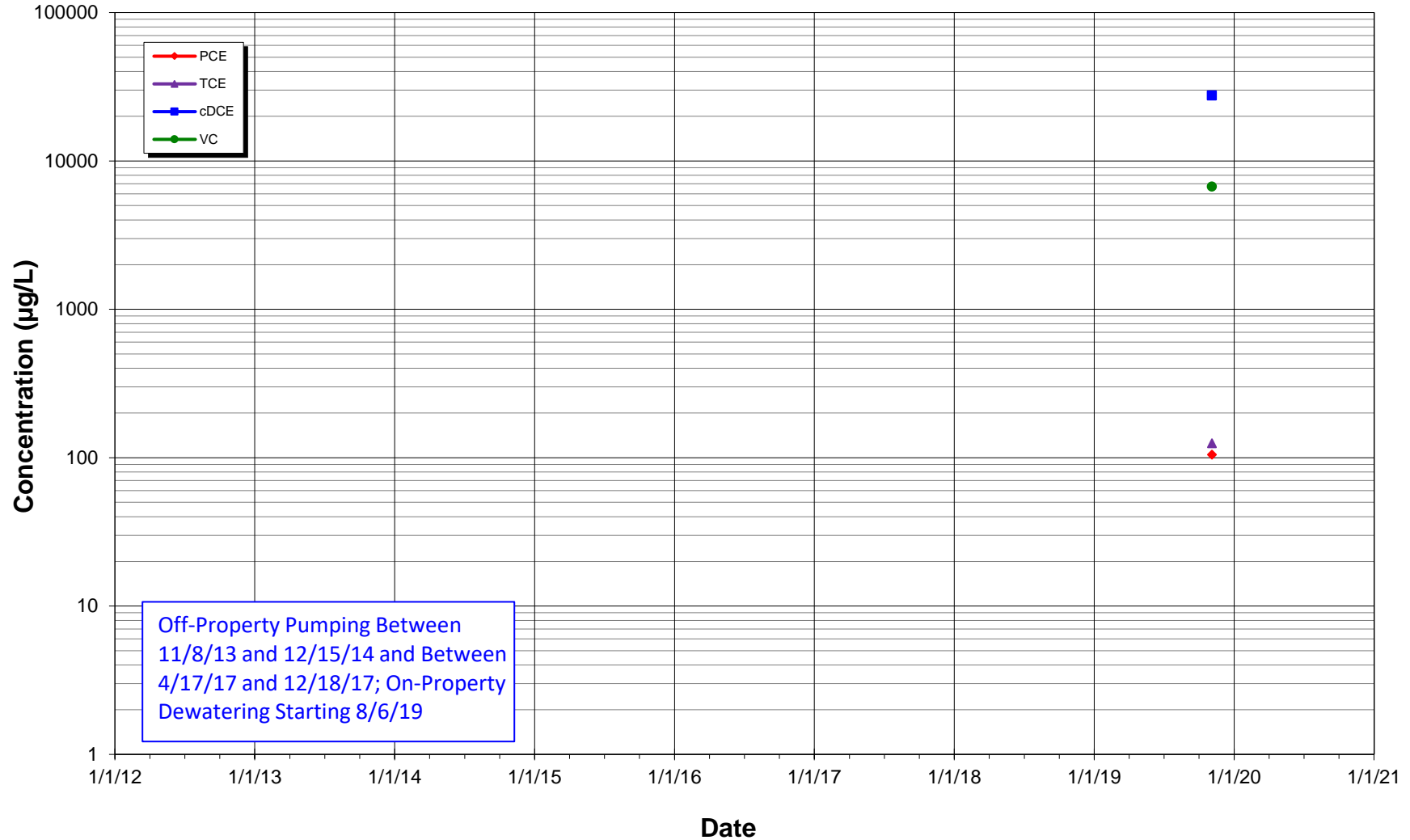
Concentration vs Time
MW-166 (-12.6 to -22.6 feet NAVD), Property, Treatment Zone B
American Linen Supply Co-Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

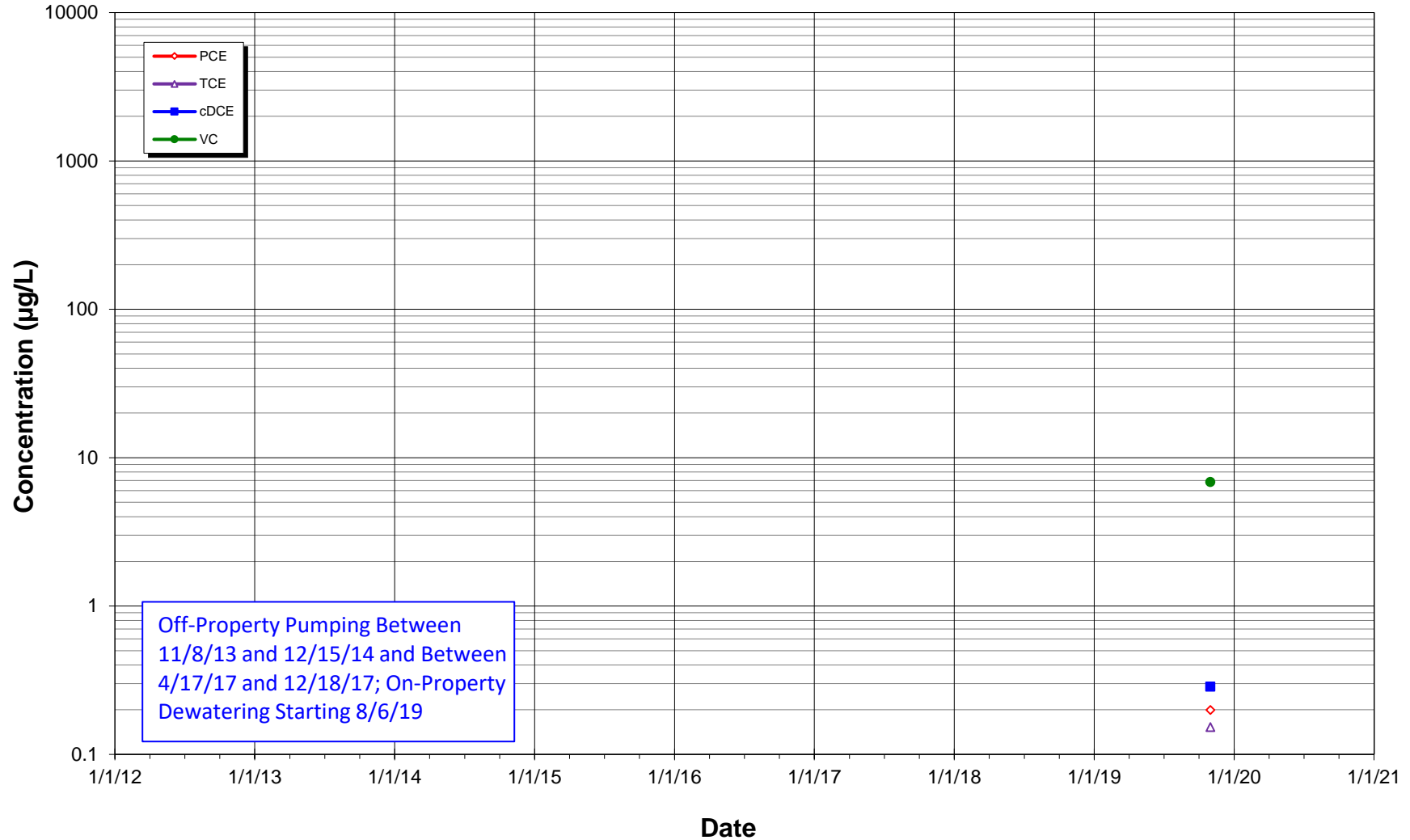
Concentration vs Time
MW-170 (-12.8 to -22.8 feet NAVD), Property, Treatment Zone B
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

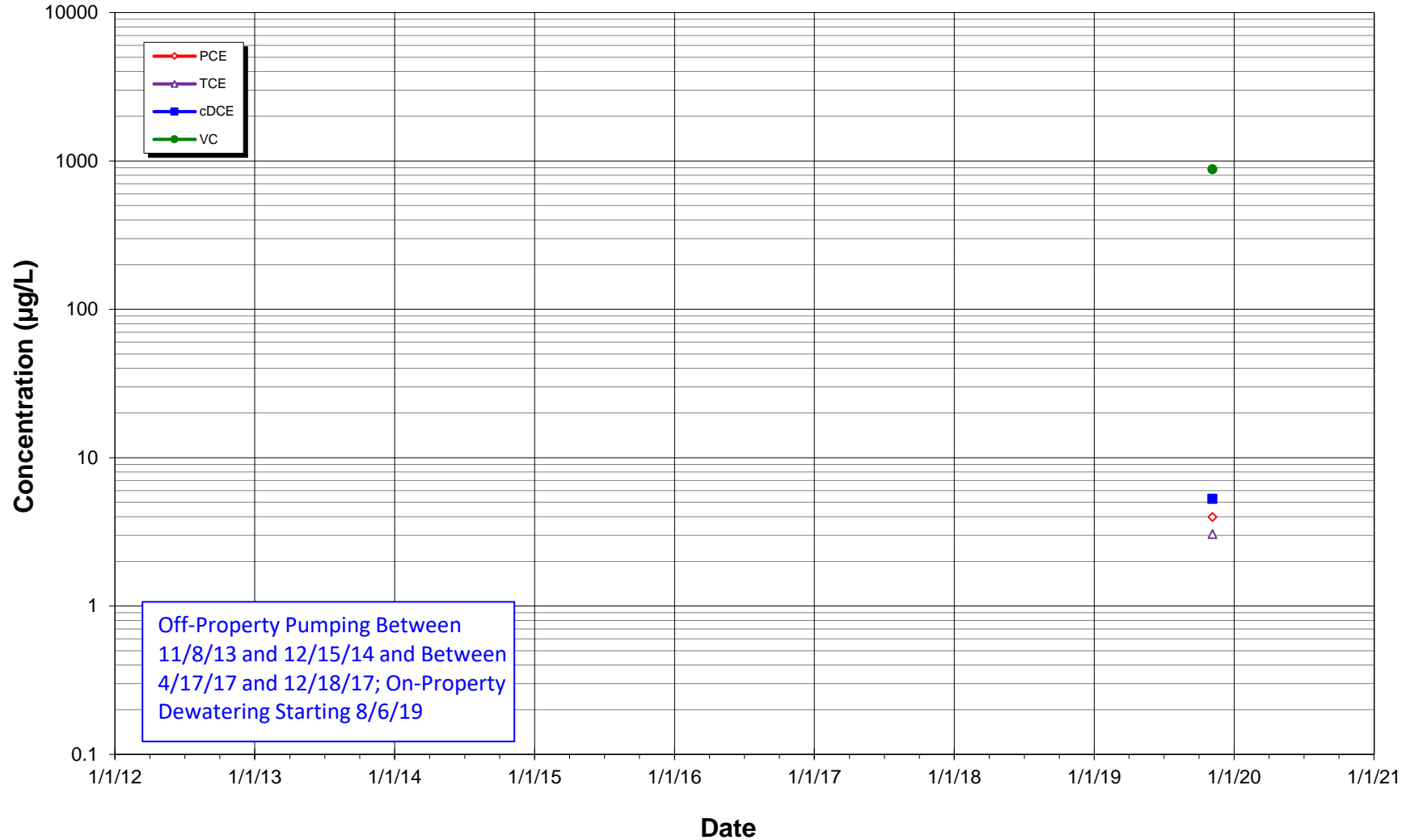
Concentration vs Time
MW-174 (-12.3 to -22.3 feet NAVD), Property, Treatment Zone B
American Linen Supply Co-Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

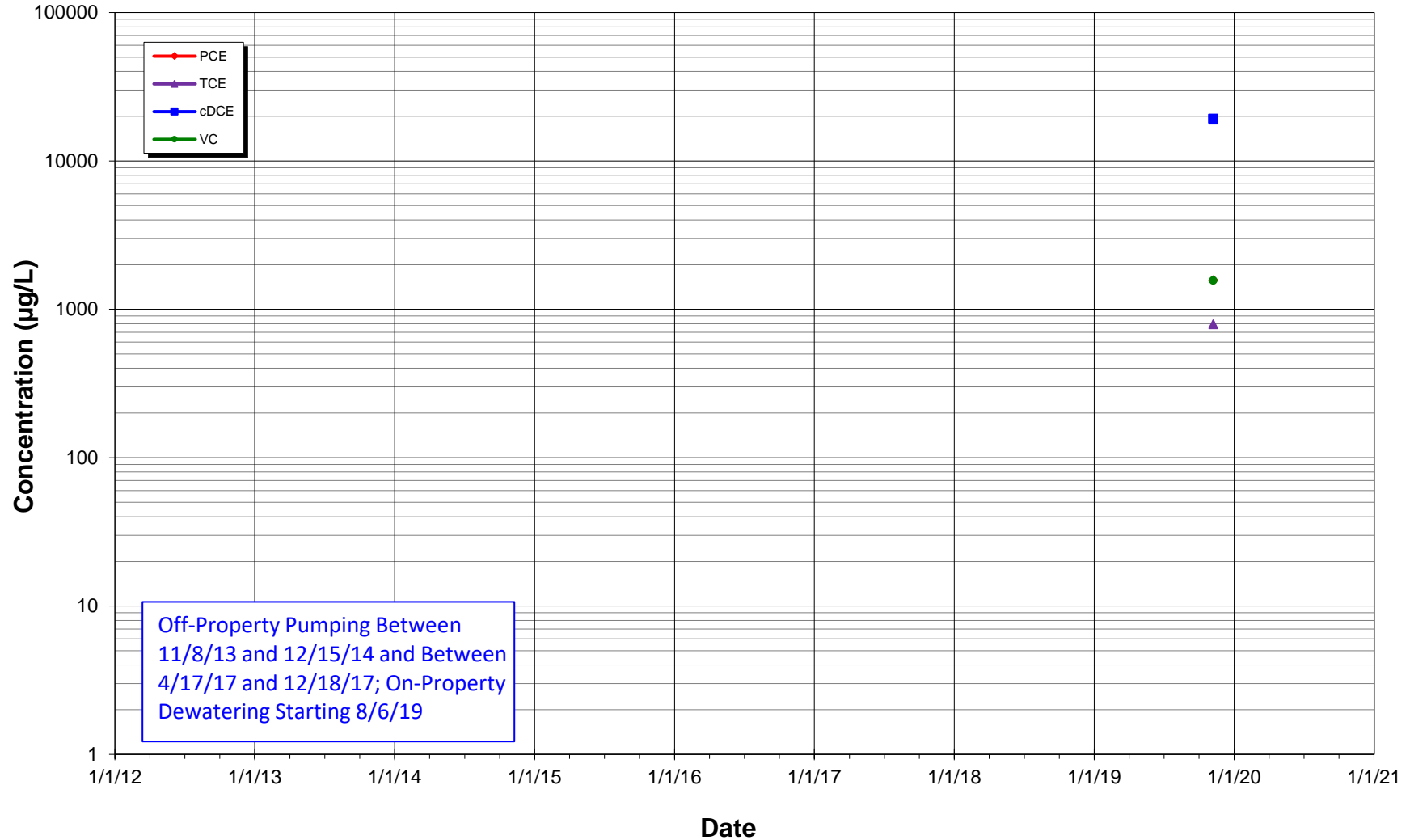
Concentration vs Time
MW-178 (-11.7 to -21.7 feet NAVD), Property, Treatment Zone B
American Linen Supply Co-Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

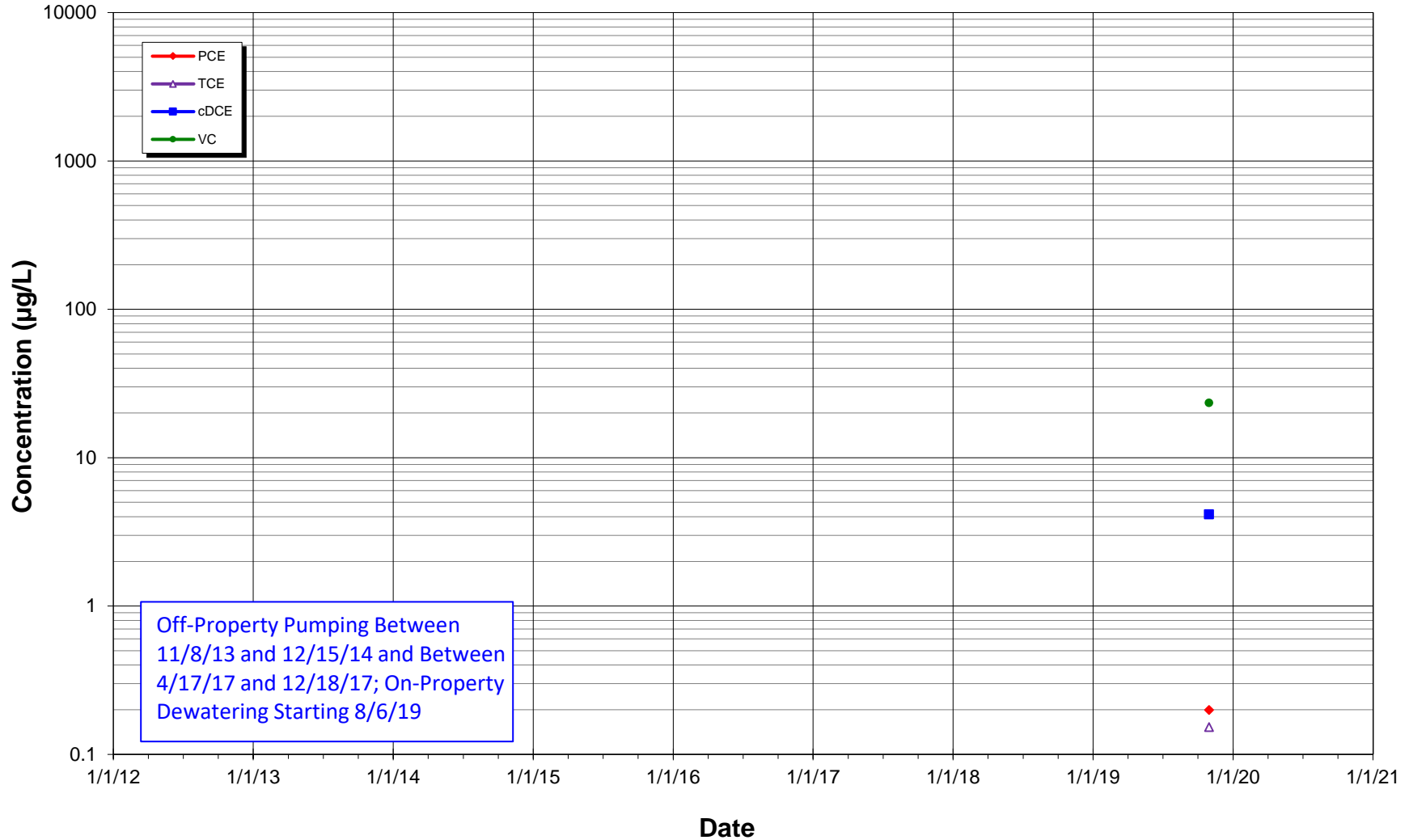
Concentration vs Time
MW-182 (-12.5 to -22.5 feet NAVD), Property, Treatment Zone B
American Linen Supply Co-Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

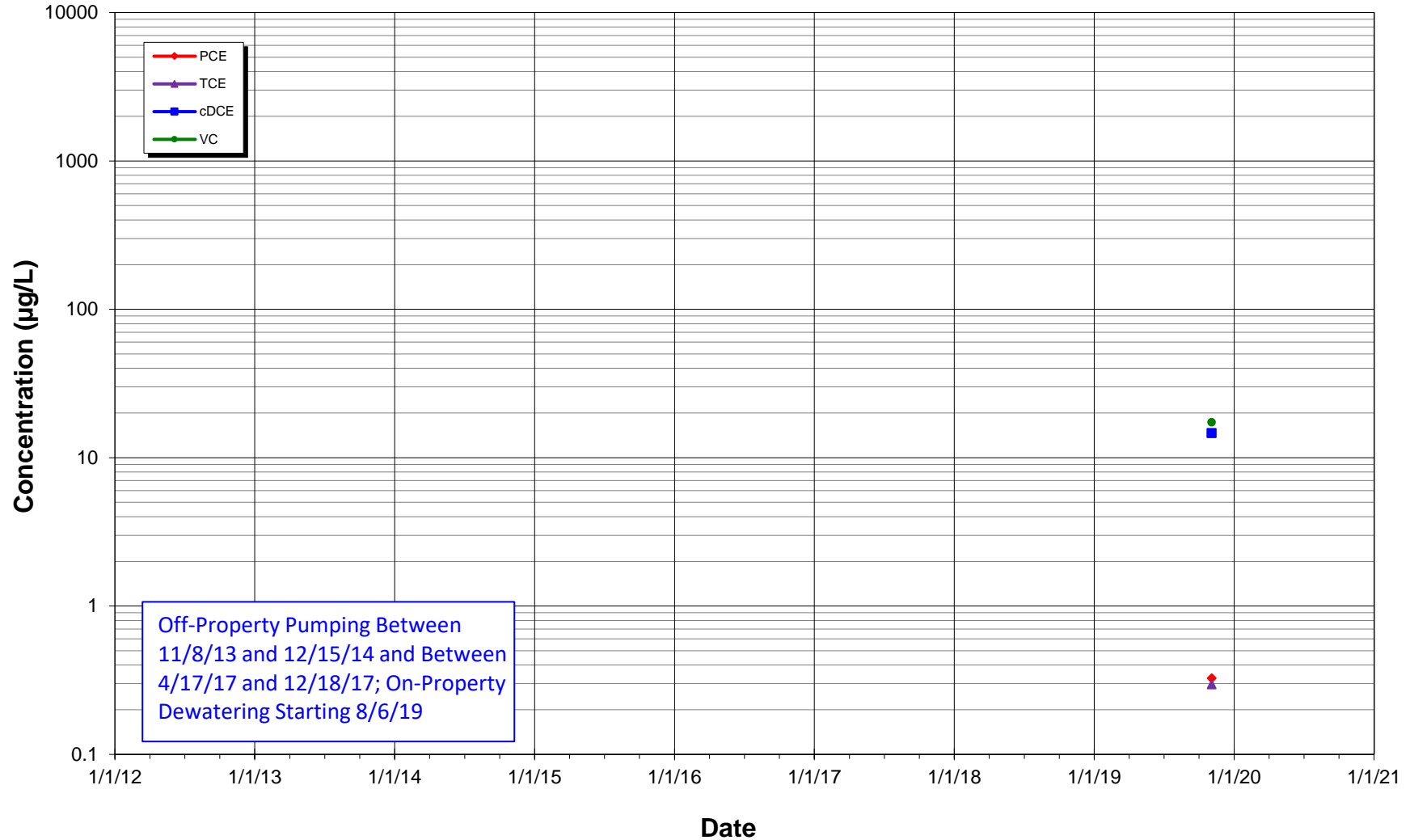
Concentration vs Time
MW-186 (-12.7 to -22.7 feet NAVD), Property, Treatment Zone B
American Linen Supply Co-Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

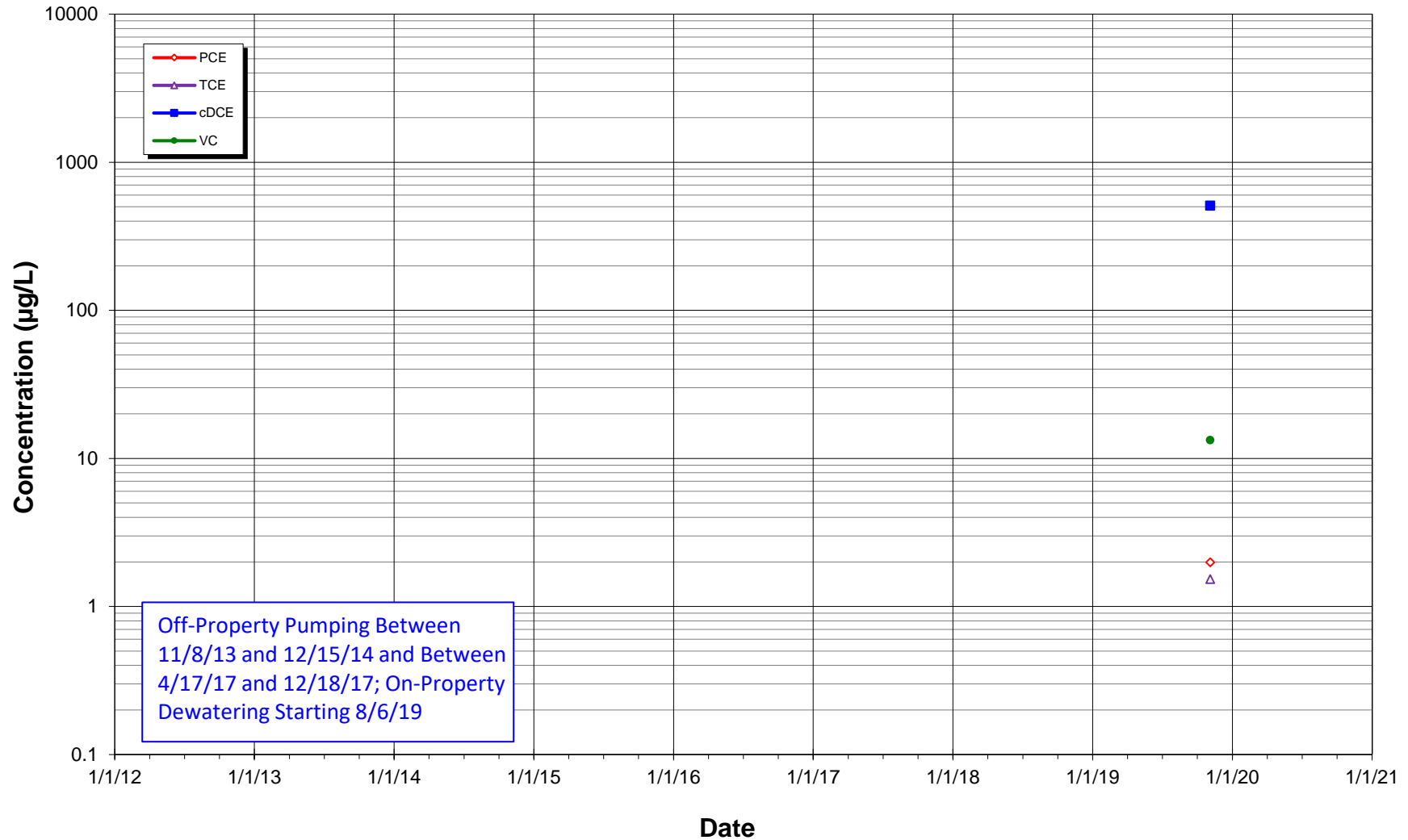
Concentration vs Time
MW-167 (-27.9 to -37.9 feet NAVD), Property, Treatment Zone C
American Linen Supply Co-Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

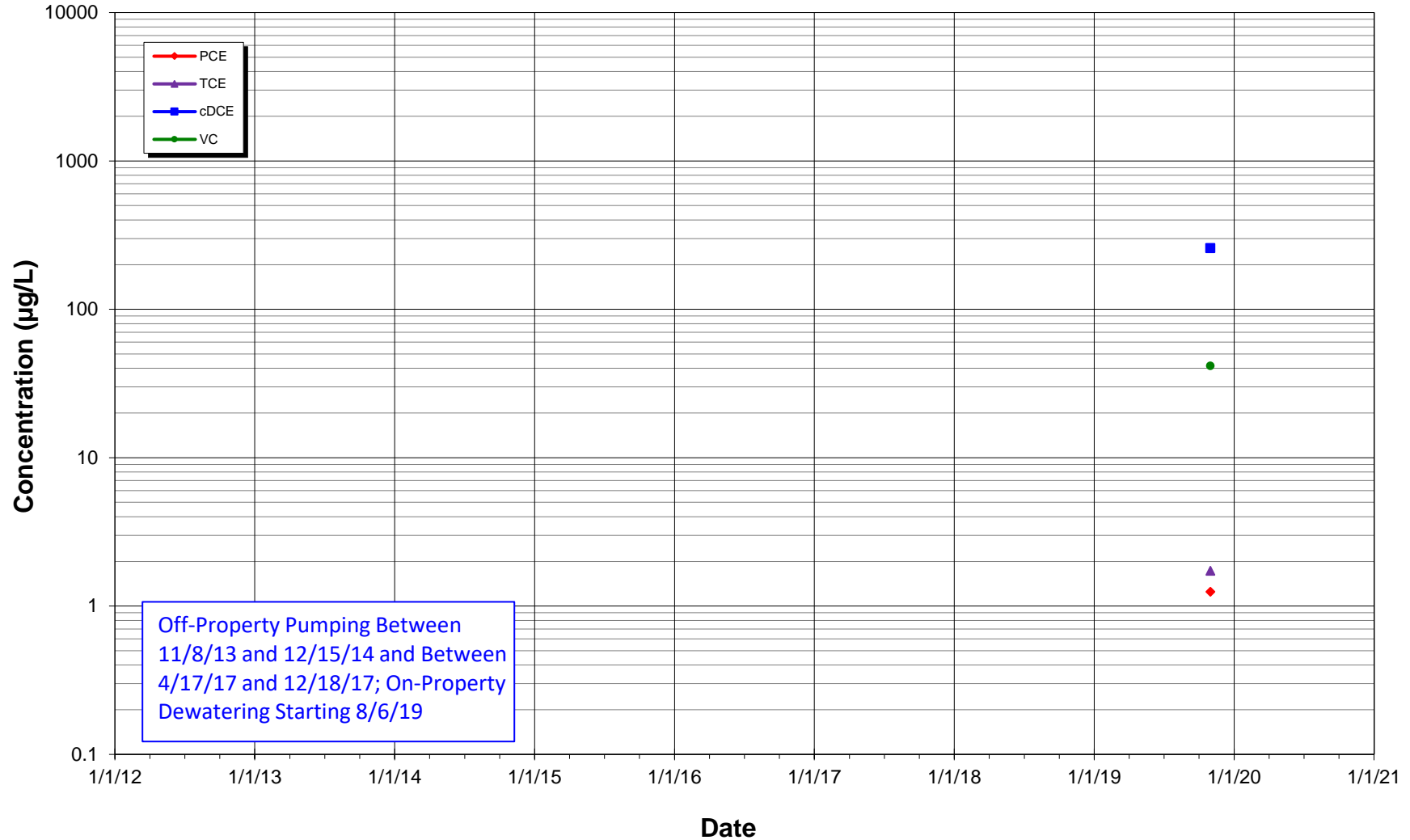
Concentration vs Time
MW-171 (-27.6 to -37.6 feet NAVD), Property, Treatment Zone C
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

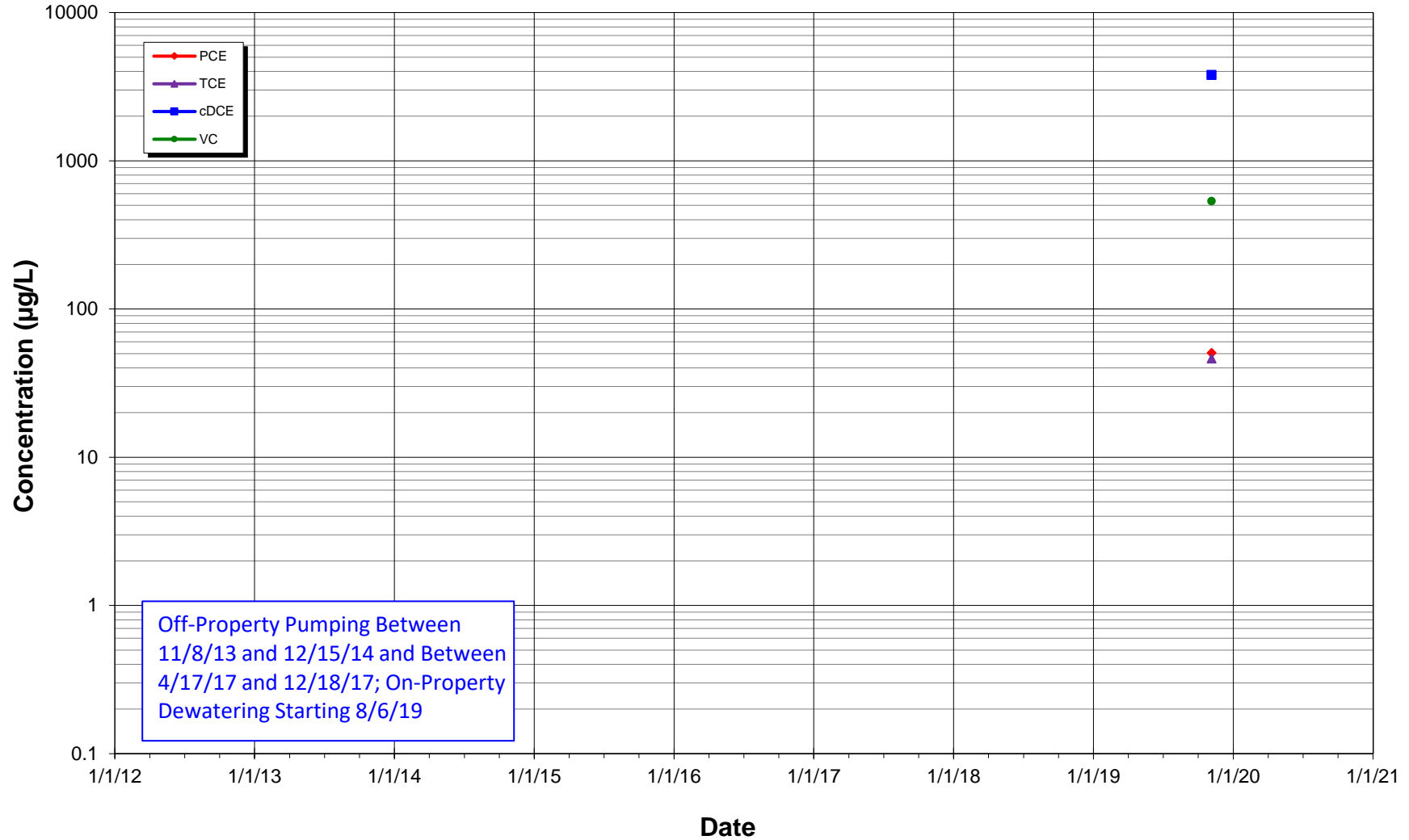
Concentration vs Time
MW-171 (-27.8 to -37.8 feet NAVD), Property, Treatment Zone C
American Linen Supply Co-Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

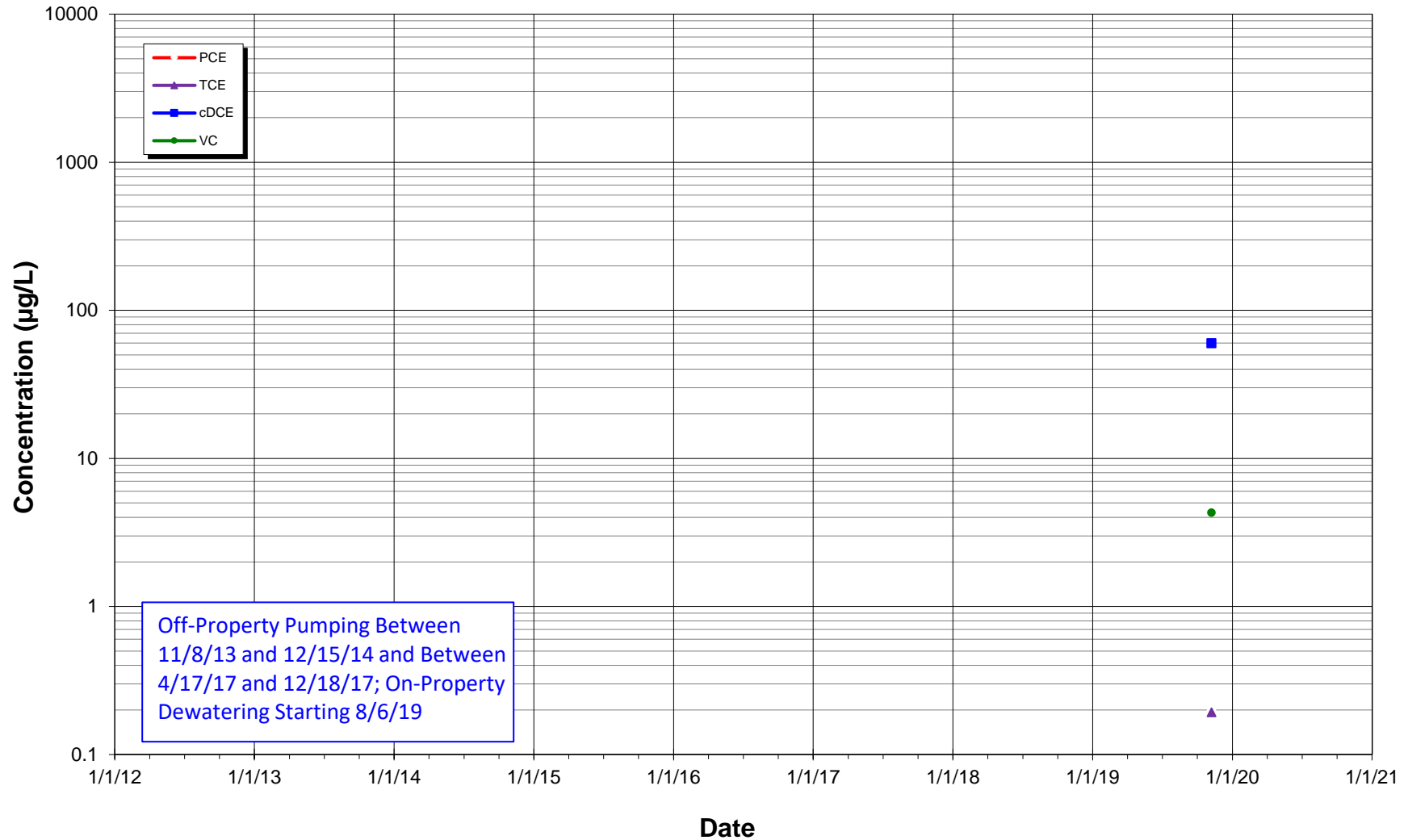
Concentration vs Time
MW-179 (-27.2 to -37.2 feet NAVD), Property, Treatment Zone C
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

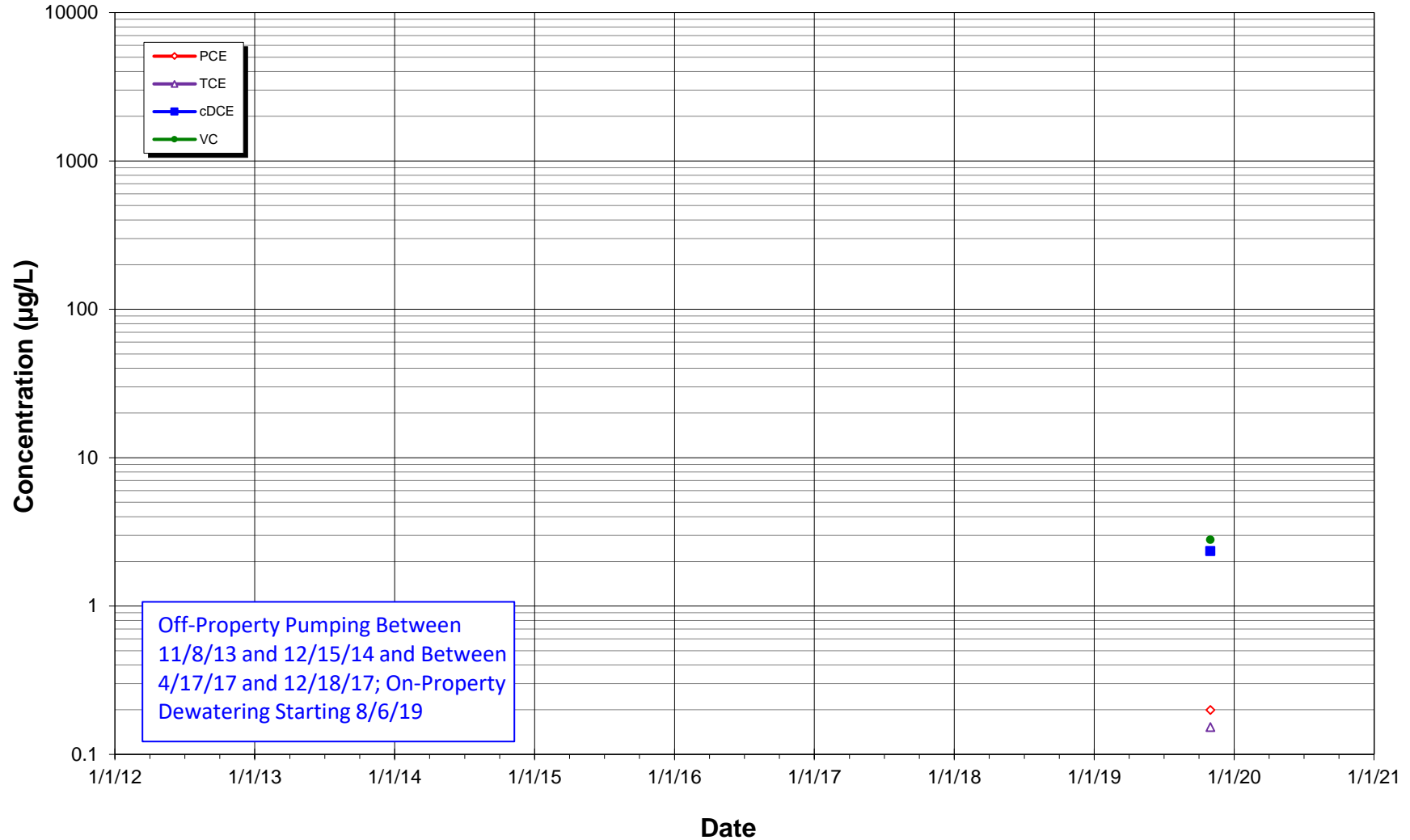
Concentration vs Time
MW-183 (-27.4 to -37.4 feet NAVD), Property, Treatment Zone C
American Linen Supply Co-Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

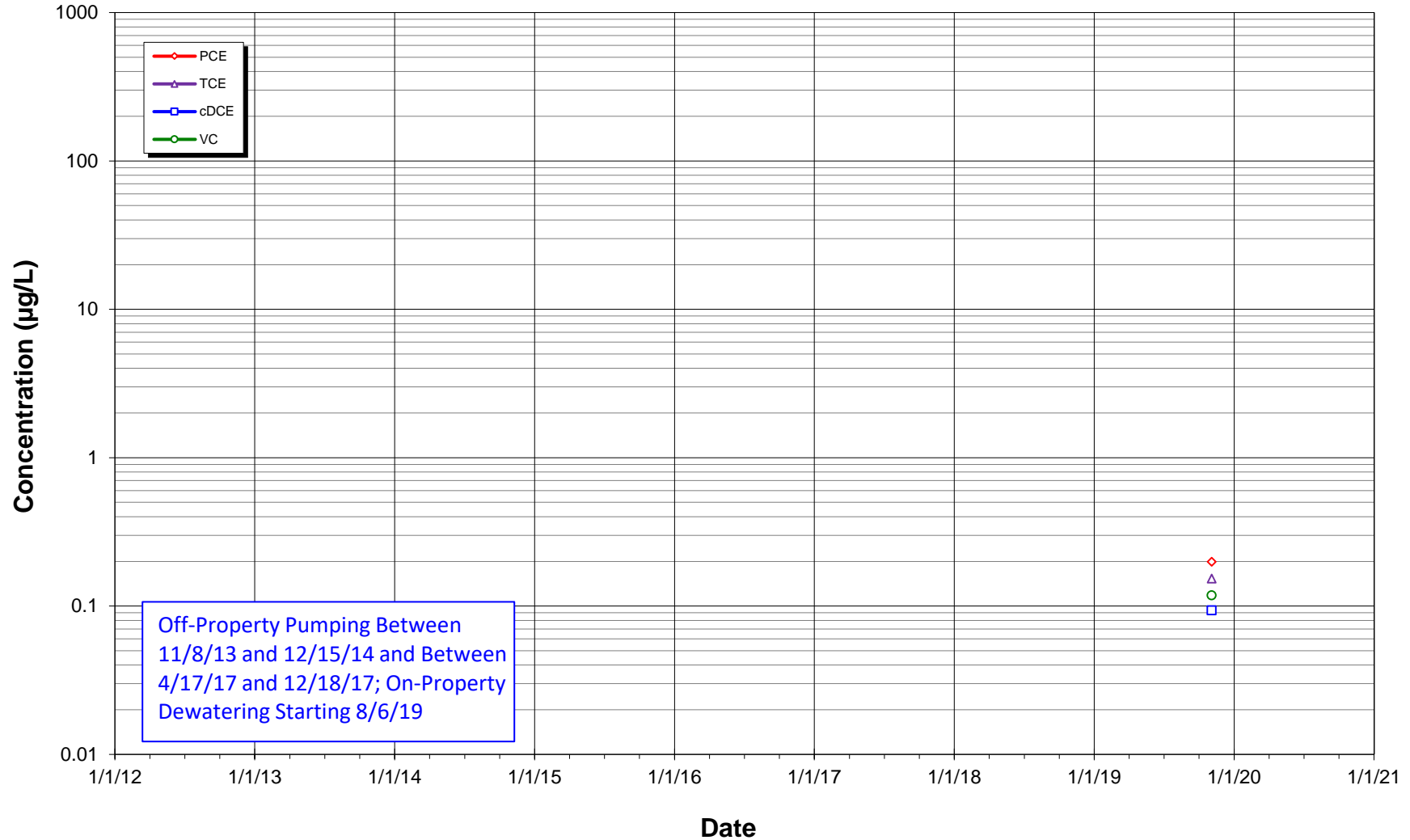
Concentration vs Time
MW-187 (-27.0 to -37.0 feet NAVD), Property, Treatment Zone C
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

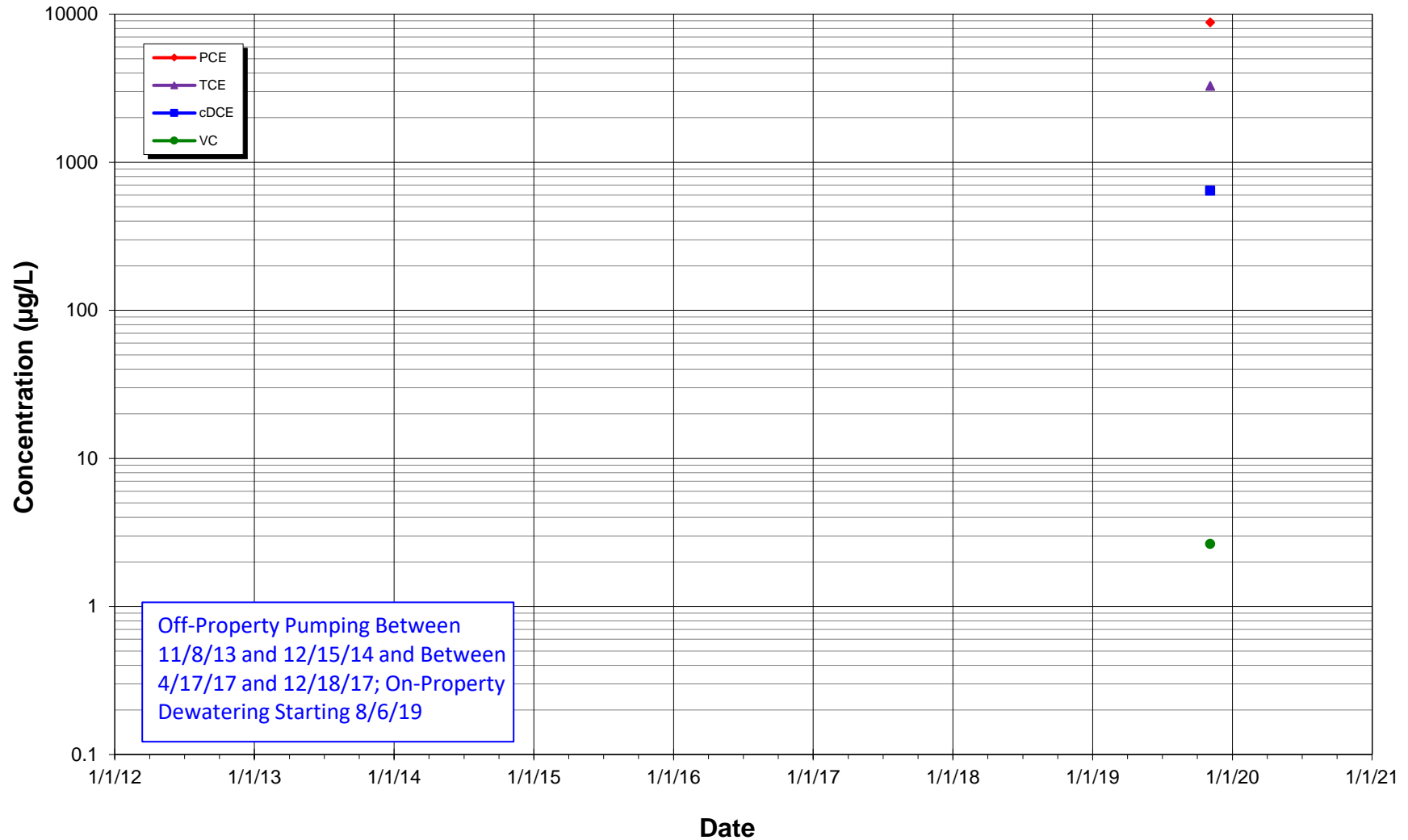
Concentration vs Time
MW-168 (-43 to -53 feet NAVD), Property, Treatment Zone D
American Linen Supply Co-Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

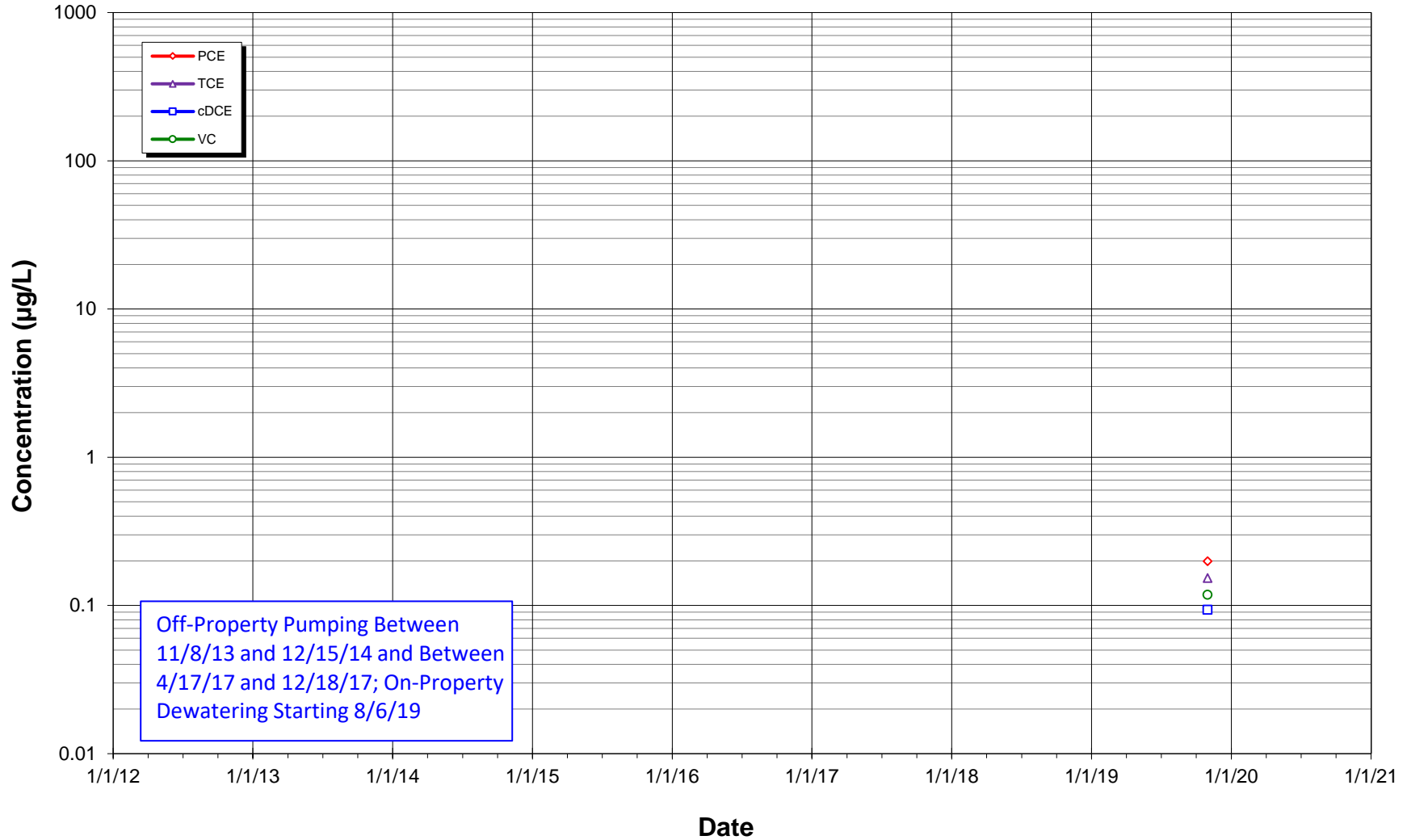
Concentration vs Time
MW-172 (-42.5 to -52.5 feet NAVD), Property, Treatment Zone D
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

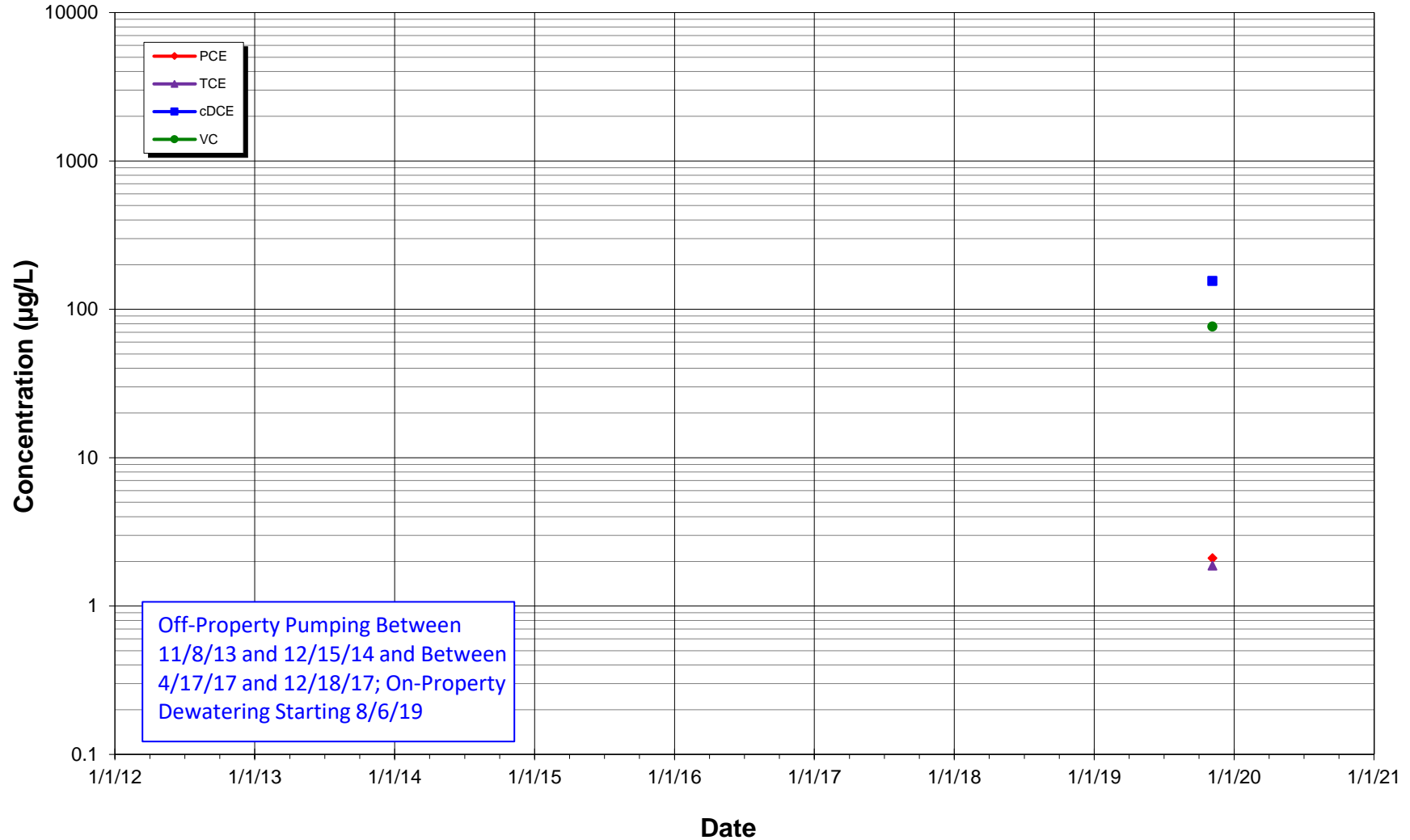
Concentration vs Time
MW-176 (-42.7 to -52.7 feet NAVD), Property, Treatment Zone D
American Linen Supply Co-Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

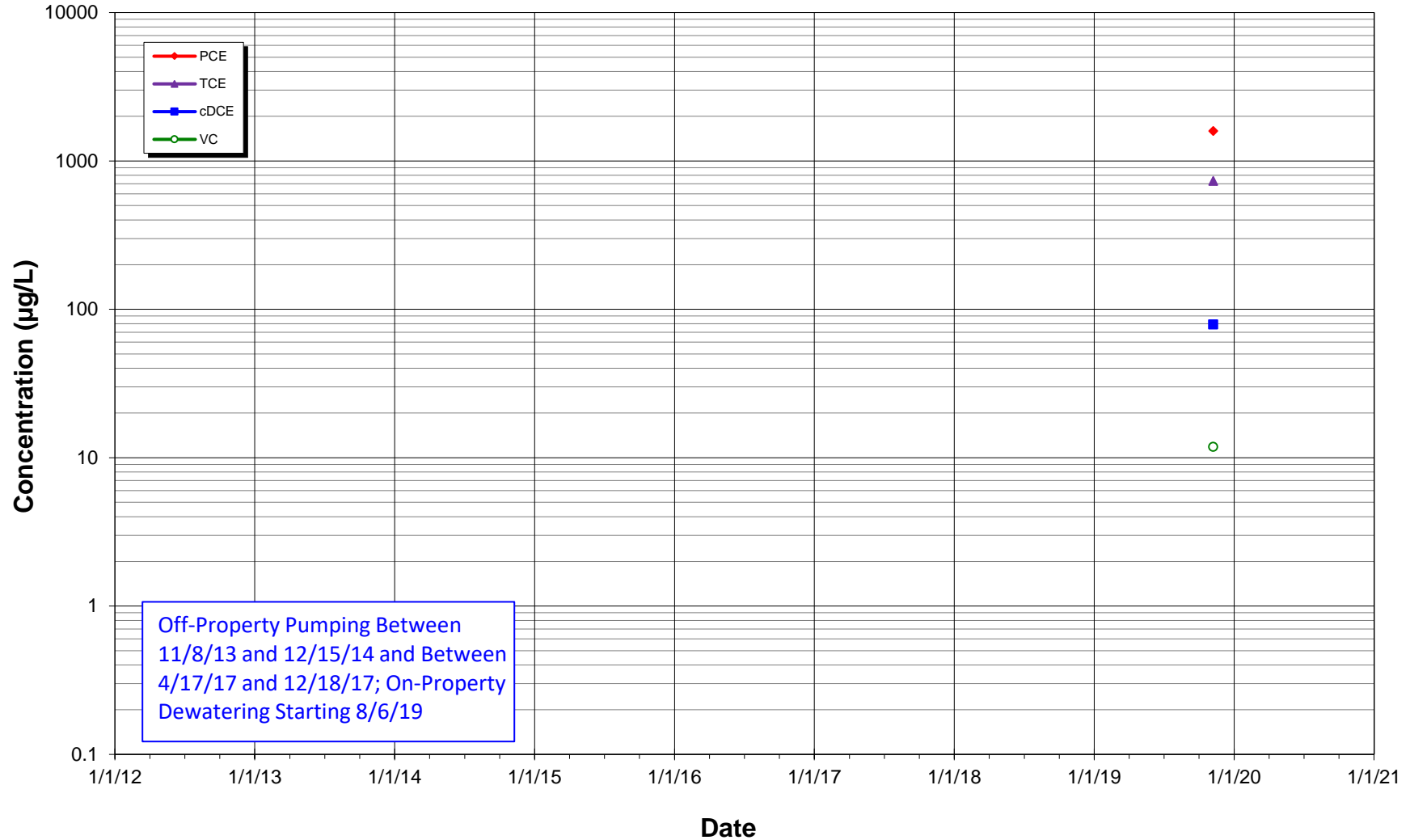
Concentration vs Time
MW-180 (-42.5 to -52.5 feet NAVD), Property, Treatment Zone D
American Linen Supply Co–Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

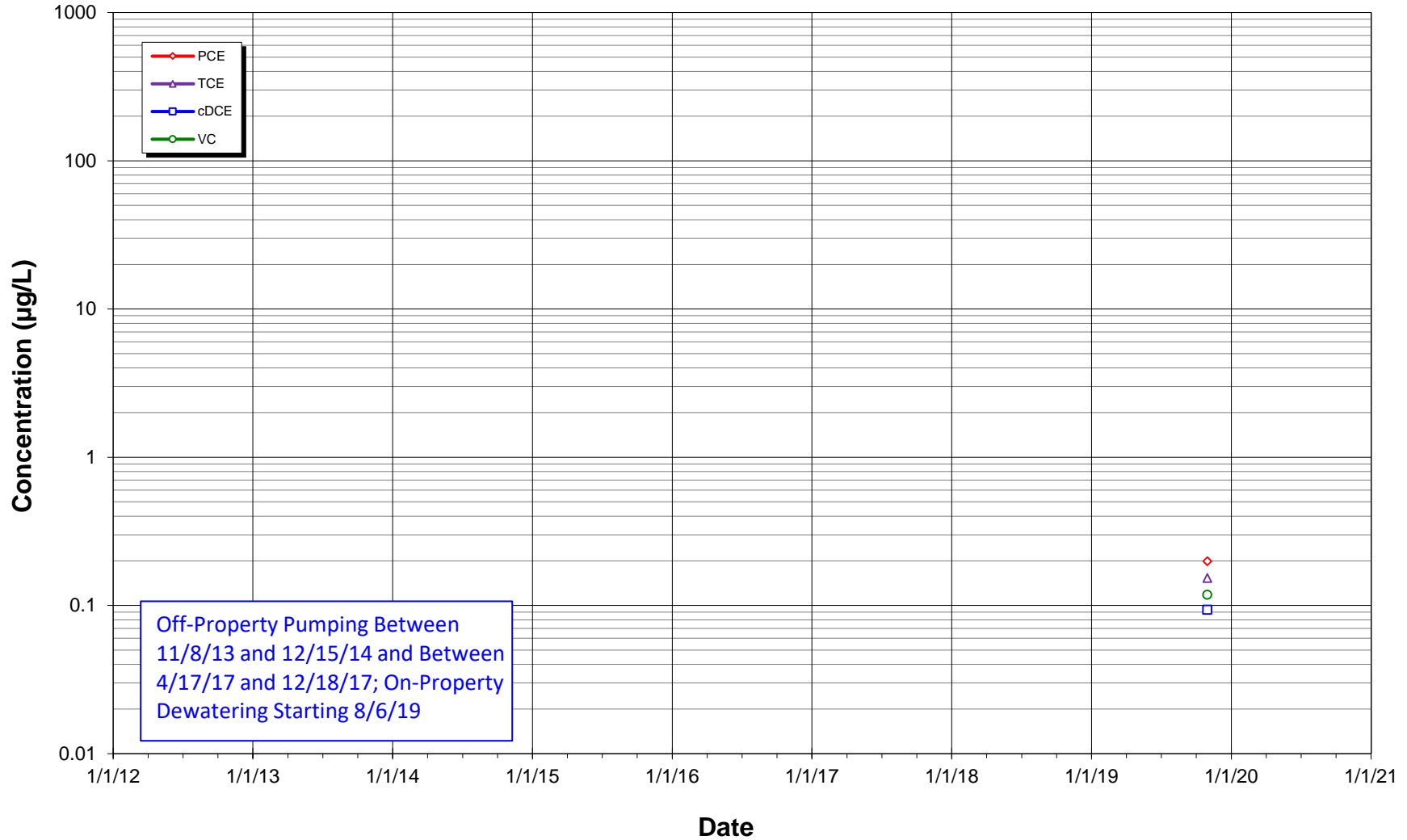
Concentration vs Time
MW-180 (-42.5 to -52.5 feet NAVD), Property, Treatment Zone D
American Linen Supply Co-Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

Concentration vs Time
MW-180 (-42.2 to -52.2 feet NAVD), Property, Treatment Zone D
American Linen Supply Co-Dexter Ave Site



Notes:

- 1) All results detected below the laboratory MDLs are shown as hollow data points .
- 2) Preliminary Screening Levels: PCE = 1 µg/L, TCE = 1 µg/L, cDCE = 16 µg/L, and VC = 0.2 µg/L.

ATTACHMENT B

Laboratory Reports and Data Validation Memoranda

PES Environmental, Inc.- WA

Sample Delivery Group: L1146788
Samples Received: 10/05/2019
Project Number: 1413.001.02.501E
Description: American Linen
Site: AMERICAN LINEN
Report To: Brian O'Neal/Bill Haldeman
1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Entire Report Reviewed By:

Brian Ford

Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



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MW-328-100219 L1146788-03	12	⁵Sr
MW-327-100219 L1146788-04	15	
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MW-315-100319 L1146788-06	19	
MW-915-100319 L1146788-07	22	⁷Gl
MW-325-100319 L1146788-08	24	⁸Al
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SAMPLE SUMMARY



MW-316-100219 L1146788-01 GW

Collected by
Ben Hecht
Collected date/time
10/02/19 09:50
Received date/time
10/05/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1362246	1	10/13/19 15:01	10/13/19 15:01	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1357983	1	10/05/19 16:50	10/05/19 16:50	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1361291	1	10/11/19 13:15	10/11/19 13:15	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1358528	5	10/08/19 09:49	10/09/19 10:59	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1360431	1	10/10/19 14:27	10/10/19 14:27	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1362918	1	10/15/19 02:55	10/15/19 02:55	JHH	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

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Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

MW-324-100219 L1146788-02 GW

Collected by
Ben Hecht
Collected date/time
10/02/19 12:15
Received date/time
10/05/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1362246	1	10/13/19 15:08	10/13/19 15:08	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1357983	1	10/05/19 18:29	10/05/19 18:29	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1361291	1	10/11/19 13:39	10/11/19 13:39	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1358528	5	10/08/19 09:49	10/09/19 11:02	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1360431	1	10/10/19 14:31	10/10/19 14:31	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1362918	1	10/15/19 03:16	10/15/19 03:16	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1363245	50	10/15/19 16:28	10/15/19 16:28	ACG	Mt. Juliet, TN

MW-328-100219 L1146788-03 GW

Collected by
Ben Hecht
Collected date/time
10/02/19 14:15
Received date/time
10/05/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1362246	1	10/13/19 15:16	10/13/19 15:16	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1357983	1	10/05/19 18:45	10/05/19 18:45	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1361291	1	10/11/19 14:02	10/11/19 14:02	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1358528	10	10/08/19 09:49	10/09/19 11:06	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1360431	1	10/10/19 14:33	10/10/19 14:33	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1361193	10	10/11/19 09:50	10/11/19 09:50	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1362918	1	10/15/19 03:36	10/15/19 03:36	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1363245	1	10/15/19 16:48	10/15/19 16:48	ACG	Mt. Juliet, TN

MW-327-100219 L1146788-04 GW

Collected by
Ben Hecht
Collected date/time
10/02/19 16:10
Received date/time
10/05/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1362246	1	10/13/19 15:24	10/13/19 15:24	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1357983	1	10/05/19 19:01	10/05/19 19:01	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1361291	1	10/11/19 14:25	10/11/19 14:25	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1358528	10	10/08/19 09:49	10/09/19 11:09	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1360431	1	10/10/19 14:37	10/10/19 14:37	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1361193	10	10/11/19 09:56	10/11/19 09:56	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1362918	1	10/15/19 03:57	10/15/19 03:57	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1363245	1	10/15/19 17:07	10/15/19 17:07	JHH	Mt. Juliet, TN

MW-316-100319 L1146788-05 GW

Collected by
Ben Hecht
Collected date/time
10/03/19 08:15
Received date/time
10/05/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1357983	1	10/05/19 19:18	10/05/19 19:18	ELN	Mt. Juliet, TN

SAMPLE SUMMARY



MW-315-100319 L1146788-06 GW

Collected by
Ben Hecht
Collected date/time
10/03/19 09:20
Received date/time
10/05/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1362246	1	10/13/19 15:30	10/13/19 15:30	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1357983	1	10/05/19 19:34	10/05/19 19:34	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1361291	1	10/11/19 15:14	10/11/19 15:14	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1358528	1	10/08/19 09:49	10/09/19 00:25	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1358528	5	10/08/19 09:49	10/09/19 11:13	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1360431	1	10/10/19 14:40	10/10/19 14:40	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1362918	1	10/15/19 04:18	10/15/19 04:18	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1363245	1	10/15/19 17:27	10/15/19 17:27	JHH	Mt. Juliet, TN

1
Cp

2
Tc

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Ss

4
Cn

5
Sr

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Qc

7
Gl

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Al

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Sc

MW-915-100319 L1146788-07 GW

Collected by
Ben Hecht
Collected date/time
10/03/19 10:10
Received date/time
10/05/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1362246	1	10/13/19 15:38	10/13/19 15:38	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1357983	1	10/05/19 19:51	10/05/19 19:51	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1361291	1	10/11/19 15:37	10/11/19 15:37	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1358528	20	10/08/19 09:49	10/09/19 11:17	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1360431	1	10/10/19 14:44	10/10/19 14:44	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1362918	1	10/15/19 04:39	10/15/19 04:39	JHH	Mt. Juliet, TN

MW-325-100319 L1146788-08 GW

Collected by
Ben Hecht
Collected date/time
10/03/19 11:15
Received date/time
10/05/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1362246	1	10/13/19 15:53	10/13/19 15:53	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1357983	1	10/05/19 20:07	10/05/19 20:07	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1357983	5	10/07/19 10:06	10/07/19 10:06	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1361291	1	10/11/19 17:36	10/11/19 17:36	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1358528	1	10/08/19 09:49	10/09/19 00:43	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1358528	5	10/08/19 09:49	10/09/19 11:20	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1360431	1	10/10/19 14:46	10/10/19 14:46	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1362918	1	10/15/19 04:59	10/15/19 04:59	JHH	Mt. Juliet, TN

MW-326-100319 L1146788-09 GW

Collected by
Ben Hecht
Collected date/time
10/03/19 12:30
Received date/time
10/05/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1362246	1	10/13/19 16:00	10/13/19 16:00	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1357983	1	10/05/19 20:56	10/05/19 20:56	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1361291	1	10/11/19 17:55	10/11/19 17:55	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1358528	5	10/08/19 09:49	10/09/19 11:24	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1360431	1	10/10/19 14:49	10/10/19 14:49	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1362918	1	10/15/19 05:20	10/15/19 05:20	JHH	Mt. Juliet, TN

MW-329-100319 L1146788-10 GW

Collected by
Ben Hecht
Collected date/time
10/03/19 14:35
Received date/time
10/05/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1362246	1	10/13/19 16:07	10/13/19 16:07	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1357983	1	10/05/19 14:53	10/05/19 14:53	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1361291	1	10/11/19 18:16	10/11/19 18:16	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1358528	20	10/08/19 09:49	10/09/19 11:28	JPD	Mt. Juliet, TN

SAMPLE SUMMARY



MW-329-100319 L1146788-10 GW

Collected by: Ben Hecht
 Collected date/time: 10/03/19 14:35
 Received date/time: 10/05/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method RSK175	WG1360431	1	10/10/19 14:51	10/10/19 14:51	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1362918	1	10/15/19 05:41	10/15/19 05:41	JHH	Mt. Juliet, TN

1 Cp

2 Tc

3 Ss

TRIP BLANK L1146788-11 GW

Collected by: Ben Hecht
 Collected date/time: 10/03/19 00:00
 Received date/time: 10/05/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1362918	1	10/15/19 01:32	10/15/19 01:32	JHH	Mt. Juliet, TN

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

Sample Delivery Group (SDG) Narrative

VOC pH outside of method requirement.

<u>Lab Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L1146788-03	MW-328-100219	8260C

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	384000		2710	20000	1	10/13/2019 15:01	WG1362246

Sample Narrative:

L1146788-01 WG1362246: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	16900		51.9	1000	1	10/05/2019 16:50	WG1357983
Sulfate	41800		77.4	5000	1	10/05/2019 16:50	WG1357983

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	3780	<u>B</u>	102	1000	1	10/11/2019 13:15	WG1361291

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	2580		75.0	500	5	10/09/2019 10:59	WG1358528
Manganese	328		1.25	25.0	5	10/09/2019 10:59	WG1358528

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	143		0.287	0.678	1	10/10/2019 14:27	WG1360431
Ethane	U		0.296	1.29	1	10/10/2019 14:27	WG1360431
Ethene	U		0.422	1.27	1	10/10/2019 14:27	WG1360431

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	2.73	<u>J JO</u>	1.05	25.0	1	10/15/2019 02:55	WG1362918
Acrylonitrile	U		0.873	5.00	1	10/15/2019 02:55	WG1362918
Benzene	U		0.0896	0.500	1	10/15/2019 02:55	WG1362918
Bromobenzene	U		0.133	0.500	1	10/15/2019 02:55	WG1362918
Bromodichloromethane	U		0.0800	0.500	1	10/15/2019 02:55	WG1362918
Bromochloromethane	U		0.145	0.500	1	10/15/2019 02:55	WG1362918
Bromoform	U		0.186	0.500	1	10/15/2019 02:55	WG1362918
Bromomethane	U		0.157	2.50	1	10/15/2019 02:55	WG1362918
n-Butylbenzene	U		0.143	0.500	1	10/15/2019 02:55	WG1362918
sec-Butylbenzene	U		0.134	0.500	1	10/15/2019 02:55	WG1362918
tert-Butylbenzene	U		0.183	0.500	1	10/15/2019 02:55	WG1362918
Carbon disulfide	0.485	<u>J</u>	0.101	0.500	1	10/15/2019 02:55	WG1362918
Carbon tetrachloride	U		0.159	0.500	1	10/15/2019 02:55	WG1362918
Chlorobenzene	U		0.140	0.500	1	10/15/2019 02:55	WG1362918
Chlorodibromomethane	U		0.128	0.500	1	10/15/2019 02:55	WG1362918
Chloroethane	U		0.141	2.50	1	10/15/2019 02:55	WG1362918
Chloroform	U		0.0860	0.500	1	10/15/2019 02:55	WG1362918
Chloromethane	U		0.153	1.25	1	10/15/2019 02:55	WG1362918
2-Chlorotoluene	U		0.111	0.500	1	10/15/2019 02:55	WG1362918
4-Chlorotoluene	U		0.0972	0.500	1	10/15/2019 02:55	WG1362918
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/15/2019 02:55	WG1362918

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromoethane	U		0.193	0.500	1	10/15/2019 02:55	WG1362918
Dibromomethane	U		0.117	0.500	1	10/15/2019 02:55	WG1362918
1,2-Dichlorobenzene	U		0.101	0.500	1	10/15/2019 02:55	WG1362918
1,3-Dichlorobenzene	U		0.130	0.500	1	10/15/2019 02:55	WG1362918
1,4-Dichlorobenzene	U		0.121	0.500	1	10/15/2019 02:55	WG1362918
Dichlorodifluoromethane	U		0.127	2.50	1	10/15/2019 02:55	WG1362918
1,1-Dichloroethane	U		0.114	0.500	1	10/15/2019 02:55	WG1362918
1,2-Dichloroethane	U		0.108	0.500	1	10/15/2019 02:55	WG1362918
1,1-Dichloroethene	U		0.188	0.500	1	10/15/2019 02:55	WG1362918
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/15/2019 02:55	WG1362918
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/15/2019 02:55	WG1362918
1,2-Dichloropropane	U		0.190	0.500	1	10/15/2019 02:55	WG1362918
1,1-Dichloropropene	U		0.128	0.500	1	10/15/2019 02:55	WG1362918
1,3-Dichloropropane	U		0.147	1.00	1	10/15/2019 02:55	WG1362918
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/15/2019 02:55	WG1362918
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/15/2019 02:55	WG1362918
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/15/2019 02:55	WG1362918
2,2-Dichloropropane	U		0.0929	0.500	1	10/15/2019 02:55	WG1362918
Di-isopropyl ether	U		0.0924	0.500	1	10/15/2019 02:55	WG1362918
Ethylbenzene	U		0.158	0.500	1	10/15/2019 02:55	WG1362918
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/15/2019 02:55	WG1362918
2-Hexanone	U		0.757	5.00	1	10/15/2019 02:55	WG1362918
n-Hexane	U		0.305	5.00	1	10/15/2019 02:55	WG1362918
Iodomethane	U		0.377	10.0	1	10/15/2019 02:55	WG1362918
Isopropylbenzene	U		0.126	0.500	1	10/15/2019 02:55	WG1362918
p-Isopropyltoluene	U		0.138	0.500	1	10/15/2019 02:55	WG1362918
2-Butanone (MEK)	U		1.28	5.00	1	10/15/2019 02:55	WG1362918
Methylene Chloride	U		1.07	2.50	1	10/15/2019 02:55	WG1362918
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/15/2019 02:55	WG1362918
Methyl tert-butyl ether	U		0.102	0.500	1	10/15/2019 02:55	WG1362918
Naphthalene	U		0.174	2.50	1	10/15/2019 02:55	WG1362918
n-Propylbenzene	U		0.162	0.500	1	10/15/2019 02:55	WG1362918
Styrene	U		0.117	0.500	1	10/15/2019 02:55	WG1362918
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/15/2019 02:55	WG1362918
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/15/2019 02:55	WG1362918
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/15/2019 02:55	WG1362918
Tetrachloroethene	U		0.199	0.500	1	10/15/2019 02:55	WG1362918
Toluene	0.570		0.412	0.500	1	10/15/2019 02:55	WG1362918
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/15/2019 02:55	WG1362918
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/15/2019 02:55	WG1362918
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/15/2019 02:55	WG1362918
1,1,2-Trichloroethane	U		0.186	0.500	1	10/15/2019 02:55	WG1362918
Trichloroethene	U		0.153	0.500	1	10/15/2019 02:55	WG1362918
Trichlorofluoromethane	U		0.130	2.50	1	10/15/2019 02:55	WG1362918
1,2,3-Trichloropropane	U		0.247	2.50	1	10/15/2019 02:55	WG1362918
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/15/2019 02:55	WG1362918
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/15/2019 02:55	WG1362918
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/15/2019 02:55	WG1362918
Vinyl acetate	U		0.645	5.00	1	10/15/2019 02:55	WG1362918
Vinyl chloride	U		0.118	0.500	1	10/15/2019 02:55	WG1362918
Xylenes, Total	U		0.316	1.50	1	10/15/2019 02:55	WG1362918
(S) Toluene-d8	102			80.0-120		10/15/2019 02:55	WG1362918
(S) 4-Bromofluorobenzene	102			77.0-126		10/15/2019 02:55	WG1362918
(S) 1,2-Dichloroethane-d4	109			70.0-130		10/15/2019 02:55	WG1362918

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	587000		2710	20000	1	10/13/2019 15:08	WG1362246

Sample Narrative:

L1146788-02 WG1362246: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	20100		51.9	1000	1	10/05/2019 18:29	WG1357983
Nitrate	U	T8	22.7	100	1	10/05/2019 18:29	WG1357983
Sulfate	93100		77.4	5000	1	10/05/2019 18:29	WG1357983

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	13100		102	1000	1	10/11/2019 13:39	WG1361291

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	5740		75.0	500	5	10/09/2019 11:02	WG1358528
Manganese	374		1.25	25.0	5	10/09/2019 11:02	WG1358528

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	3340		0.287	0.678	1	10/10/2019 14:31	WG1360431
Ethane	13.4		0.296	1.29	1	10/10/2019 14:31	WG1360431
Ethene	22.4		0.422	1.27	1	10/10/2019 14:31	WG1360431

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	6.39	J JO	1.05	25.0	1	10/15/2019 03:16	WG1362918
Acrylonitrile	U		0.873	5.00	1	10/15/2019 03:16	WG1362918
Benzene	0.401	J	0.0896	0.500	1	10/15/2019 03:16	WG1362918
Bromobenzene	U		0.133	0.500	1	10/15/2019 03:16	WG1362918
Bromodichloromethane	U		0.0800	0.500	1	10/15/2019 03:16	WG1362918
Bromochloromethane	U		0.145	0.500	1	10/15/2019 03:16	WG1362918
Bromoform	U		0.186	0.500	1	10/15/2019 03:16	WG1362918
Bromomethane	U		0.157	2.50	1	10/15/2019 03:16	WG1362918
n-Butylbenzene	U		0.143	0.500	1	10/15/2019 03:16	WG1362918
sec-Butylbenzene	U		0.134	0.500	1	10/15/2019 03:16	WG1362918
tert-Butylbenzene	U		0.183	0.500	1	10/15/2019 03:16	WG1362918
Carbon disulfide	5.63		0.101	0.500	1	10/15/2019 03:16	WG1362918
Carbon tetrachloride	U		0.159	0.500	1	10/15/2019 03:16	WG1362918
Chlorobenzene	U		0.140	0.500	1	10/15/2019 03:16	WG1362918
Chlorodibromomethane	U		0.128	0.500	1	10/15/2019 03:16	WG1362918
Chloroethane	U		0.141	2.50	1	10/15/2019 03:16	WG1362918
Chloroform	U		0.0860	0.500	1	10/15/2019 03:16	WG1362918
Chloromethane	U		0.153	1.25	1	10/15/2019 03:16	WG1362918
2-Chlorotoluene	U		0.111	0.500	1	10/15/2019 03:16	WG1362918
4-Chlorotoluene	U		0.0972	0.500	1	10/15/2019 03:16	WG1362918

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/15/2019 03:16	WG1362918
1,2-Dibromoethane	U		0.193	0.500	1	10/15/2019 03:16	WG1362918
Dibromomethane	U		0.117	0.500	1	10/15/2019 03:16	WG1362918
1,2-Dichlorobenzene	U		0.101	0.500	1	10/15/2019 03:16	WG1362918
1,3-Dichlorobenzene	U		0.130	0.500	1	10/15/2019 03:16	WG1362918
1,4-Dichlorobenzene	U		0.121	0.500	1	10/15/2019 03:16	WG1362918
Dichlorodifluoromethane	U		0.127	2.50	1	10/15/2019 03:16	WG1362918
1,1-Dichloroethane	U		0.114	0.500	1	10/15/2019 03:16	WG1362918
1,2-Dichloroethane	U		0.108	0.500	1	10/15/2019 03:16	WG1362918
1,1-Dichloroethene	1.53		0.188	0.500	1	10/15/2019 03:16	WG1362918
cis-1,2-Dichloroethene	1550		4.67	25.0	50	10/15/2019 16:28	WG1363245
trans-1,2-Dichloroethene	3.21		0.152	0.500	1	10/15/2019 03:16	WG1362918
1,2-Dichloropropane	U		0.190	0.500	1	10/15/2019 03:16	WG1362918
1,1-Dichloropropene	U		0.128	0.500	1	10/15/2019 03:16	WG1362918
1,3-Dichloropropane	U		0.147	1.00	1	10/15/2019 03:16	WG1362918
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/15/2019 03:16	WG1362918
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/15/2019 03:16	WG1362918
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/15/2019 03:16	WG1362918
2,2-Dichloropropane	U		0.0929	0.500	1	10/15/2019 03:16	WG1362918
Di-isopropyl ether	U		0.0924	0.500	1	10/15/2019 03:16	WG1362918
Ethylbenzene	U		0.158	0.500	1	10/15/2019 03:16	WG1362918
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/15/2019 03:16	WG1362918
2-Hexanone	U		0.757	5.00	1	10/15/2019 03:16	WG1362918
n-Hexane	U		0.305	5.00	1	10/15/2019 03:16	WG1362918
Iodomethane	U		0.377	10.0	1	10/15/2019 03:16	WG1362918
Isopropylbenzene	U		0.126	0.500	1	10/15/2019 03:16	WG1362918
p-Isopropyltoluene	U		0.138	0.500	1	10/15/2019 03:16	WG1362918
2-Butanone (MEK)	U		1.28	5.00	1	10/15/2019 03:16	WG1362918
Methylene Chloride	U		1.07	2.50	1	10/15/2019 03:16	WG1362918
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/15/2019 03:16	WG1362918
Methyl tert-butyl ether	U		0.102	0.500	1	10/15/2019 03:16	WG1362918
Naphthalene	U		0.174	2.50	1	10/15/2019 03:16	WG1362918
n-Propylbenzene	U		0.162	0.500	1	10/15/2019 03:16	WG1362918
Styrene	U		0.117	0.500	1	10/15/2019 03:16	WG1362918
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/15/2019 03:16	WG1362918
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/15/2019 03:16	WG1362918
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/15/2019 03:16	WG1362918
Tetrachloroethene	U		0.199	0.500	1	10/15/2019 03:16	WG1362918
Toluene	5.45		0.412	0.500	1	10/15/2019 03:16	WG1362918
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/15/2019 03:16	WG1362918
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/15/2019 03:16	WG1362918
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/15/2019 03:16	WG1362918
1,1,2-Trichloroethane	U		0.186	0.500	1	10/15/2019 03:16	WG1362918
Trichloroethene	0.642		0.153	0.500	1	10/15/2019 03:16	WG1362918
Trichlorofluoromethane	U		0.130	2.50	1	10/15/2019 03:16	WG1362918
1,2,3-Trichloropropane	U		0.247	2.50	1	10/15/2019 03:16	WG1362918
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/15/2019 03:16	WG1362918
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/15/2019 03:16	WG1362918
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/15/2019 03:16	WG1362918
Vinyl acetate	U		0.645	5.00	1	10/15/2019 03:16	WG1362918
Vinyl chloride	61.9		0.118	0.500	1	10/15/2019 03:16	WG1362918
Xylenes, Total	U		0.316	1.50	1	10/15/2019 03:16	WG1362918
(S) Toluene-d8	101			80.0-120		10/15/2019 03:16	WG1362918
(S) Toluene-d8	94.7			80.0-120		10/15/2019 16:28	WG1363245
(S) 4-Bromofluorobenzene	104			77.0-126		10/15/2019 03:16	WG1362918
(S) 4-Bromofluorobenzene	91.6			77.0-126		10/15/2019 16:28	WG1363245

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	105			70.0-130		10/15/2019 03:16	WG1362918
(S) 1,2-Dichloroethane-d4	84.0			70.0-130		10/15/2019 16:28	WG1363245

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	683000		2710	20000	1	10/13/2019 15:16	WG1362246

Sample Narrative:

L1146788-03 WG1362246: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	17700		51.9	1000	1	10/05/2019 18:45	WG1357983
Nitrate	U	T8	22.7	100	1	10/05/2019 18:45	WG1357983
Sulfate	787	J	77.4	5000	1	10/05/2019 18:45	WG1357983

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	8750		102	1000	1	10/11/2019 14:02	WG1361291

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	20300		150	1000	10	10/09/2019 11:06	WG1358528
Manganese	755		2.50	50.0	10	10/09/2019 11:06	WG1358528

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	23700		2.87	6.78	10	10/11/2019 09:50	WG1361193
Ethane	U		0.296	1.29	1	10/10/2019 14:33	WG1360431
Ethene	36.8		0.422	1.27	1	10/10/2019 14:33	WG1360431

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	2.16	J JO	1.05	25.0	1	10/15/2019 03:36	WG1362918
Acrylonitrile	U		0.873	5.00	1	10/15/2019 03:36	WG1362918
Benzene	17.0		0.0896	0.500	1	10/15/2019 03:36	WG1362918
Bromobenzene	U		0.133	0.500	1	10/15/2019 03:36	WG1362918
Bromodichloromethane	U		0.0800	0.500	1	10/15/2019 03:36	WG1362918
Bromochloromethane	U		0.145	0.500	1	10/15/2019 03:36	WG1362918
Bromoform	U		0.186	0.500	1	10/15/2019 03:36	WG1362918
Bromomethane	U		0.157	2.50	1	10/15/2019 03:36	WG1362918
n-Butylbenzene	U		0.143	0.500	1	10/15/2019 03:36	WG1362918
sec-Butylbenzene	U		0.134	0.500	1	10/15/2019 03:36	WG1362918
tert-Butylbenzene	U		0.183	0.500	1	10/15/2019 03:36	WG1362918
Carbon disulfide	U		0.101	0.500	1	10/15/2019 03:36	WG1362918
Carbon tetrachloride	U		0.159	0.500	1	10/15/2019 03:36	WG1362918
Chlorobenzene	U		0.140	0.500	1	10/15/2019 03:36	WG1362918
Chlorodibromomethane	U		0.128	0.500	1	10/15/2019 03:36	WG1362918
Chloroethane	U		0.141	2.50	1	10/15/2019 03:36	WG1362918
Chloroform	U		0.0860	0.500	1	10/15/2019 03:36	WG1362918
Chloromethane	U		0.153	1.25	1	10/15/2019 03:36	WG1362918
2-Chlorotoluene	U		0.111	0.500	1	10/15/2019 03:36	WG1362918
4-Chlorotoluene	U		0.0972	0.500	1	10/15/2019 03:36	WG1362918

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/15/2019 03:36	WG1362918
1,2-Dibromoethane	U		0.193	0.500	1	10/15/2019 03:36	WG1362918
Dibromomethane	U		0.117	0.500	1	10/15/2019 03:36	WG1362918
1,2-Dichlorobenzene	U		0.101	0.500	1	10/15/2019 03:36	WG1362918
1,3-Dichlorobenzene	U		0.130	0.500	1	10/15/2019 03:36	WG1362918
1,4-Dichlorobenzene	U		0.121	0.500	1	10/15/2019 03:36	WG1362918
Dichlorodifluoromethane	U		0.127	2.50	1	10/15/2019 03:36	WG1362918
1,1-Dichloroethane	U		0.114	0.500	1	10/15/2019 03:36	WG1362918
1,2-Dichloroethane	U		0.108	0.500	1	10/15/2019 03:36	WG1362918
1,1-Dichloroethene	U		0.188	0.500	1	10/15/2019 03:36	WG1362918
cis-1,2-Dichloroethene	1.26		0.0933	0.500	1	10/15/2019 16:48	WG1363245
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/15/2019 03:36	WG1362918
1,2-Dichloropropane	U		0.190	0.500	1	10/15/2019 03:36	WG1362918
1,1-Dichloropropene	U		0.128	0.500	1	10/15/2019 03:36	WG1362918
1,3-Dichloropropane	U		0.147	1.00	1	10/15/2019 03:36	WG1362918
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/15/2019 03:36	WG1362918
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/15/2019 03:36	WG1362918
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/15/2019 03:36	WG1362918
2,2-Dichloropropane	U		0.0929	0.500	1	10/15/2019 03:36	WG1362918
Di-isopropyl ether	U		0.0924	0.500	1	10/15/2019 03:36	WG1362918
Ethylbenzene	U		0.158	0.500	1	10/15/2019 03:36	WG1362918
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/15/2019 03:36	WG1362918
2-Hexanone	U		0.757	5.00	1	10/15/2019 03:36	WG1362918
n-Hexane	U		0.305	5.00	1	10/15/2019 03:36	WG1362918
Iodomethane	U		0.377	10.0	1	10/15/2019 03:36	WG1362918
Isopropylbenzene	U		0.126	0.500	1	10/15/2019 03:36	WG1362918
p-Isopropyltoluene	U		0.138	0.500	1	10/15/2019 03:36	WG1362918
2-Butanone (MEK)	U		1.28	5.00	1	10/15/2019 03:36	WG1362918
Methylene Chloride	U		1.07	2.50	1	10/15/2019 03:36	WG1362918
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/15/2019 03:36	WG1362918
Methyl tert-butyl ether	U		0.102	0.500	1	10/15/2019 03:36	WG1362918
Naphthalene	U		0.174	2.50	1	10/15/2019 03:36	WG1362918
n-Propylbenzene	U		0.162	0.500	1	10/15/2019 03:36	WG1362918
Styrene	U		0.117	0.500	1	10/15/2019 03:36	WG1362918
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/15/2019 03:36	WG1362918
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/15/2019 03:36	WG1362918
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/15/2019 03:36	WG1362918
Tetrachloroethene	U		0.199	0.500	1	10/15/2019 03:36	WG1362918
Toluene	0.535		0.412	0.500	1	10/15/2019 03:36	WG1362918
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/15/2019 03:36	WG1362918
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/15/2019 03:36	WG1362918
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/15/2019 03:36	WG1362918
1,1,2-Trichloroethane	U		0.186	0.500	1	10/15/2019 03:36	WG1362918
Trichloroethene	U		0.153	0.500	1	10/15/2019 03:36	WG1362918
Trichlorofluoromethane	U		0.130	2.50	1	10/15/2019 03:36	WG1362918
1,2,3-Trichloropropane	U		0.247	2.50	1	10/15/2019 03:36	WG1362918
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/15/2019 03:36	WG1362918
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/15/2019 03:36	WG1362918
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/15/2019 03:36	WG1362918
Vinyl acetate	U		0.645	5.00	1	10/15/2019 03:36	WG1362918
Vinyl chloride	23.3		0.118	0.500	1	10/15/2019 03:36	WG1362918
Xylenes, Total	U		0.316	1.50	1	10/15/2019 03:36	WG1362918
(S) Toluene-d8	103			80.0-120		10/15/2019 03:36	WG1362918
(S) Toluene-d8	92.1			80.0-120		10/15/2019 16:48	WG1363245
(S) 4-Bromofluorobenzene	106			77.0-126		10/15/2019 03:36	WG1362918
(S) 4-Bromofluorobenzene	92.3			77.0-126		10/15/2019 16:48	WG1363245

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	109			70.0-130		10/15/2019 03:36	WG1362918
(S) 1,2-Dichloroethane-d4	81.8			70.0-130		10/15/2019 16:48	WG1363245

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	272000		2710	20000	1	10/13/2019 15:24	WG1362246

Sample Narrative:

L1146788-04 WG1362246: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	18400		51.9	1000	1	10/05/2019 19:01	WG1357983
Nitrate	U	T8	22.7	100	1	10/05/2019 19:01	WG1357983
Sulfate	U		77.4	5000	1	10/05/2019 19:01	WG1357983

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	4410	B	102	1000	1	10/11/2019 14:25	WG1361291

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	12400		150	1000	10	10/09/2019 11:09	WG1358528
Manganese	822		2.50	50.0	10	10/09/2019 11:09	WG1358528

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	18500		2.87	6.78	10	10/11/2019 09:56	WG1361193
Ethane	U		0.296	1.29	1	10/10/2019 14:37	WG1360431
Ethene	U		0.422	1.27	1	10/10/2019 14:37	WG1360431

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	2.99	J JO	1.05	25.0	1	10/15/2019 03:57	WG1362918
Acrylonitrile	U		0.873	5.00	1	10/15/2019 03:57	WG1362918
Benzene	U		0.0896	0.500	1	10/15/2019 03:57	WG1362918
Bromobenzene	U		0.133	0.500	1	10/15/2019 03:57	WG1362918
Bromodichloromethane	U		0.0800	0.500	1	10/15/2019 03:57	WG1362918
Bromochloromethane	U		0.145	0.500	1	10/15/2019 03:57	WG1362918
Bromoform	U		0.186	0.500	1	10/15/2019 03:57	WG1362918
Bromomethane	U		0.157	2.50	1	10/15/2019 03:57	WG1362918
n-Butylbenzene	U		0.143	0.500	1	10/15/2019 03:57	WG1362918
sec-Butylbenzene	U		0.134	0.500	1	10/15/2019 03:57	WG1362918
tert-Butylbenzene	U		0.183	0.500	1	10/15/2019 03:57	WG1362918
Carbon disulfide	U		0.101	0.500	1	10/15/2019 03:57	WG1362918
Carbon tetrachloride	U		0.159	0.500	1	10/15/2019 03:57	WG1362918
Chlorobenzene	U		0.140	0.500	1	10/15/2019 03:57	WG1362918
Chlorodibromomethane	U		0.128	0.500	1	10/15/2019 03:57	WG1362918
Chloroethane	U		0.141	2.50	1	10/15/2019 03:57	WG1362918
Chloroform	U		0.0860	0.500	1	10/15/2019 03:57	WG1362918
Chloromethane	U		0.153	1.25	1	10/15/2019 03:57	WG1362918
2-Chlorotoluene	U		0.111	0.500	1	10/15/2019 03:57	WG1362918
4-Chlorotoluene	U		0.0972	0.500	1	10/15/2019 03:57	WG1362918

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/15/2019 03:57	WG1362918
1,2-Dibromoethane	U		0.193	0.500	1	10/15/2019 03:57	WG1362918
Dibromomethane	U		0.117	0.500	1	10/15/2019 03:57	WG1362918
1,2-Dichlorobenzene	U		0.101	0.500	1	10/15/2019 03:57	WG1362918
1,3-Dichlorobenzene	U		0.130	0.500	1	10/15/2019 03:57	WG1362918
1,4-Dichlorobenzene	U		0.121	0.500	1	10/15/2019 03:57	WG1362918
Dichlorodifluoromethane	U		0.127	2.50	1	10/15/2019 03:57	WG1362918
1,1-Dichloroethane	U		0.114	0.500	1	10/15/2019 03:57	WG1362918
1,2-Dichloroethane	U		0.108	0.500	1	10/15/2019 03:57	WG1362918
1,1-Dichloroethene	U		0.188	0.500	1	10/15/2019 03:57	WG1362918
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/15/2019 17:07	WG1363245
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/15/2019 03:57	WG1362918
1,2-Dichloropropane	U		0.190	0.500	1	10/15/2019 03:57	WG1362918
1,1-Dichloropropene	U		0.128	0.500	1	10/15/2019 03:57	WG1362918
1,3-Dichloropropane	U		0.147	1.00	1	10/15/2019 03:57	WG1362918
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/15/2019 03:57	WG1362918
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/15/2019 03:57	WG1362918
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/15/2019 03:57	WG1362918
2,2-Dichloropropane	U		0.0929	0.500	1	10/15/2019 03:57	WG1362918
Di-isopropyl ether	U		0.0924	0.500	1	10/15/2019 03:57	WG1362918
Ethylbenzene	U		0.158	0.500	1	10/15/2019 03:57	WG1362918
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/15/2019 03:57	WG1362918
2-Hexanone	U		0.757	5.00	1	10/15/2019 03:57	WG1362918
n-Hexane	U		0.305	5.00	1	10/15/2019 03:57	WG1362918
Iodomethane	U		0.377	10.0	1	10/15/2019 03:57	WG1362918
Isopropylbenzene	U		0.126	0.500	1	10/15/2019 03:57	WG1362918
p-Isopropyltoluene	U		0.138	0.500	1	10/15/2019 03:57	WG1362918
2-Butanone (MEK)	U		1.28	5.00	1	10/15/2019 03:57	WG1362918
Methylene Chloride	U		1.07	2.50	1	10/15/2019 03:57	WG1362918
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/15/2019 03:57	WG1362918
Methyl tert-butyl ether	U		0.102	0.500	1	10/15/2019 03:57	WG1362918
Naphthalene	U		0.174	2.50	1	10/15/2019 03:57	WG1362918
n-Propylbenzene	U		0.162	0.500	1	10/15/2019 03:57	WG1362918
Styrene	U		0.117	0.500	1	10/15/2019 03:57	WG1362918
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/15/2019 03:57	WG1362918
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/15/2019 03:57	WG1362918
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/15/2019 03:57	WG1362918
Tetrachloroethene	U		0.199	0.500	1	10/15/2019 03:57	WG1362918
Toluene	U		0.412	0.500	1	10/15/2019 03:57	WG1362918
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/15/2019 03:57	WG1362918
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/15/2019 03:57	WG1362918
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/15/2019 03:57	WG1362918
1,1,2-Trichloroethane	U		0.186	0.500	1	10/15/2019 03:57	WG1362918
Trichloroethene	U		0.153	0.500	1	10/15/2019 03:57	WG1362918
Trichlorofluoromethane	U		0.130	2.50	1	10/15/2019 03:57	WG1362918
1,2,3-Trichloropropane	U		0.247	2.50	1	10/15/2019 03:57	WG1362918
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/15/2019 03:57	WG1362918
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/15/2019 03:57	WG1362918
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/15/2019 03:57	WG1362918
Vinyl acetate	U		0.645	5.00	1	10/15/2019 03:57	WG1362918
Vinyl chloride	U		0.118	0.500	1	10/15/2019 03:57	WG1362918
Xylenes, Total	U		0.316	1.50	1	10/15/2019 03:57	WG1362918
(S) Toluene-d8	100			80.0-120		10/15/2019 03:57	WG1362918
(S) Toluene-d8	95.3			80.0-120		10/15/2019 17:07	WG1363245
(S) 4-Bromofluorobenzene	103			77.0-126		10/15/2019 03:57	WG1362918
(S) 4-Bromofluorobenzene	95.1			77.0-126		10/15/2019 17:07	WG1363245

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	108			70.0-130		10/15/2019 03:57	WG1362918
(S) 1,2-Dichloroethane-d4	85.4			70.0-130		10/15/2019 17:07	WG1363245

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Nitrate	U	<u>T8</u>	22.7	100	1	10/05/2019 19:18	WG1357983

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	325000		2710	20000	1	10/13/2019 15:30	WG1362246

Sample Narrative:

L1146788-06 WG1362246: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	11700		51.9	1000	1	10/05/2019 19:34	WG1357983
Nitrate	U	T8	22.7	100	1	10/05/2019 19:34	WG1357983
Sulfate	35000		77.4	5000	1	10/05/2019 19:34	WG1357983

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	3020	B	102	1000	1	10/11/2019 15:14	WG1361291

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	850		15.0	100	1	10/09/2019 00:25	WG1358528
Manganese	306		1.25	25.0	5	10/09/2019 11:13	WG1358528

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	124		0.287	0.678	1	10/10/2019 14:40	WG1360431
Ethane	U		0.296	1.29	1	10/10/2019 14:40	WG1360431
Ethene	U		0.422	1.27	1	10/10/2019 14:40	WG1360431

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	3.36	J JO	1.05	25.0	1	10/15/2019 04:18	WG1362918
Acrylonitrile	U		0.873	5.00	1	10/15/2019 04:18	WG1362918
Benzene	U		0.0896	0.500	1	10/15/2019 04:18	WG1362918
Bromobenzene	U		0.133	0.500	1	10/15/2019 04:18	WG1362918
Bromodichloromethane	U		0.0800	0.500	1	10/15/2019 04:18	WG1362918
Bromochloromethane	U		0.145	0.500	1	10/15/2019 04:18	WG1362918
Bromoform	U		0.186	0.500	1	10/15/2019 04:18	WG1362918
Bromomethane	U		0.157	2.50	1	10/15/2019 04:18	WG1362918
n-Butylbenzene	U		0.143	0.500	1	10/15/2019 04:18	WG1362918
sec-Butylbenzene	U		0.134	0.500	1	10/15/2019 04:18	WG1362918
tert-Butylbenzene	U		0.183	0.500	1	10/15/2019 04:18	WG1362918
Carbon disulfide	U		0.101	0.500	1	10/15/2019 04:18	WG1362918
Carbon tetrachloride	U		0.159	0.500	1	10/15/2019 04:18	WG1362918
Chlorobenzene	U		0.140	0.500	1	10/15/2019 04:18	WG1362918
Chlorodibromomethane	U		0.128	0.500	1	10/15/2019 04:18	WG1362918
Chloroethane	U		0.141	2.50	1	10/15/2019 04:18	WG1362918
Chloroform	U		0.0860	0.500	1	10/15/2019 04:18	WG1362918
Chloromethane	U		0.153	1.25	1	10/15/2019 04:18	WG1362918
2-Chlorotoluene	U		0.111	0.500	1	10/15/2019 04:18	WG1362918
4-Chlorotoluene	U		0.0972	0.500	1	10/15/2019 04:18	WG1362918

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/15/2019 04:18	WG1362918
1,2-Dibromoethane	U		0.193	0.500	1	10/15/2019 04:18	WG1362918
Dibromomethane	U		0.117	0.500	1	10/15/2019 04:18	WG1362918
1,2-Dichlorobenzene	U		0.101	0.500	1	10/15/2019 04:18	WG1362918
1,3-Dichlorobenzene	U		0.130	0.500	1	10/15/2019 04:18	WG1362918
1,4-Dichlorobenzene	U		0.121	0.500	1	10/15/2019 04:18	WG1362918
Dichlorodifluoromethane	U		0.127	2.50	1	10/15/2019 04:18	WG1362918
1,1-Dichloroethane	U		0.114	0.500	1	10/15/2019 04:18	WG1362918
1,2-Dichloroethane	U		0.108	0.500	1	10/15/2019 04:18	WG1362918
1,1-Dichloroethene	U		0.188	0.500	1	10/15/2019 04:18	WG1362918
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/15/2019 17:27	WG1363245
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/15/2019 04:18	WG1362918
1,2-Dichloropropane	U		0.190	0.500	1	10/15/2019 04:18	WG1362918
1,1-Dichloropropene	U		0.128	0.500	1	10/15/2019 04:18	WG1362918
1,3-Dichloropropane	U		0.147	1.00	1	10/15/2019 04:18	WG1362918
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/15/2019 04:18	WG1362918
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/15/2019 04:18	WG1362918
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/15/2019 04:18	WG1362918
2,2-Dichloropropane	U		0.0929	0.500	1	10/15/2019 04:18	WG1362918
Di-isopropyl ether	U		0.0924	0.500	1	10/15/2019 04:18	WG1362918
Ethylbenzene	U		0.158	0.500	1	10/15/2019 04:18	WG1362918
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/15/2019 04:18	WG1362918
2-Hexanone	U		0.757	5.00	1	10/15/2019 04:18	WG1362918
n-Hexane	U		0.305	5.00	1	10/15/2019 04:18	WG1362918
Iodomethane	U		0.377	10.0	1	10/15/2019 04:18	WG1362918
Isopropylbenzene	U		0.126	0.500	1	10/15/2019 04:18	WG1362918
p-Isopropyltoluene	U		0.138	0.500	1	10/15/2019 04:18	WG1362918
2-Butanone (MEK)	U		1.28	5.00	1	10/15/2019 04:18	WG1362918
Methylene Chloride	U		1.07	2.50	1	10/15/2019 04:18	WG1362918
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/15/2019 04:18	WG1362918
Methyl tert-butyl ether	U		0.102	0.500	1	10/15/2019 04:18	WG1362918
Naphthalene	U		0.174	2.50	1	10/15/2019 04:18	WG1362918
n-Propylbenzene	U		0.162	0.500	1	10/15/2019 04:18	WG1362918
Styrene	U		0.117	0.500	1	10/15/2019 04:18	WG1362918
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/15/2019 04:18	WG1362918
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/15/2019 04:18	WG1362918
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/15/2019 04:18	WG1362918
Tetrachloroethene	U		0.199	0.500	1	10/15/2019 04:18	WG1362918
Toluene	U		0.412	0.500	1	10/15/2019 04:18	WG1362918
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/15/2019 04:18	WG1362918
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/15/2019 04:18	WG1362918
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/15/2019 04:18	WG1362918
1,1,2-Trichloroethane	U		0.186	0.500	1	10/15/2019 04:18	WG1362918
Trichloroethene	U		0.153	0.500	1	10/15/2019 04:18	WG1362918
Trichlorofluoromethane	U		0.130	2.50	1	10/15/2019 04:18	WG1362918
1,2,3-Trichloropropane	U		0.247	2.50	1	10/15/2019 04:18	WG1362918
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/15/2019 04:18	WG1362918
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/15/2019 04:18	WG1362918
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/15/2019 04:18	WG1362918
Vinyl acetate	U		0.645	5.00	1	10/15/2019 04:18	WG1362918
Vinyl chloride	U		0.118	0.500	1	10/15/2019 04:18	WG1362918
Xylenes, Total	U		0.316	1.50	1	10/15/2019 04:18	WG1362918
(S) Toluene-d8	101			80.0-120		10/15/2019 04:18	WG1362918
(S) Toluene-d8	95.9			80.0-120		10/15/2019 17:27	WG1363245
(S) 4-Bromofluorobenzene	103			77.0-126		10/15/2019 04:18	WG1362918
(S) 4-Bromofluorobenzene	94.3			77.0-126		10/15/2019 17:27	WG1363245

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	109			70.0-130		10/15/2019 04:18	WG1362918
(S) 1,2-Dichloroethane-d4	83.9			70.0-130		10/15/2019 17:27	WG1363245

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	589000		2710	20000	1	10/13/2019 15:38	WG1362246

Sample Narrative:

L1146788-07 WG1362246: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	56100		51.9	1000	1	10/05/2019 19:51	WG1357983
Nitrate	U	T8	22.7	100	1	10/05/2019 19:51	WG1357983
Sulfate	11400		77.4	5000	1	10/05/2019 19:51	WG1357983

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	5050	B	102	1000	1	10/11/2019 15:37	WG1361291

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	8060		300	2000	20	10/09/2019 11:17	WG1358528
Manganese	2260		5.00	100	20	10/09/2019 11:17	WG1358528

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	716		0.287	0.678	1	10/10/2019 14:44	WG1360431
Ethane	23.4		0.296	1.29	1	10/10/2019 14:44	WG1360431
Ethene	U		0.422	1.27	1	10/10/2019 14:44	WG1360431

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	3.08	J JO	1.05	25.0	1	10/15/2019 04:39	WG1362918
Acrylonitrile	U		0.873	5.00	1	10/15/2019 04:39	WG1362918
Benzene	0.215	J	0.0896	0.500	1	10/15/2019 04:39	WG1362918
Bromobenzene	U		0.133	0.500	1	10/15/2019 04:39	WG1362918
Bromodichloromethane	U		0.0800	0.500	1	10/15/2019 04:39	WG1362918
Bromochloromethane	U		0.145	0.500	1	10/15/2019 04:39	WG1362918
Bromoform	U		0.186	0.500	1	10/15/2019 04:39	WG1362918
Bromomethane	U		0.157	2.50	1	10/15/2019 04:39	WG1362918
n-Butylbenzene	U		0.143	0.500	1	10/15/2019 04:39	WG1362918
sec-Butylbenzene	U		0.134	0.500	1	10/15/2019 04:39	WG1362918
tert-Butylbenzene	U		0.183	0.500	1	10/15/2019 04:39	WG1362918
Carbon disulfide	U		0.101	0.500	1	10/15/2019 04:39	WG1362918
Carbon tetrachloride	U		0.159	0.500	1	10/15/2019 04:39	WG1362918
Chlorobenzene	U		0.140	0.500	1	10/15/2019 04:39	WG1362918
Chlorodibromomethane	U		0.128	0.500	1	10/15/2019 04:39	WG1362918
Chloroethane	U		0.141	2.50	1	10/15/2019 04:39	WG1362918
Chloroform	U		0.0860	0.500	1	10/15/2019 04:39	WG1362918
Chloromethane	U		0.153	1.25	1	10/15/2019 04:39	WG1362918
2-Chlorotoluene	U		0.111	0.500	1	10/15/2019 04:39	WG1362918
4-Chlorotoluene	U		0.0972	0.500	1	10/15/2019 04:39	WG1362918

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/03/19 10:10

L1146788

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/15/2019 04:39	WG1362918
1,2-Dibromoethane	U		0.193	0.500	1	10/15/2019 04:39	WG1362918
Dibromomethane	U		0.117	0.500	1	10/15/2019 04:39	WG1362918
1,2-Dichlorobenzene	U		0.101	0.500	1	10/15/2019 04:39	WG1362918
1,3-Dichlorobenzene	U		0.130	0.500	1	10/15/2019 04:39	WG1362918
1,4-Dichlorobenzene	U		0.121	0.500	1	10/15/2019 04:39	WG1362918
Dichlorodifluoromethane	U		0.127	2.50	1	10/15/2019 04:39	WG1362918
1,1-Dichloroethane	U		0.114	0.500	1	10/15/2019 04:39	WG1362918
1,2-Dichloroethane	U		0.108	0.500	1	10/15/2019 04:39	WG1362918
1,1-Dichloroethene	U		0.188	0.500	1	10/15/2019 04:39	WG1362918
cis-1,2-Dichloroethene	9.26		0.0933	0.500	1	10/15/2019 04:39	WG1362918
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/15/2019 04:39	WG1362918
1,2-Dichloropropane	U		0.190	0.500	1	10/15/2019 04:39	WG1362918
1,1-Dichloropropene	U		0.128	0.500	1	10/15/2019 04:39	WG1362918
1,3-Dichloropropane	U		0.147	1.00	1	10/15/2019 04:39	WG1362918
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/15/2019 04:39	WG1362918
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/15/2019 04:39	WG1362918
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/15/2019 04:39	WG1362918
2,2-Dichloropropane	U		0.0929	0.500	1	10/15/2019 04:39	WG1362918
Di-isopropyl ether	U		0.0924	0.500	1	10/15/2019 04:39	WG1362918
Ethylbenzene	U		0.158	0.500	1	10/15/2019 04:39	WG1362918
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/15/2019 04:39	WG1362918
2-Hexanone	U		0.757	5.00	1	10/15/2019 04:39	WG1362918
n-Hexane	U		0.305	5.00	1	10/15/2019 04:39	WG1362918
Iodomethane	U		0.377	10.0	1	10/15/2019 04:39	WG1362918
Isopropylbenzene	U		0.126	0.500	1	10/15/2019 04:39	WG1362918
p-Isopropyltoluene	U		0.138	0.500	1	10/15/2019 04:39	WG1362918
2-Butanone (MEK)	U		1.28	5.00	1	10/15/2019 04:39	WG1362918
Methylene Chloride	U		1.07	2.50	1	10/15/2019 04:39	WG1362918
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/15/2019 04:39	WG1362918
Methyl tert-butyl ether	U		0.102	0.500	1	10/15/2019 04:39	WG1362918
Naphthalene	U		0.174	2.50	1	10/15/2019 04:39	WG1362918
n-Propylbenzene	U		0.162	0.500	1	10/15/2019 04:39	WG1362918
Styrene	U		0.117	0.500	1	10/15/2019 04:39	WG1362918
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/15/2019 04:39	WG1362918
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/15/2019 04:39	WG1362918
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/15/2019 04:39	WG1362918
Tetrachloroethene	U		0.199	0.500	1	10/15/2019 04:39	WG1362918
Toluene	U		0.412	0.500	1	10/15/2019 04:39	WG1362918
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/15/2019 04:39	WG1362918
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/15/2019 04:39	WG1362918
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/15/2019 04:39	WG1362918
1,1,2-Trichloroethane	U		0.186	0.500	1	10/15/2019 04:39	WG1362918
Trichloroethene	U		0.153	0.500	1	10/15/2019 04:39	WG1362918
Trichlorofluoromethane	U		0.130	2.50	1	10/15/2019 04:39	WG1362918
1,2,3-Trichloropropane	U		0.247	2.50	1	10/15/2019 04:39	WG1362918
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/15/2019 04:39	WG1362918
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/15/2019 04:39	WG1362918
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/15/2019 04:39	WG1362918
Vinyl acetate	U		0.645	5.00	1	10/15/2019 04:39	WG1362918
Vinyl chloride	29.2		0.118	0.500	1	10/15/2019 04:39	WG1362918
Xylenes, Total	U		0.316	1.50	1	10/15/2019 04:39	WG1362918
(S) Toluene-d8	102			80.0-120		10/15/2019 04:39	WG1362918
(S) 4-Bromofluorobenzene	104			77.0-126		10/15/2019 04:39	WG1362918
(S) 1,2-Dichloroethane-d4	109			70.0-130		10/15/2019 04:39	WG1362918

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	235000		2710	20000	1	10/13/2019 15:53	WG1362246

Sample Narrative:

L1146788-08 WG1362246: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	21500		51.9	1000	1	10/05/2019 20:07	WG1357983
Nitrate	788	<u>T8</u>	22.7	100	1	10/05/2019 20:07	WG1357983
Sulfate	112000		387	25000	5	10/07/2019 10:06	WG1357983

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	3280	<u>B</u>	102	1000	1	10/11/2019 17:36	WG1361291

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	701		15.0	100	1	10/09/2019 00:43	WG1358528
Manganese	865		1.25	25.0	5	10/09/2019 11:20	WG1358528

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	31.7		0.287	0.678	1	10/10/2019 14:46	WG1360431
Ethane	U		0.296	1.29	1	10/10/2019 14:46	WG1360431
Ethene	U		0.422	1.27	1	10/10/2019 14:46	WG1360431

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.57	<u>J JO</u>	1.05	25.0	1	10/15/2019 04:59	WG1362918
Acrylonitrile	U		0.873	5.00	1	10/15/2019 04:59	WG1362918
Benzene	U		0.0896	0.500	1	10/15/2019 04:59	WG1362918
Bromobenzene	U		0.133	0.500	1	10/15/2019 04:59	WG1362918
Bromodichloromethane	U		0.0800	0.500	1	10/15/2019 04:59	WG1362918
Bromochloromethane	U		0.145	0.500	1	10/15/2019 04:59	WG1362918
Bromoform	U		0.186	0.500	1	10/15/2019 04:59	WG1362918
Bromomethane	U		0.157	2.50	1	10/15/2019 04:59	WG1362918
n-Butylbenzene	U		0.143	0.500	1	10/15/2019 04:59	WG1362918
sec-Butylbenzene	U		0.134	0.500	1	10/15/2019 04:59	WG1362918
tert-Butylbenzene	U		0.183	0.500	1	10/15/2019 04:59	WG1362918
Carbon disulfide	U		0.101	0.500	1	10/15/2019 04:59	WG1362918
Carbon tetrachloride	U		0.159	0.500	1	10/15/2019 04:59	WG1362918
Chlorobenzene	U		0.140	0.500	1	10/15/2019 04:59	WG1362918
Chlorodibromomethane	U		0.128	0.500	1	10/15/2019 04:59	WG1362918
Chloroethane	U		0.141	2.50	1	10/15/2019 04:59	WG1362918
Chloroform	U		0.0860	0.500	1	10/15/2019 04:59	WG1362918
Chloromethane	U		0.153	1.25	1	10/15/2019 04:59	WG1362918
2-Chlorotoluene	U		0.111	0.500	1	10/15/2019 04:59	WG1362918
4-Chlorotoluene	U		0.0972	0.500	1	10/15/2019 04:59	WG1362918

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/15/2019 04:59	WG1362918
1,2-Dibromoethane	U		0.193	0.500	1	10/15/2019 04:59	WG1362918
Dibromomethane	U		0.117	0.500	1	10/15/2019 04:59	WG1362918
1,2-Dichlorobenzene	U		0.101	0.500	1	10/15/2019 04:59	WG1362918
1,3-Dichlorobenzene	U		0.130	0.500	1	10/15/2019 04:59	WG1362918
1,4-Dichlorobenzene	U		0.121	0.500	1	10/15/2019 04:59	WG1362918
Dichlorodifluoromethane	U		0.127	2.50	1	10/15/2019 04:59	WG1362918
1,1-Dichloroethane	U		0.114	0.500	1	10/15/2019 04:59	WG1362918
1,2-Dichloroethane	U		0.108	0.500	1	10/15/2019 04:59	WG1362918
1,1-Dichloroethene	U		0.188	0.500	1	10/15/2019 04:59	WG1362918
cis-1,2-Dichloroethene	0.607		0.0933	0.500	1	10/15/2019 04:59	WG1362918
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/15/2019 04:59	WG1362918
1,2-Dichloropropane	U		0.190	0.500	1	10/15/2019 04:59	WG1362918
1,1-Dichloropropene	U		0.128	0.500	1	10/15/2019 04:59	WG1362918
1,3-Dichloropropane	U		0.147	1.00	1	10/15/2019 04:59	WG1362918
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/15/2019 04:59	WG1362918
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/15/2019 04:59	WG1362918
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/15/2019 04:59	WG1362918
2,2-Dichloropropane	U		0.0929	0.500	1	10/15/2019 04:59	WG1362918
Di-isopropyl ether	U		0.0924	0.500	1	10/15/2019 04:59	WG1362918
Ethylbenzene	U		0.158	0.500	1	10/15/2019 04:59	WG1362918
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/15/2019 04:59	WG1362918
2-Hexanone	U		0.757	5.00	1	10/15/2019 04:59	WG1362918
n-Hexane	U		0.305	5.00	1	10/15/2019 04:59	WG1362918
Iodomethane	U		0.377	10.0	1	10/15/2019 04:59	WG1362918
Isopropylbenzene	U		0.126	0.500	1	10/15/2019 04:59	WG1362918
p-Isopropyltoluene	U		0.138	0.500	1	10/15/2019 04:59	WG1362918
2-Butanone (MEK)	U		1.28	5.00	1	10/15/2019 04:59	WG1362918
Methylene Chloride	U		1.07	2.50	1	10/15/2019 04:59	WG1362918
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/15/2019 04:59	WG1362918
Methyl tert-butyl ether	U		0.102	0.500	1	10/15/2019 04:59	WG1362918
Naphthalene	U		0.174	2.50	1	10/15/2019 04:59	WG1362918
n-Propylbenzene	U		0.162	0.500	1	10/15/2019 04:59	WG1362918
Styrene	U		0.117	0.500	1	10/15/2019 04:59	WG1362918
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/15/2019 04:59	WG1362918
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/15/2019 04:59	WG1362918
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/15/2019 04:59	WG1362918
Tetrachloroethene	U		0.199	0.500	1	10/15/2019 04:59	WG1362918
Toluene	U		0.412	0.500	1	10/15/2019 04:59	WG1362918
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/15/2019 04:59	WG1362918
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/15/2019 04:59	WG1362918
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/15/2019 04:59	WG1362918
1,1,2-Trichloroethane	U		0.186	0.500	1	10/15/2019 04:59	WG1362918
Trichloroethene	U		0.153	0.500	1	10/15/2019 04:59	WG1362918
Trichlorofluoromethane	U		0.130	2.50	1	10/15/2019 04:59	WG1362918
1,2,3-Trichloropropane	U		0.247	2.50	1	10/15/2019 04:59	WG1362918
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/15/2019 04:59	WG1362918
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/15/2019 04:59	WG1362918
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/15/2019 04:59	WG1362918
Vinyl acetate	U		0.645	5.00	1	10/15/2019 04:59	WG1362918
Vinyl chloride	U		0.118	0.500	1	10/15/2019 04:59	WG1362918
Xylenes, Total	U		0.316	1.50	1	10/15/2019 04:59	WG1362918
(S) Toluene-d8	102			80.0-120		10/15/2019 04:59	WG1362918
(S) 4-Bromofluorobenzene	103			77.0-126		10/15/2019 04:59	WG1362918
(S) 1,2-Dichloroethane-d4	110			70.0-130		10/15/2019 04:59	WG1362918

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	209000		2710	20000	1	10/13/2019 16:00	WG1362246

Sample Narrative:

L1146788-09 WG1362246: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	17100		51.9	1000	1	10/05/2019 20:56	WG1357983
Nitrate	U	T8	22.7	100	1	10/05/2019 20:56	WG1357983
Sulfate	89700		77.4	5000	1	10/05/2019 20:56	WG1357983

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	12900		102	1000	1	10/11/2019 17:55	WG1361291

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	2630		75.0	500	5	10/09/2019 11:24	WG1358528
Manganese	347		1.25	25.0	5	10/09/2019 11:24	WG1358528

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	99.4		0.287	0.678	1	10/10/2019 14:49	WG1360431
Ethane	25.0		0.296	1.29	1	10/10/2019 14:49	WG1360431
Ethene	8.23		0.422	1.27	1	10/10/2019 14:49	WG1360431

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	4.34	J JO	1.05	25.0	1	10/15/2019 05:20	WG1362918
Acrylonitrile	U		0.873	5.00	1	10/15/2019 05:20	WG1362918
Benzene	U		0.0896	0.500	1	10/15/2019 05:20	WG1362918
Bromobenzene	U		0.133	0.500	1	10/15/2019 05:20	WG1362918
Bromodichloromethane	U		0.0800	0.500	1	10/15/2019 05:20	WG1362918
Bromochloromethane	U		0.145	0.500	1	10/15/2019 05:20	WG1362918
Bromoform	U		0.186	0.500	1	10/15/2019 05:20	WG1362918
Bromomethane	U		0.157	2.50	1	10/15/2019 05:20	WG1362918
n-Butylbenzene	U		0.143	0.500	1	10/15/2019 05:20	WG1362918
sec-Butylbenzene	U		0.134	0.500	1	10/15/2019 05:20	WG1362918
tert-Butylbenzene	U		0.183	0.500	1	10/15/2019 05:20	WG1362918
Carbon disulfide	4.09		0.101	0.500	1	10/15/2019 05:20	WG1362918
Carbon tetrachloride	U		0.159	0.500	1	10/15/2019 05:20	WG1362918
Chlorobenzene	U		0.140	0.500	1	10/15/2019 05:20	WG1362918
Chlorodibromomethane	U		0.128	0.500	1	10/15/2019 05:20	WG1362918
Chloroethane	U		0.141	2.50	1	10/15/2019 05:20	WG1362918
Chloroform	U		0.0860	0.500	1	10/15/2019 05:20	WG1362918
Chloromethane	U		0.153	1.25	1	10/15/2019 05:20	WG1362918
2-Chlorotoluene	U		0.111	0.500	1	10/15/2019 05:20	WG1362918
4-Chlorotoluene	U		0.0972	0.500	1	10/15/2019 05:20	WG1362918

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/03/19 12:30

L1146788

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/15/2019 05:20	WG1362918
1,2-Dibromoethane	U		0.193	0.500	1	10/15/2019 05:20	WG1362918
Dibromomethane	U		0.117	0.500	1	10/15/2019 05:20	WG1362918
1,2-Dichlorobenzene	U		0.101	0.500	1	10/15/2019 05:20	WG1362918
1,3-Dichlorobenzene	U		0.130	0.500	1	10/15/2019 05:20	WG1362918
1,4-Dichlorobenzene	U		0.121	0.500	1	10/15/2019 05:20	WG1362918
Dichlorodifluoromethane	U		0.127	2.50	1	10/15/2019 05:20	WG1362918
1,1-Dichloroethane	U		0.114	0.500	1	10/15/2019 05:20	WG1362918
1,2-Dichloroethane	U		0.108	0.500	1	10/15/2019 05:20	WG1362918
1,1-Dichloroethene	U		0.188	0.500	1	10/15/2019 05:20	WG1362918
cis-1,2-Dichloroethene	6.87		0.0933	0.500	1	10/15/2019 05:20	WG1362918
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/15/2019 05:20	WG1362918
1,2-Dichloropropane	U		0.190	0.500	1	10/15/2019 05:20	WG1362918
1,1-Dichloropropene	U		0.128	0.500	1	10/15/2019 05:20	WG1362918
1,3-Dichloropropane	U		0.147	1.00	1	10/15/2019 05:20	WG1362918
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/15/2019 05:20	WG1362918
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/15/2019 05:20	WG1362918
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/15/2019 05:20	WG1362918
2,2-Dichloropropane	U		0.0929	0.500	1	10/15/2019 05:20	WG1362918
Di-isopropyl ether	U		0.0924	0.500	1	10/15/2019 05:20	WG1362918
Ethylbenzene	U		0.158	0.500	1	10/15/2019 05:20	WG1362918
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/15/2019 05:20	WG1362918
2-Hexanone	U		0.757	5.00	1	10/15/2019 05:20	WG1362918
n-Hexane	U		0.305	5.00	1	10/15/2019 05:20	WG1362918
Iodomethane	U		0.377	10.0	1	10/15/2019 05:20	WG1362918
Isopropylbenzene	U		0.126	0.500	1	10/15/2019 05:20	WG1362918
p-Isopropyltoluene	U		0.138	0.500	1	10/15/2019 05:20	WG1362918
2-Butanone (MEK)	U		1.28	5.00	1	10/15/2019 05:20	WG1362918
Methylene Chloride	U		1.07	2.50	1	10/15/2019 05:20	WG1362918
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/15/2019 05:20	WG1362918
Methyl tert-butyl ether	U		0.102	0.500	1	10/15/2019 05:20	WG1362918
Naphthalene	U		0.174	2.50	1	10/15/2019 05:20	WG1362918
n-Propylbenzene	U		0.162	0.500	1	10/15/2019 05:20	WG1362918
Styrene	U		0.117	0.500	1	10/15/2019 05:20	WG1362918
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/15/2019 05:20	WG1362918
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/15/2019 05:20	WG1362918
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/15/2019 05:20	WG1362918
Tetrachloroethene	0.769		0.199	0.500	1	10/15/2019 05:20	WG1362918
Toluene	1.31		0.412	0.500	1	10/15/2019 05:20	WG1362918
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/15/2019 05:20	WG1362918
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/15/2019 05:20	WG1362918
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/15/2019 05:20	WG1362918
1,1,2-Trichloroethane	U		0.186	0.500	1	10/15/2019 05:20	WG1362918
Trichloroethene	0.297	U	0.153	0.500	1	10/15/2019 05:20	WG1362918
Trichlorofluoromethane	U		0.130	2.50	1	10/15/2019 05:20	WG1362918
1,2,3-Trichloropropane	U		0.247	2.50	1	10/15/2019 05:20	WG1362918
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/15/2019 05:20	WG1362918
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/15/2019 05:20	WG1362918
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/15/2019 05:20	WG1362918
Vinyl acetate	U		0.645	5.00	1	10/15/2019 05:20	WG1362918
Vinyl chloride	U		0.118	0.500	1	10/15/2019 05:20	WG1362918
Xylenes, Total	U		0.316	1.50	1	10/15/2019 05:20	WG1362918
(S) Toluene-d8	103			80.0-120		10/15/2019 05:20	WG1362918
(S) 4-Bromofluorobenzene	103			77.0-126		10/15/2019 05:20	WG1362918
(S) 1,2-Dichloroethane-d4	109			70.0-130		10/15/2019 05:20	WG1362918

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	581000		2710	20000	1	10/13/2019 16:07	WG1362246

Sample Narrative:

L1146788-10 WG1362246: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	56100		51.9	1000	1	10/05/2019 14:53	WG1357983
Nitrate	U	T8	22.7	100	1	10/05/2019 14:53	WG1357983
Sulfate	11400		77.4	5000	1	10/05/2019 14:53	WG1357983

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	4820	B	102	1000	1	10/11/2019 18:16	WG1361291

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	7710		300	2000	20	10/09/2019 11:28	WG1358528
Manganese	2210		5.00	100	20	10/09/2019 11:28	WG1358528

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	591		0.287	0.678	1	10/10/2019 14:51	WG1360431
Ethane	19.9		0.296	1.29	1	10/10/2019 14:51	WG1360431
Ethene	U		0.422	1.27	1	10/10/2019 14:51	WG1360431

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	3.15	J JO	1.05	25.0	1	10/15/2019 05:41	WG1362918
Acrylonitrile	U		0.873	5.00	1	10/15/2019 05:41	WG1362918
Benzene	0.206	J	0.0896	0.500	1	10/15/2019 05:41	WG1362918
Bromobenzene	U		0.133	0.500	1	10/15/2019 05:41	WG1362918
Bromodichloromethane	U		0.0800	0.500	1	10/15/2019 05:41	WG1362918
Bromochloromethane	U		0.145	0.500	1	10/15/2019 05:41	WG1362918
Bromoform	U		0.186	0.500	1	10/15/2019 05:41	WG1362918
Bromomethane	U		0.157	2.50	1	10/15/2019 05:41	WG1362918
n-Butylbenzene	U		0.143	0.500	1	10/15/2019 05:41	WG1362918
sec-Butylbenzene	U		0.134	0.500	1	10/15/2019 05:41	WG1362918
tert-Butylbenzene	U		0.183	0.500	1	10/15/2019 05:41	WG1362918
Carbon disulfide	U		0.101	0.500	1	10/15/2019 05:41	WG1362918
Carbon tetrachloride	U		0.159	0.500	1	10/15/2019 05:41	WG1362918
Chlorobenzene	U		0.140	0.500	1	10/15/2019 05:41	WG1362918
Chlorodibromomethane	U		0.128	0.500	1	10/15/2019 05:41	WG1362918
Chloroethane	U		0.141	2.50	1	10/15/2019 05:41	WG1362918
Chloroform	U		0.0860	0.500	1	10/15/2019 05:41	WG1362918
Chloromethane	U		0.153	1.25	1	10/15/2019 05:41	WG1362918
2-Chlorotoluene	U		0.111	0.500	1	10/15/2019 05:41	WG1362918
4-Chlorotoluene	U		0.0972	0.500	1	10/15/2019 05:41	WG1362918

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/15/2019 05:41	WG1362918
1,2-Dibromoethane	U		0.193	0.500	1	10/15/2019 05:41	WG1362918
Dibromomethane	U		0.117	0.500	1	10/15/2019 05:41	WG1362918
1,2-Dichlorobenzene	U		0.101	0.500	1	10/15/2019 05:41	WG1362918
1,3-Dichlorobenzene	U		0.130	0.500	1	10/15/2019 05:41	WG1362918
1,4-Dichlorobenzene	U		0.121	0.500	1	10/15/2019 05:41	WG1362918
Dichlorodifluoromethane	U		0.127	2.50	1	10/15/2019 05:41	WG1362918
1,1-Dichloroethane	U		0.114	0.500	1	10/15/2019 05:41	WG1362918
1,2-Dichloroethane	U		0.108	0.500	1	10/15/2019 05:41	WG1362918
1,1-Dichloroethene	U		0.188	0.500	1	10/15/2019 05:41	WG1362918
cis-1,2-Dichloroethene	9.25		0.0933	0.500	1	10/15/2019 05:41	WG1362918
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/15/2019 05:41	WG1362918
1,2-Dichloropropane	U		0.190	0.500	1	10/15/2019 05:41	WG1362918
1,1-Dichloropropene	U		0.128	0.500	1	10/15/2019 05:41	WG1362918
1,3-Dichloropropane	U		0.147	1.00	1	10/15/2019 05:41	WG1362918
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/15/2019 05:41	WG1362918
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/15/2019 05:41	WG1362918
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/15/2019 05:41	WG1362918
2,2-Dichloropropane	U		0.0929	0.500	1	10/15/2019 05:41	WG1362918
Di-isopropyl ether	U		0.0924	0.500	1	10/15/2019 05:41	WG1362918
Ethylbenzene	U		0.158	0.500	1	10/15/2019 05:41	WG1362918
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/15/2019 05:41	WG1362918
2-Hexanone	U		0.757	5.00	1	10/15/2019 05:41	WG1362918
n-Hexane	U		0.305	5.00	1	10/15/2019 05:41	WG1362918
Iodomethane	U		0.377	10.0	1	10/15/2019 05:41	WG1362918
Isopropylbenzene	U		0.126	0.500	1	10/15/2019 05:41	WG1362918
p-Isopropyltoluene	U		0.138	0.500	1	10/15/2019 05:41	WG1362918
2-Butanone (MEK)	U		1.28	5.00	1	10/15/2019 05:41	WG1362918
Methylene Chloride	U		1.07	2.50	1	10/15/2019 05:41	WG1362918
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/15/2019 05:41	WG1362918
Methyl tert-butyl ether	U		0.102	0.500	1	10/15/2019 05:41	WG1362918
Naphthalene	U		0.174	2.50	1	10/15/2019 05:41	WG1362918
n-Propylbenzene	U		0.162	0.500	1	10/15/2019 05:41	WG1362918
Styrene	U		0.117	0.500	1	10/15/2019 05:41	WG1362918
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/15/2019 05:41	WG1362918
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/15/2019 05:41	WG1362918
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/15/2019 05:41	WG1362918
Tetrachloroethene	U		0.199	0.500	1	10/15/2019 05:41	WG1362918
Toluene	0.435	U	0.412	0.500	1	10/15/2019 05:41	WG1362918
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/15/2019 05:41	WG1362918
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/15/2019 05:41	WG1362918
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/15/2019 05:41	WG1362918
1,1,2-Trichloroethane	U		0.186	0.500	1	10/15/2019 05:41	WG1362918
Trichloroethene	U		0.153	0.500	1	10/15/2019 05:41	WG1362918
Trichlorofluoromethane	U		0.130	2.50	1	10/15/2019 05:41	WG1362918
1,2,3-Trichloropropane	U		0.247	2.50	1	10/15/2019 05:41	WG1362918
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/15/2019 05:41	WG1362918
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/15/2019 05:41	WG1362918
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/15/2019 05:41	WG1362918
Vinyl acetate	U		0.645	5.00	1	10/15/2019 05:41	WG1362918
Vinyl chloride	28.8		0.118	0.500	1	10/15/2019 05:41	WG1362918
Xylenes, Total	U		0.316	1.50	1	10/15/2019 05:41	WG1362918
(S) Toluene-d8	102			80.0-120		10/15/2019 05:41	WG1362918
(S) 4-Bromofluorobenzene	104			77.0-126		10/15/2019 05:41	WG1362918
(S) 1,2-Dichloroethane-d4	108			70.0-130		10/15/2019 05:41	WG1362918

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Collected date/time: 10/03/19 00:00

L1146788

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.20	J JO	1.05	25.0	1	10/15/2019 01:32	WG1362918
Acrylonitrile	U		0.873	5.00	1	10/15/2019 01:32	WG1362918
Benzene	U		0.0896	0.500	1	10/15/2019 01:32	WG1362918
Bromobenzene	U		0.133	0.500	1	10/15/2019 01:32	WG1362918
Bromodichloromethane	U		0.0800	0.500	1	10/15/2019 01:32	WG1362918
Bromochloromethane	U		0.145	0.500	1	10/15/2019 01:32	WG1362918
Bromoform	U		0.186	0.500	1	10/15/2019 01:32	WG1362918
Bromomethane	U		0.157	2.50	1	10/15/2019 01:32	WG1362918
n-Butylbenzene	U		0.143	0.500	1	10/15/2019 01:32	WG1362918
sec-Butylbenzene	U		0.134	0.500	1	10/15/2019 01:32	WG1362918
tert-Butylbenzene	U		0.183	0.500	1	10/15/2019 01:32	WG1362918
Carbon disulfide	U		0.101	0.500	1	10/15/2019 01:32	WG1362918
Carbon tetrachloride	U		0.159	0.500	1	10/15/2019 01:32	WG1362918
Chlorobenzene	U		0.140	0.500	1	10/15/2019 01:32	WG1362918
Chlorodibromomethane	U		0.128	0.500	1	10/15/2019 01:32	WG1362918
Chloroethane	U		0.141	2.50	1	10/15/2019 01:32	WG1362918
Chloroform	U		0.0860	0.500	1	10/15/2019 01:32	WG1362918
Chloromethane	U		0.153	1.25	1	10/15/2019 01:32	WG1362918
2-Chlorotoluene	U		0.111	0.500	1	10/15/2019 01:32	WG1362918
4-Chlorotoluene	U		0.0972	0.500	1	10/15/2019 01:32	WG1362918
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/15/2019 01:32	WG1362918
1,2-Dibromoethane	U		0.193	0.500	1	10/15/2019 01:32	WG1362918
Dibromomethane	U		0.117	0.500	1	10/15/2019 01:32	WG1362918
1,2-Dichlorobenzene	U		0.101	0.500	1	10/15/2019 01:32	WG1362918
1,3-Dichlorobenzene	U		0.130	0.500	1	10/15/2019 01:32	WG1362918
1,4-Dichlorobenzene	U		0.121	0.500	1	10/15/2019 01:32	WG1362918
Dichlorodifluoromethane	U		0.127	2.50	1	10/15/2019 01:32	WG1362918
1,1-Dichloroethane	U		0.114	0.500	1	10/15/2019 01:32	WG1362918
1,2-Dichloroethane	U		0.108	0.500	1	10/15/2019 01:32	WG1362918
1,1-Dichloroethene	U		0.188	0.500	1	10/15/2019 01:32	WG1362918
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/15/2019 01:32	WG1362918
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/15/2019 01:32	WG1362918
1,2-Dichloropropane	U		0.190	0.500	1	10/15/2019 01:32	WG1362918
1,1-Dichloropropene	U		0.128	0.500	1	10/15/2019 01:32	WG1362918
1,3-Dichloropropane	U		0.147	1.00	1	10/15/2019 01:32	WG1362918
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/15/2019 01:32	WG1362918
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/15/2019 01:32	WG1362918
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/15/2019 01:32	WG1362918
2,2-Dichloropropane	U		0.0929	0.500	1	10/15/2019 01:32	WG1362918
Di-isopropyl ether	U		0.0924	0.500	1	10/15/2019 01:32	WG1362918
Ethylbenzene	U		0.158	0.500	1	10/15/2019 01:32	WG1362918
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/15/2019 01:32	WG1362918
2-Hexanone	U		0.757	5.00	1	10/15/2019 01:32	WG1362918
n-Hexane	U		0.305	5.00	1	10/15/2019 01:32	WG1362918
Iodomethane	U		0.377	10.0	1	10/15/2019 01:32	WG1362918
Isopropylbenzene	U		0.126	0.500	1	10/15/2019 01:32	WG1362918
p-Isopropyltoluene	U		0.138	0.500	1	10/15/2019 01:32	WG1362918
2-Butanone (MEK)	U		1.28	5.00	1	10/15/2019 01:32	WG1362918
Methylene Chloride	U		1.07	2.50	1	10/15/2019 01:32	WG1362918
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/15/2019 01:32	WG1362918
Methyl tert-butyl ether	U		0.102	0.500	1	10/15/2019 01:32	WG1362918
Naphthalene	U		0.174	2.50	1	10/15/2019 01:32	WG1362918
n-Propylbenzene	U		0.162	0.500	1	10/15/2019 01:32	WG1362918
Styrene	U		0.117	0.500	1	10/15/2019 01:32	WG1362918
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/15/2019 01:32	WG1362918
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/15/2019 01:32	WG1362918

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/03/19 00:00

L1146788

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/15/2019 01:32	WG1362918
Tetrachloroethene	U		0.199	0.500	1	10/15/2019 01:32	WG1362918
Toluene	U		0.412	0.500	1	10/15/2019 01:32	WG1362918
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/15/2019 01:32	WG1362918
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/15/2019 01:32	WG1362918
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/15/2019 01:32	WG1362918
1,1,2-Trichloroethane	U		0.186	0.500	1	10/15/2019 01:32	WG1362918
Trichloroethene	U		0.153	0.500	1	10/15/2019 01:32	WG1362918
Trichlorofluoromethane	U		0.130	2.50	1	10/15/2019 01:32	WG1362918
1,2,3-Trichloropropane	U		0.247	2.50	1	10/15/2019 01:32	WG1362918
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/15/2019 01:32	WG1362918
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/15/2019 01:32	WG1362918
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/15/2019 01:32	WG1362918
Vinyl acetate	U		0.645	5.00	1	10/15/2019 01:32	WG1362918
Vinyl chloride	U		0.118	0.500	1	10/15/2019 01:32	WG1362918
Xylenes, Total	U		0.316	1.50	1	10/15/2019 01:32	WG1362918
(S) Toluene-d8	103			80.0-120		10/15/2019 01:32	WG1362918
(S) 4-Bromofluorobenzene	102			77.0-126		10/15/2019 01:32	WG1362918
(S) 1,2-Dichloroethane-d4	102			70.0-130		10/15/2019 01:32	WG1362918

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3460555-1 10/13/19 14:18

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	3920	↓	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1148858-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1148858-01 10/13/19 14:37 • (DUP) R3460555-2 10/13/19 14:46

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	107000	102000	1	5.08		20

Sample Narrative:

OS: Endpoint pH 4.5 HEADSPACE

DUP: Endpoint pH 4.5

L1146788-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1146788-10 10/13/19 16:07 • (DUP) R3460555-4 10/13/19 16:14

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	581000	583000	1	0.486		20

Sample Narrative:

OS: Endpoint pH 4.5

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3460555-3 10/13/19 15:45

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	114000	114	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3458346-1 10/05/19 10:33

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	52.6	J	51.9	1000
Nitrate	U		22.7	100
Sulfate	U		77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1146788-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1146788-01 10/05/19 16:50 • (DUP) R3458346-3 10/05/19 17:39

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	16900	16700	1	1.16		15
Nitrate	U	0.000	1	0.000		15
Sulfate	41800	41700	1	0.239		15

L1146810-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1146810-06 10/06/19 00:46 • (DUP) R3458346-6 10/06/19 01:03

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	3060	2940	1	4.00		15
Nitrate	42.4	53.0	1	22.2	J P1	15
Sulfate	36500	36400	1	0.159		15

Laboratory Control Sample (LCS)

(LCS) R3458346-2 10/05/19 10:49

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Chloride	40000	39300	98.1	80.0-120	
Nitrate	8000	8010	100	80.0-120	
Sulfate	40000	40300	101	80.0-120	



L1146788-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1146788-01 10/05/19 16:50 • (MS) R3458346-4 10/05/19 17:56 • (MSD) R3458346-5 10/05/19 18:12

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	16900	66400	66500	99.1	99.2	1	80.0-120			0.0724	15
Nitrate	5000	U	5080	5060	102	101	1	80.0-120			0.418	15
Sulfate	50000	41800	90100	89900	96.5	96.2	1	80.0-120			0.193	15

L1146810-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L1146810-06 10/06/19 00:46 • (MS) R3458346-7 10/06/19 01:19

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	3060	53200	100	1	80.0-120	
Nitrate	5000	42.4	5140	102	1	80.0-120	
Sulfate	50000	36500	84600	96.3	1	80.0-120	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3460404-1 10/11/19 11:54

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	726	J	102	1000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1146788-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1146788-04 10/11/19 14:25 • (DUP) R3460404-3 10/11/19 14:49

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	4410	4470	1	1.31		20

L1146896-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1146896-01 10/11/19 20:21 • (DUP) R3460404-6 10/11/19 20:46

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	62700	62900	2	0.318		20

Laboratory Control Sample (LCS)

(LCS) R3460404-2 10/11/19 12:41

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC (Total Organic Carbon)	75000	76900	103	85.0-115	

L1146788-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1146788-10 10/11/19 18:16 • (MS) R3460404-4 10/11/19 18:40 • (MSD) R3460404-5 10/11/19 19:08

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	4820	54600	55200	99.6	101	1	80.0-120			1.09	20

L1146896-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1146896-07 10/12/19 10:18 • (MS) R3460404-7 10/12/19 10:41 • (MSD) R3460404-8 10/12/19 11:03

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	1340000	2280000	2270000	94.2	92.3	20	80.0-120	E	E	0.835	20



Method Blank (MB)

(MB) R3459091-1 10/08/19 22:49

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Iron	U		15.0	100
Manganese	1.51	J	0.250	5.00

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3459091-2 10/08/19 22:53 • (LCSD) R3459091-3 10/08/19 22:58

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Iron	5000	5030	5020	101	100	80.0-120			0.0752	20
Manganese	50.0	51.2	50.2	102	100	80.0-120			2.04	20

5 Sr

6 Qc

L1146802-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1146802-01 10/08/19 23:02 • (MS) R3459091-5 10/08/19 23:12 • (MSD) R3459091-6 10/08/19 23:16

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Iron	5000	758	6010	5870	105	102	1	75.0-125			2.38	20
Manganese	50.0	469	516	506	94.5	75.1	1	75.0-125			1.90	20

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3459838-1 10/10/19 14:23

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

L1146788-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1146788-01 10/10/19 14:27 • (DUP) R3459838-2 10/10/19 15:25

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	143	146	1	1.82		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

L1146817-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1146817-09 10/10/19 15:44 • (DUP) R3459838-3 10/10/19 16:10

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	2700	2760	1	2.09		20
Ethane	105	111	1	5.19		20
Ethene	74.8	76.4	1	2.00		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3459838-4 10/10/19 16:16 • (LCSD) R3459838-5 10/10/19 16:20

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	73.3	74.3	108	110	85.0-115			1.34	20
Ethane	129	131	129	102	100	85.0-115			1.59	20
Ethene	127	139	135	109	107	85.0-115			2.51	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3460084-1 10/11/19 09:46

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Methane	U		0.287	0.678

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1146788-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1146788-03 10/11/19 09:50 • (DUP) R3460084-2 10/11/19 10:53

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	23700	24600	10	3.69		20

L1147284-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1147284-04 10/11/19 11:38 • (DUP) R3460084-3 10/11/19 11:40

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	ND	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3460084-4 10/11/19 11:43 • (LCSD) R3460084-5 10/11/19 11:47

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Methane	67.8	72.9	71.7	107	106	85.0-115			1.58	20



Method Blank (MB)

(MB) R3461125-3 10/15/19 00:15

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3461125-3 10/15/19 00:15

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	102			80.0-120
(S) 4-Bromofluorobenzene	102			77.0-126
(S) 1,2-Dichloroethane-d4	104			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3461125-1 10/14/19 22:32 • (LCSD) R3461125-2 10/14/19 22:52

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Acetone	125	159	154	127	123	19.0-160			3.19	27
Acrylonitrile	125	139	138	111	110	55.0-149			0.722	20
Benzene	25.0	24.1	24.1	96.4	96.4	70.0-123			0.000	20
Bromobenzene	25.0	23.9	23.9	95.6	95.6	73.0-121			0.000	20
Bromodichloromethane	25.0	27.3	27.2	109	109	75.0-120			0.367	20
Bromochloromethane	25.0	26.0	26.0	104	104	76.0-122			0.000	20
Bromoform	25.0	25.7	25.7	103	103	68.0-132			0.000	20
Bromomethane	25.0	25.0	24.3	100	97.2	10.0-160			2.84	25
n-Butylbenzene	25.0	25.7	26.8	103	107	73.0-125			4.19	20
sec-Butylbenzene	25.0	25.0	25.2	100	101	75.0-125			0.797	20
tert-Butylbenzene	25.0	25.6	25.5	102	102	76.0-124			0.391	20
Carbon disulfide	25.0	21.6	21.4	86.4	85.6	61.0-128			0.930	20
Carbon tetrachloride	25.0	28.4	28.7	114	115	68.0-126			1.05	20
Chlorobenzene	25.0	24.2	24.1	96.8	96.4	80.0-121			0.414	20
Chlorodibromomethane	25.0	22.8	22.5	91.2	90.0	77.0-125			1.32	20
Chloroethane	25.0	25.1	25.3	100	101	47.0-150			0.794	20
Chloroform	25.0	25.7	25.5	103	102	73.0-120			0.781	20
Chloromethane	25.0	29.0	28.0	116	112	41.0-142			3.51	20
2-Chlorotoluene	25.0	24.6	24.3	98.4	97.2	76.0-123			1.23	20
4-Chlorotoluene	25.0	24.9	24.7	99.6	98.8	75.0-122			0.806	20
1,2-Dibromo-3-Chloropropane	25.0	24.0	24.7	96.0	98.8	58.0-134			2.87	20
1,2-Dibromoethane	25.0	24.7	24.1	98.8	96.4	80.0-122			2.46	20
Dibromomethane	25.0	27.8	27.4	111	110	80.0-120			1.45	20
1,2-Dichlorobenzene	25.0	25.6	25.4	102	102	79.0-121			0.784	20
1,3-Dichlorobenzene	25.0	25.0	24.8	100	99.2	79.0-120			0.803	20
1,4-Dichlorobenzene	25.0	25.0	24.7	100	98.8	79.0-120			1.21	20
Dichlorodifluoromethane	25.0	30.2	28.3	121	113	51.0-149			6.50	20
1,1-Dichloroethane	25.0	26.3	26.3	105	105	70.0-126			0.000	20
1,2-Dichloroethane	25.0	26.1	25.9	104	104	70.0-128			0.769	20
1,1-Dichloroethene	25.0	25.1	25.1	100	100	71.0-124			0.000	20
cis-1,2-Dichloroethene	25.0	24.9	25.2	99.6	101	73.0-120			1.20	20
trans-1,2-Dichloroethene	25.0	23.4	23.4	93.6	93.6	73.0-120			0.000	20
1,2-Dichloropropane	25.0	26.5	26.7	106	107	77.0-125			0.752	20
1,1-Dichloropropene	25.0	26.4	26.1	106	104	74.0-126			1.14	20
1,3-Dichloropropane	25.0	23.6	23.4	94.4	93.6	80.0-120			0.851	20
cis-1,3-Dichloropropene	25.0	27.3	27.1	109	108	80.0-123			0.735	20
trans-1,3-Dichloropropene	25.0	25.3	25.3	101	101	78.0-124			0.000	20
trans-1,4-Dichloro-2-butene	25.0	25.3	24.9	101	99.6	33.0-144			1.59	20
2,2-Dichloropropane	25.0	25.4	24.8	102	99.2	58.0-130			2.39	20
Di-isopropyl ether	25.0	27.7	27.5	111	110	58.0-138			0.725	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3461125-1 10/14/19 22:32 • (LCSD) R3461125-2 10/14/19 22:52

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Ethylbenzene	25.0	23.8	23.6	95.2	94.4	79.0-123			0.844	20
Hexachloro-1,3-butadiene	25.0	24.2	27.4	96.8	110	54.0-138			12.4	20
2-Hexanone	125	133	130	106	104	67.0-149			2.28	20
n-Hexane	25.0	25.9	25.6	104	102	57.0-133			1.17	20
Iodomethane	125	125	124	100	99.2	33.0-147			0.803	26
Isopropylbenzene	25.0	25.2	24.7	101	98.8	76.0-127			2.00	20
p-Isopropyltoluene	25.0	26.0	26.3	104	105	76.0-125			1.15	20
2-Butanone (MEK)	125	153	151	122	121	44.0-160			1.32	20
Methylene Chloride	25.0	23.6	24.0	94.4	96.0	67.0-120			1.68	20
4-Methyl-2-pentanone (MIBK)	125	136	134	109	107	68.0-142			1.48	20
Methyl tert-butyl ether	25.0	26.0	25.6	104	102	68.0-125			1.55	20
Naphthalene	25.0	23.8	26.4	95.2	106	54.0-135			10.4	20
n-Propylbenzene	25.0	24.2	24.1	96.8	96.4	77.0-124			0.414	20
Styrene	25.0	26.2	25.7	105	103	73.0-130			1.93	20
1,1,1,2-Tetrachloroethane	25.0	25.3	25.1	101	100	75.0-125			0.794	20
1,1,2,2-Tetrachloroethane	25.0	23.4	23.1	93.6	92.4	65.0-130			1.29	20
1,1,2-Trichlorotrifluoroethane	25.0	25.2	24.7	101	98.8	69.0-132			2.00	20
Tetrachloroethene	25.0	24.7	24.5	98.8	98.0	72.0-132			0.813	20
Toluene	25.0	23.2	23.0	92.8	92.0	79.0-120			0.866	20
1,2,3-Trichlorobenzene	25.0	25.8	28.8	103	115	50.0-138			11.0	20
1,2,4-Trichlorobenzene	25.0	25.3	27.3	101	109	57.0-137			7.60	20
1,1,1-Trichloroethane	25.0	28.0	27.5	112	110	73.0-124			1.80	20
1,1,2-Trichloroethane	25.0	23.9	23.9	95.6	95.6	80.0-120			0.000	20
Trichloroethene	25.0	27.4	27.6	110	110	78.0-124			0.727	20
Trichlorofluoromethane	25.0	30.7	29.7	123	119	59.0-147			3.31	20
1,2,3-Trichloropropane	25.0	25.1	23.9	100	95.6	73.0-130			4.90	20
1,2,4-Trimethylbenzene	25.0	24.0	23.4	96.0	93.6	76.0-121			2.53	20
1,2,3-Trimethylbenzene	25.0	24.5	24.4	98.0	97.6	77.0-120			0.409	20
1,3,5-Trimethylbenzene	25.0	25.0	24.9	100	99.6	76.0-122			0.401	20
Vinyl acetate	125	124	118	99.2	94.4	11.0-160			4.96	20
Vinyl chloride	25.0	27.8	27.5	111	110	67.0-131			1.08	20
Xylenes, Total	75.0	72.2	71.3	96.3	95.1	79.0-123			1.25	20
(S) Toluene-d8				96.2	96.7	80.0-120				
(S) 4-Bromofluorobenzene				101	101	77.0-126				
(S) 1,2-Dichloroethane-d4				112	113	70.0-130				

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



L1148487-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1148487-01 10/15/19 07:24 • (MS) R3461125-4 10/15/19 09:50 • (MSD) R3461125-5 10/15/19 10:11

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acetone	125	7.11	156	159	119	122	1	10.0-160			1.90	35
Acrylonitrile	125	U	144	140	115	112	1	21.0-160			2.82	32
Benzene	25.0	U	24.7	22.9	98.8	91.6	1	17.0-158			7.56	27
Bromobenzene	25.0	U	23.1	22.5	92.4	90.0	1	30.0-149			2.63	28
Bromodichloromethane	25.0	U	28.2	26.5	113	106	1	31.0-150			6.22	27
Bromochloromethane	25.0	U	26.7	25.3	107	101	1	38.0-142			5.38	26
Bromoform	25.0	U	27.5	26.6	110	106	1	29.0-150			3.33	29
Bromomethane	25.0	U	25.0	22.4	100	89.6	1	10.0-160			11.0	38
n-Butylbenzene	25.0	U	26.3	26.3	105	105	1	31.0-150			0.000	30
sec-Butylbenzene	25.0	U	25.7	25.1	103	100	1	33.0-155			2.36	29
tert-Butylbenzene	25.0	U	26.1	25.2	104	101	1	34.0-153			3.51	28
Carbon disulfide	25.0	U	23.3	20.7	93.2	82.8	1	10.0-156			11.8	28
Carbon tetrachloride	25.0	U	31.0	28.0	124	112	1	23.0-159			10.2	28
Chlorobenzene	25.0	U	25.6	24.2	102	96.8	1	33.0-152			5.62	27
Chlorodibromomethane	25.0	U	24.3	23.3	97.2	93.2	1	37.0-149			4.20	27
Chloroethane	25.0	U	25.9	23.6	104	94.4	1	10.0-160			9.29	30
Chloroform	25.0	1.01	27.4	25.2	106	96.8	1	29.0-154			8.37	28
Chloromethane	25.0	U	27.1	24.2	108	96.8	1	10.0-160			11.3	29
2-Chlorotoluene	25.0	U	24.3	23.4	97.2	93.6	1	32.0-153			3.77	28
4-Chlorotoluene	25.0	U	24.3	23.5	97.2	94.0	1	32.0-150			3.35	28
1,2-Dibromo-3-Chloropropane	25.0	U	24.5	25.5	98.0	102	1	22.0-151			4.00	34
1,2-Dibromoethane	25.0	U	25.4	24.3	102	97.2	1	34.0-147			4.43	27
Dibromomethane	25.0	U	28.0	27.4	112	110	1	30.0-151			2.17	27
1,2-Dichlorobenzene	25.0	U	25.4	25.1	102	100	1	34.0-149			1.19	28
1,3-Dichlorobenzene	25.0	U	24.5	24.0	98.0	96.0	1	36.0-146			2.06	27
1,4-Dichlorobenzene	25.0	U	25.3	24.4	101	97.6	1	35.0-142			3.62	27
Dichlorodifluoromethane	25.0	U	32.0	26.6	128	106	1	10.0-160			18.4	29
1,1-Dichloroethane	25.0	U	27.6	25.3	110	101	1	25.0-158			8.70	27
1,2-Dichloroethane	25.0	U	27.0	25.4	108	102	1	29.0-151			6.11	27
1,1-Dichloroethene	25.0	U	27.0	24.0	108	96.0	1	11.0-160			11.8	29
cis-1,2-Dichloroethene	25.0	0.302	26.2	24.2	104	95.6	1	10.0-160			7.94	27
trans-1,2-Dichloroethene	25.0	U	24.6	22.2	98.4	88.8	1	17.0-153			10.3	27
1,2-Dichloropropane	25.0	0.512	27.4	25.7	108	101	1	30.0-156			6.40	27
1,1-Dichloropropene	25.0	U	28.3	25.6	113	102	1	25.0-158			10.0	27
1,3-Dichloropropane	25.0	U	24.2	24.2	96.8	96.8	1	38.0-147			0.000	27
cis-1,3-Dichloropropene	25.0	U	27.2	25.6	109	102	1	34.0-149			6.06	28
trans-1,3-Dichloropropene	25.0	U	26.7	25.5	107	102	1	32.0-149			4.60	28
trans-1,4-Dichloro-2-butene	25.0	U	23.6	23.9	94.4	95.6	1	10.0-157			1.26	37
2,2-Dichloropropane	25.0	U	26.0	23.0	104	92.0	1	24.0-152			12.2	29
Di-isopropyl ether	25.0	U	28.5	27.1	114	108	1	21.0-160			5.04	28

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



L1148487-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1148487-01 10/15/19 07:24 • (MS) R3461125-4 10/15/19 09:50 • (MSD) R3461125-5 10/15/19 10:11

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Ethylbenzene	25.0	U	25.2	23.7	101	94.8	1	30.0-155			6.13	27
Hexachloro-1,3-butadiene	25.0	U	25.4	27.4	102	110	1	20.0-154			7.58	34
2-Hexanone	125	U	138	133	110	106	1	21.0-160			3.69	29
n-Hexane	25.0	U	27.8	25.9	111	104	1	10.0-153			7.08	28
Iodomethane	125	U	130	118	104	94.4	1	10.0-160			9.68	40
Isopropylbenzene	25.0	U	27.3	25.7	109	103	1	28.0-157			6.04	27
p-Isopropyltoluene	25.0	U	26.3	25.8	105	103	1	30.0-154			1.92	29
2-Butanone (MEK)	125	U	158	154	126	123	1	10.0-160			2.56	32
Methylene Chloride	25.0	U	24.3	22.5	97.2	90.0	1	23.0-144			7.69	28
4-Methyl-2-pentanone (MIBK)	125	U	141	138	113	110	1	29.0-160			2.15	29
Methyl tert-butyl ether	25.0	U	26.1	25.3	104	101	1	28.0-150			3.11	29
Naphthalene	25.0	U	24.5	26.7	98.0	107	1	12.0-156			8.59	35
n-Propylbenzene	25.0	U	24.2	23.1	96.8	92.4	1	31.0-154			4.65	28
Styrene	25.0	U	27.3	25.8	109	103	1	33.0-155			5.65	28
1,1,1,2-Tetrachloroethane	25.0	U	27.2	25.9	109	104	1	36.0-151			4.90	29
1,1,2,2-Tetrachloroethane	25.0	U	24.4	24.7	97.6	98.8	1	33.0-150			1.22	28
1,1,2-Trichlorotrifluoroethane	25.0	U	27.2	24.5	109	98.0	1	23.0-160			10.4	30
Tetrachloroethene	25.0	U	27.1	24.8	108	99.2	1	10.0-160			8.86	27
Toluene	25.0	U	24.7	22.9	98.8	91.6	1	26.0-154			7.56	28
1,2,3-Trichlorobenzene	25.0	U	26.4	28.6	106	114	1	17.0-150			8.00	36
1,2,4-Trichlorobenzene	25.0	U	25.5	26.6	102	106	1	24.0-150			4.22	33
1,1,1-Trichloroethane	25.0	0.232	30.3	27.2	120	108	1	23.0-160			10.8	28
1,1,2-Trichloroethane	25.0	U	25.2	24.1	101	96.4	1	35.0-147			4.46	27
Trichloroethene	25.0	2.14	29.6	27.2	110	100	1	10.0-160			8.45	25
Trichlorofluoromethane	25.0	U	33.7	30.2	135	121	1	17.0-160			11.0	31
1,2,3-Trichloropropane	25.0	U	24.0	23.5	96.0	94.0	1	34.0-151			2.11	29
1,2,4-Trimethylbenzene	25.0	U	23.8	23.1	95.2	92.4	1	26.0-154			2.99	27
1,2,3-Trimethylbenzene	25.0	U	24.7	23.9	98.8	95.6	1	32.0-149			3.29	28
1,3,5-Trimethylbenzene	25.0	U	24.7	24.1	98.8	96.4	1	28.0-153			2.46	27
Vinyl acetate	125	U	163	157	130	126	1	12.0-160			3.75	31
Vinyl chloride	25.0	0.139	28.8	25.4	115	101	1	10.0-160			12.5	27
Xylenes, Total	75.0	U	76.4	71.4	102	95.2	1	29.0-154			6.77	28
(S) Toluene-d8					100	99.9		80.0-120				
(S) 4-Bromofluorobenzene					105	105		77.0-126				
(S) 1,2-Dichloroethane-d4					118	114		70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3461296-3 10/15/19 10:02

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
cis-1,2-Dichloroethene	U		0.0933	0.500
(S) Toluene-d8	94.7			80.0-120
(S) 4-Bromofluorobenzene	93.1			77.0-126
(S) 1,2-Dichloroethane-d4	85.2			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3461296-1 10/15/19 09:03 • (LCSD) R3461296-2 10/15/19 09:23

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
cis-1,2-Dichloroethene	25.0	25.8	26.4	103	106	73.0-120			2.30	20
(S) Toluene-d8				93.5	93.1	80.0-120				
(S) 4-Bromofluorobenzene				95.6	94.6	77.0-126				
(S) 1,2-Dichloroethane-d4				85.9	81.0	70.0-130				

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration method criteria.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
T8	Sample(s) received past/too close to holding time expiration.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

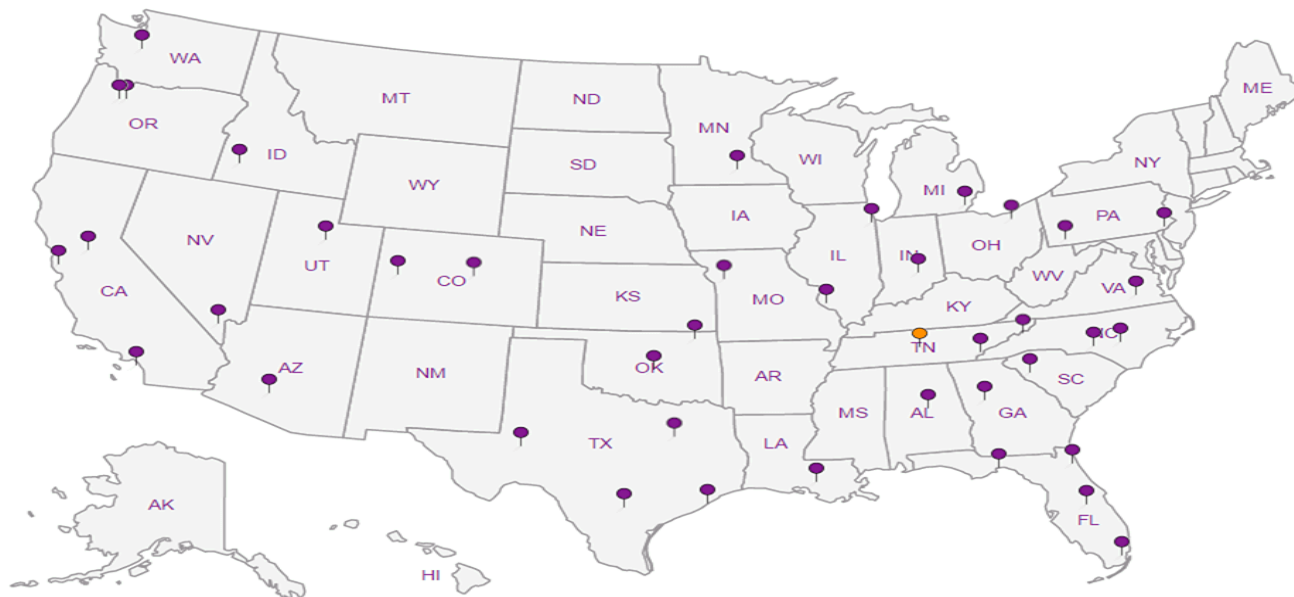
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

PES Environmental, Inc.- WA

1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Billing Information:
Attn: Accounts Payable
1215 Fourth Ave., Ste. 1350
Seattle, WA 98161

Report to:
Brian O'Neal/Bill Haldeman

Email To: boneal@pesenv.com; *KVik@PES ENV. CON.*
baldeman@pesenv.com;

Project Description: *American Linen*

City/State Collected: *Seattle, WA*

Please Circle: PT MT CT ET

Phone: 206-529-3980
Fax: 206-529-3985

Client Project #
1413.001.02.501E

Lab Project #
PESENVSWA-ALP

Collected by (print):
Ben Hecht

Site/Facility ID #
American Linen

P.O. #

Collected by (signature):
Ben Hecht
Immediately Packed on Ice N Y

Rush? (Lab MUST Be Notified)
Same Day Five Day
Next Day 5 Day (Rad Only)
Two Day 10 Day (Rad Only)
Three Day
Quote #
Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
-----------	-----------	----------	-------	------	------	--------------

MW-316-100219	Grab	GW	64	10/2/19	0950	9
MW-324-100219	↓	GW	71	↓	1215	9
MW-328-100219	↓	GW	70	↓	1415	9
MW-327-100219	↓	GW	35	↓	1610	9
MW-316-100319	Grab	GW	64	10/3/19	0815	1
MW-315-100319		GW	42		0920	9
MW-915-100319		GW	105		1010	9
MW-325-100319		GW	39		1115	9
MW-326-100319		GW	94.5		1230	9
MW-329-100319		GW	105		1435	9

Analysis / Container / Preservative	
Pres Chk	<2
NO3,SO4,Cl 125mlHDPE-NoPres	
Alkalinity 125mlHDPE-NoPres	
EEM RSK175LL 40mlAmb-HCl	
TOC 250mlAmb-HCl	
Total Fe, Mn 6020 250mlHDPE-HNO3	
VOCs 8260LLC 40mlAmb-HCl	

Chain of Custody Page ___ of ___



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



SDG # *L1146788*
J234

Acctnum: PESENVSWA
Template: T155685
Prelogin: P729671
PM: 110 - Brian Ford
PB: *9/12/19*

Shipped Via: **FedEx Ground**

Remarks	Sample # (lab only)
<i>No TOC</i>	<i>No3 - 01</i>
<i>2 tests for No3</i>	<i>- 02</i>
<i>use (B11)</i>	<i>- 03</i>
	<i>- 04</i>
<i>NO3</i>	<i>- 05</i>
	<i>- 06</i>
	<i>- 07</i>
	<i>- 08</i>
	<i>- 09</i>
	<i>- 10</i>

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks: *TRIP BLANK to be analyzed for VOC 8260*

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
 UPS FedEx Courier

Tracking # *1145 2227 3465*

Sample Receipt Checklist

COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N

If Applicable

VOA Zero HeadSpace: Y N
Preservation Correct/Checked: Y N
RAD Screen <0.5 mR/hr: Y N

Relinquished by: (Signature)
Ben Hecht

Date: *10-3-19*
Time: *1610*

Received by: (Signature)

Trip Blank Received: Yes No
 HCL/ MeOH
 TBR

Relinquished by: (Signature)

Date: _____
Time: _____

Received by: (Signature)

Temp: _____ °C
0.9+1=1.0 AS 83
Bottles Received: _____

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date: _____
Time: _____

Received for lab by: (Signature)
Delmonte Pinkerton

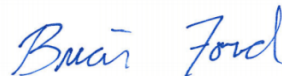
Date: *10/5/19*
Time: *8:45*

Hold: _____
Condition: *NCF / 08*

PES Environmental, Inc.- WA

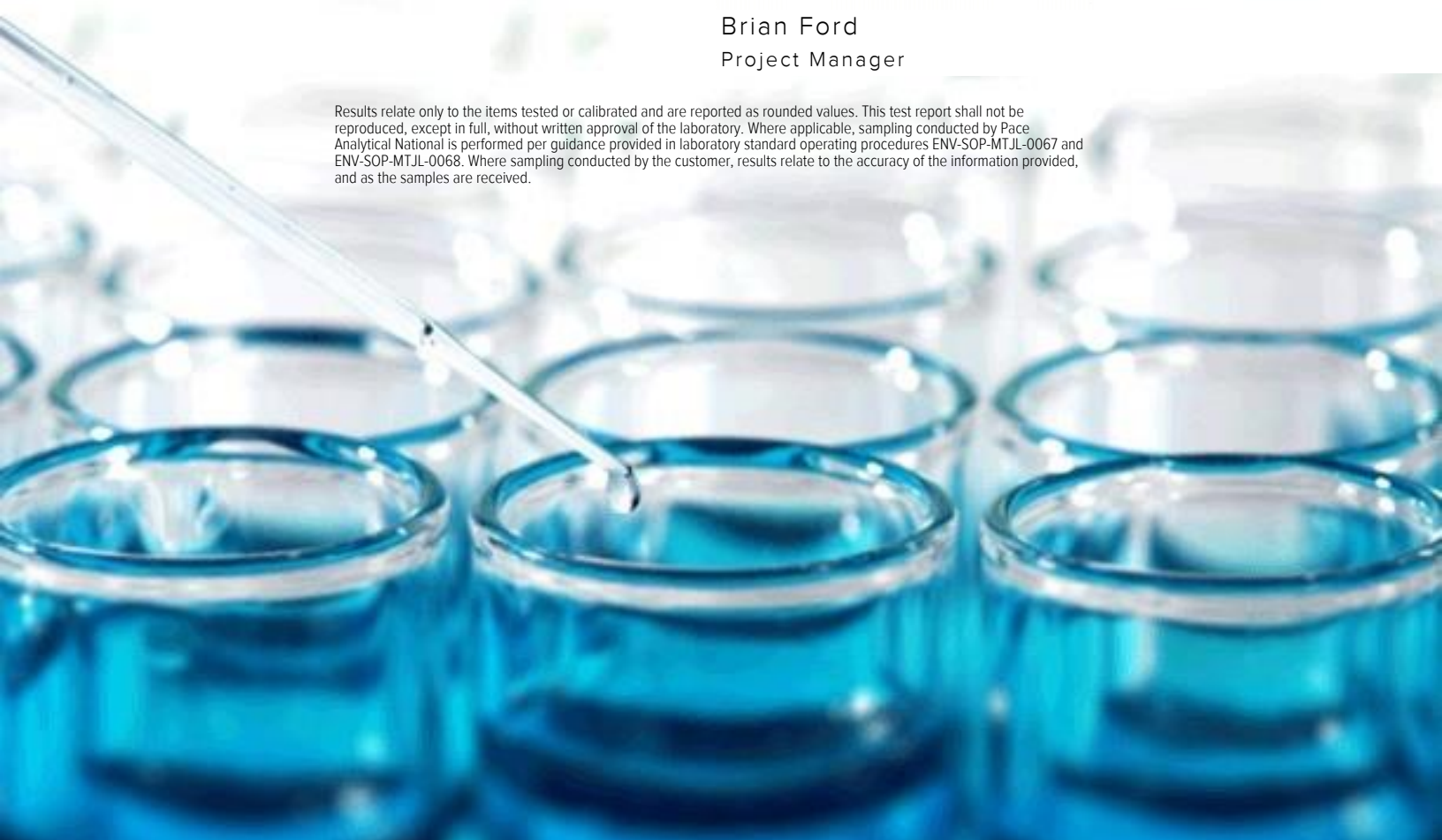
Sample Delivery Group: L1147264
Samples Received: 10/08/2019
Project Number: AMERICAN LINEN
Description: Amerian Linen
Site: 1413.001.02.501E
Report To: Brian O'Neal/Bill Haldeman
1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





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SAMPLE SUMMARY

MW-320-100719 L1147264-01 GW

Collected by: Ben Hecht
 Collected date/time: 10/07/19 12:22
 Received date/time: 10/08/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1362246	5	10/13/19 16:21	10/13/19 16:21	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1359094	1	10/08/19 13:48	10/08/19 13:48	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1361291	1	10/12/19 12:37	10/12/19 12:37	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1360463	1	10/11/19 09:20	10/11/19 17:01	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1360463	20	10/11/19 09:20	10/11/19 18:28	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1359638	1	10/09/19 15:54	10/09/19 15:54	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1362918	1	10/15/19 06:42	10/15/19 06:42	JHH	Mt. Juliet, TN

1
Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

8
Al

9
Sc

MW-322-100719 L1147264-02 GW

Collected by: Ben Hecht
 Collected date/time: 10/07/19 13:50
 Received date/time: 10/08/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1362246	1	10/13/19 16:28	10/13/19 16:28	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1359094	1	10/08/19 14:32	10/08/19 14:32	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1361291	1	10/12/19 13:02	10/12/19 13:02	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1360463	50	10/11/19 09:20	10/11/19 18:32	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1359638	1	10/09/19 16:02	10/09/19 16:02	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1362918	1	10/15/19 07:03	10/15/19 07:03	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1363245	20	10/15/19 17:47	10/15/19 17:47	JHH	Mt. Juliet, TN

TRIP-100719 L1147264-03 GW

Collected by: Ben Hecht
 Collected date/time: 10/07/19 15:30
 Received date/time: 10/08/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1362918	1	10/15/19 02:13	10/15/19 02:13	JHH	Mt. Juliet, TN



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	1780000		13600	100000	5	10/13/2019 16:21	WG1362246

Sample Narrative:

L1147264-01 WG1362246: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	12700		51.9	1000	1	10/08/2019 13:48	WG1359094
Nitrate	U		22.7	100	1	10/08/2019 13:48	WG1359094
Sulfate	5080		77.4	5000	1	10/08/2019 13:48	WG1359094

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	8510		102	1000	1	10/12/2019 12:37	WG1361291

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	1600		15.0	100	1	10/11/2019 17:01	WG1360463
Manganese	2370		5.00	100	20	10/11/2019 18:28	WG1360463

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	264		0.287	0.678	1	10/09/2019 15:54	WG1359638
Ethane	U		0.296	1.29	1	10/09/2019 15:54	WG1359638
Ethene	U		0.422	1.27	1	10/09/2019 15:54	WG1359638

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	2.81	J JO	1.05	25.0	1	10/15/2019 06:42	WG1362918
Acrylonitrile	U		0.873	5.00	1	10/15/2019 06:42	WG1362918
Benzene	U		0.0896	0.500	1	10/15/2019 06:42	WG1362918
Bromobenzene	U		0.133	0.500	1	10/15/2019 06:42	WG1362918
Bromodichloromethane	U		0.0800	0.500	1	10/15/2019 06:42	WG1362918
Bromochloromethane	U		0.145	0.500	1	10/15/2019 06:42	WG1362918
Bromoform	U		0.186	0.500	1	10/15/2019 06:42	WG1362918
Bromomethane	U		0.157	2.50	1	10/15/2019 06:42	WG1362918
n-Butylbenzene	0.200	J	0.143	0.500	1	10/15/2019 06:42	WG1362918
sec-Butylbenzene	2.82		0.134	0.500	1	10/15/2019 06:42	WG1362918
tert-Butylbenzene	1.89		0.183	0.500	1	10/15/2019 06:42	WG1362918
Carbon disulfide	U		0.101	0.500	1	10/15/2019 06:42	WG1362918
Carbon tetrachloride	U		0.159	0.500	1	10/15/2019 06:42	WG1362918
Chlorobenzene	U		0.140	0.500	1	10/15/2019 06:42	WG1362918
Chlorodibromomethane	U		0.128	0.500	1	10/15/2019 06:42	WG1362918
Chloroethane	U		0.141	2.50	1	10/15/2019 06:42	WG1362918
Chloroform	U		0.0860	0.500	1	10/15/2019 06:42	WG1362918
Chloromethane	U		0.153	1.25	1	10/15/2019 06:42	WG1362918
2-Chlorotoluene	U		0.111	0.500	1	10/15/2019 06:42	WG1362918
4-Chlorotoluene	U		0.0972	0.500	1	10/15/2019 06:42	WG1362918

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/15/2019 06:42	WG1362918
1,2-Dibromoethane	U		0.193	0.500	1	10/15/2019 06:42	WG1362918
Dibromomethane	U		0.117	0.500	1	10/15/2019 06:42	WG1362918
1,2-Dichlorobenzene	U		0.101	0.500	1	10/15/2019 06:42	WG1362918
1,3-Dichlorobenzene	U		0.130	0.500	1	10/15/2019 06:42	WG1362918
1,4-Dichlorobenzene	U		0.121	0.500	1	10/15/2019 06:42	WG1362918
Dichlorodifluoromethane	U		0.127	2.50	1	10/15/2019 06:42	WG1362918
1,1-Dichloroethane	U		0.114	0.500	1	10/15/2019 06:42	WG1362918
1,2-Dichloroethane	U		0.108	0.500	1	10/15/2019 06:42	WG1362918
1,1-Dichloroethene	U		0.188	0.500	1	10/15/2019 06:42	WG1362918
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/15/2019 06:42	WG1362918
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/15/2019 06:42	WG1362918
1,2-Dichloropropane	U		0.190	0.500	1	10/15/2019 06:42	WG1362918
1,1-Dichloropropene	U		0.128	0.500	1	10/15/2019 06:42	WG1362918
1,3-Dichloropropane	U		0.147	1.00	1	10/15/2019 06:42	WG1362918
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/15/2019 06:42	WG1362918
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/15/2019 06:42	WG1362918
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/15/2019 06:42	WG1362918
2,2-Dichloropropane	U		0.0929	0.500	1	10/15/2019 06:42	WG1362918
Di-isopropyl ether	U		0.0924	0.500	1	10/15/2019 06:42	WG1362918
Ethylbenzene	U		0.158	0.500	1	10/15/2019 06:42	WG1362918
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/15/2019 06:42	WG1362918
2-Hexanone	U		0.757	5.00	1	10/15/2019 06:42	WG1362918
n-Hexane	U		0.305	5.00	1	10/15/2019 06:42	WG1362918
Iodomethane	U		0.377	10.0	1	10/15/2019 06:42	WG1362918
Isopropylbenzene	2.62		0.126	0.500	1	10/15/2019 06:42	WG1362918
p-Isopropyltoluene	U		0.138	0.500	1	10/15/2019 06:42	WG1362918
2-Butanone (MEK)	U		1.28	5.00	1	10/15/2019 06:42	WG1362918
Methylene Chloride	U		1.07	2.50	1	10/15/2019 06:42	WG1362918
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/15/2019 06:42	WG1362918
Methyl tert-butyl ether	U		0.102	0.500	1	10/15/2019 06:42	WG1362918
Naphthalene	U		0.174	2.50	1	10/15/2019 06:42	WG1362918
n-Propylbenzene	3.22		0.162	0.500	1	10/15/2019 06:42	WG1362918
Styrene	U		0.117	0.500	1	10/15/2019 06:42	WG1362918
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/15/2019 06:42	WG1362918
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/15/2019 06:42	WG1362918
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/15/2019 06:42	WG1362918
Tetrachloroethene	U		0.199	0.500	1	10/15/2019 06:42	WG1362918
Toluene	0.459	U	0.412	0.500	1	10/15/2019 06:42	WG1362918
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/15/2019 06:42	WG1362918
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/15/2019 06:42	WG1362918
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/15/2019 06:42	WG1362918
1,1,2-Trichloroethane	U		0.186	0.500	1	10/15/2019 06:42	WG1362918
Trichloroethene	U		0.153	0.500	1	10/15/2019 06:42	WG1362918
Trichlorofluoromethane	U		0.130	2.50	1	10/15/2019 06:42	WG1362918
1,2,3-Trichloropropane	U		0.247	2.50	1	10/15/2019 06:42	WG1362918
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/15/2019 06:42	WG1362918
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/15/2019 06:42	WG1362918
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/15/2019 06:42	WG1362918
Vinyl acetate	U		0.645	5.00	1	10/15/2019 06:42	WG1362918
Vinyl chloride	U		0.118	0.500	1	10/15/2019 06:42	WG1362918
Xylenes, Total	U		0.316	1.50	1	10/15/2019 06:42	WG1362918
(S) Toluene-d8	80.5			80.0-120		10/15/2019 06:42	WG1362918
(S) 4-Bromofluorobenzene	89.1			77.0-126		10/15/2019 06:42	WG1362918
(S) 1,2-Dichloroethane-d4	109			70.0-130		10/15/2019 06:42	WG1362918

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	841000		2710	20000	1	10/13/2019 16:28	WG1362246

Sample Narrative:

L1147264-02 WG1362246: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	30400		51.9	1000	1	10/08/2019 14:32	WG1359094
Nitrate	U		22.7	100	1	10/08/2019 14:32	WG1359094
Sulfate	21100		77.4	5000	1	10/08/2019 14:32	WG1359094

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	19400		102	1000	1	10/12/2019 13:02	WG1361291

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	43900		750	5000	50	10/11/2019 18:32	WG1360463
Manganese	4260		12.5	250	50	10/11/2019 18:32	WG1360463

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	3090		0.287	0.678	1	10/09/2019 16:02	WG1359638
Ethane	59.1		0.296	1.29	1	10/09/2019 16:02	WG1359638
Ethene	20.8		0.422	1.27	1	10/09/2019 16:02	WG1359638

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	3.40	<u>J JO</u>	1.05	25.0	1	10/15/2019 07:03	WG1362918
Acrylonitrile	U		0.873	5.00	1	10/15/2019 07:03	WG1362918
Benzene	7.12		0.0896	0.500	1	10/15/2019 07:03	WG1362918
Bromobenzene	U		0.133	0.500	1	10/15/2019 07:03	WG1362918
Bromodichloromethane	U		0.0800	0.500	1	10/15/2019 07:03	WG1362918
Bromochloromethane	U		0.145	0.500	1	10/15/2019 07:03	WG1362918
Bromoform	U		0.186	0.500	1	10/15/2019 07:03	WG1362918
Bromomethane	U		0.157	2.50	1	10/15/2019 07:03	WG1362918
n-Butylbenzene	U		0.143	0.500	1	10/15/2019 07:03	WG1362918
sec-Butylbenzene	U		0.134	0.500	1	10/15/2019 07:03	WG1362918
tert-Butylbenzene	U		0.183	0.500	1	10/15/2019 07:03	WG1362918
Carbon disulfide	U		0.101	0.500	1	10/15/2019 07:03	WG1362918
Carbon tetrachloride	U		0.159	0.500	1	10/15/2019 07:03	WG1362918
Chlorobenzene	U		0.140	0.500	1	10/15/2019 07:03	WG1362918
Chlorodibromomethane	U		0.128	0.500	1	10/15/2019 07:03	WG1362918
Chloroethane	U		0.141	2.50	1	10/15/2019 07:03	WG1362918
Chloroform	U		0.0860	0.500	1	10/15/2019 07:03	WG1362918
Chloromethane	U		0.153	1.25	1	10/15/2019 07:03	WG1362918
2-Chlorotoluene	U		0.111	0.500	1	10/15/2019 07:03	WG1362918
4-Chlorotoluene	U		0.0972	0.500	1	10/15/2019 07:03	WG1362918

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/15/2019 07:03	WG1362918
1,2-Dibromoethane	U		0.193	0.500	1	10/15/2019 07:03	WG1362918
Dibromomethane	U		0.117	0.500	1	10/15/2019 07:03	WG1362918
1,2-Dichlorobenzene	U		0.101	0.500	1	10/15/2019 07:03	WG1362918
1,3-Dichlorobenzene	U		0.130	0.500	1	10/15/2019 07:03	WG1362918
1,4-Dichlorobenzene	U		0.121	0.500	1	10/15/2019 07:03	WG1362918
Dichlorodifluoromethane	U		0.127	2.50	1	10/15/2019 07:03	WG1362918
1,1-Dichloroethane	U		0.114	0.500	1	10/15/2019 07:03	WG1362918
1,2-Dichloroethane	U		0.108	0.500	1	10/15/2019 07:03	WG1362918
1,1-Dichloroethene	1.23		0.188	0.500	1	10/15/2019 07:03	WG1362918
cis-1,2-Dichloroethene	497		1.87	10.0	20	10/15/2019 17:47	WG1363245
trans-1,2-Dichloroethene	1.17		0.152	0.500	1	10/15/2019 07:03	WG1362918
1,2-Dichloropropane	U		0.190	0.500	1	10/15/2019 07:03	WG1362918
1,1-Dichloropropene	U		0.128	0.500	1	10/15/2019 07:03	WG1362918
1,3-Dichloropropane	U		0.147	1.00	1	10/15/2019 07:03	WG1362918
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/15/2019 07:03	WG1362918
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/15/2019 07:03	WG1362918
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/15/2019 07:03	WG1362918
2,2-Dichloropropane	U		0.0929	0.500	1	10/15/2019 07:03	WG1362918
Di-isopropyl ether	0.112	U	0.0924	0.500	1	10/15/2019 07:03	WG1362918
Ethylbenzene	U		0.158	0.500	1	10/15/2019 07:03	WG1362918
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/15/2019 07:03	WG1362918
2-Hexanone	U		0.757	5.00	1	10/15/2019 07:03	WG1362918
n-Hexane	U		0.305	5.00	1	10/15/2019 07:03	WG1362918
Iodomethane	U		0.377	10.0	1	10/15/2019 07:03	WG1362918
Isopropylbenzene	U		0.126	0.500	1	10/15/2019 07:03	WG1362918
p-Isopropyltoluene	U		0.138	0.500	1	10/15/2019 07:03	WG1362918
2-Butanone (MEK)	U		1.28	5.00	1	10/15/2019 07:03	WG1362918
Methylene Chloride	U		1.07	2.50	1	10/15/2019 07:03	WG1362918
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/15/2019 07:03	WG1362918
Methyl tert-butyl ether	U		0.102	0.500	1	10/15/2019 07:03	WG1362918
Naphthalene	U		0.174	2.50	1	10/15/2019 07:03	WG1362918
n-Propylbenzene	U		0.162	0.500	1	10/15/2019 07:03	WG1362918
Styrene	U		0.117	0.500	1	10/15/2019 07:03	WG1362918
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/15/2019 07:03	WG1362918
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/15/2019 07:03	WG1362918
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/15/2019 07:03	WG1362918
Tetrachloroethene	0.699		0.199	0.500	1	10/15/2019 07:03	WG1362918
Toluene	0.612		0.412	0.500	1	10/15/2019 07:03	WG1362918
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/15/2019 07:03	WG1362918
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/15/2019 07:03	WG1362918
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/15/2019 07:03	WG1362918
1,1,2-Trichloroethane	U		0.186	0.500	1	10/15/2019 07:03	WG1362918
Trichloroethene	21.0		0.153	0.500	1	10/15/2019 07:03	WG1362918
Trichlorofluoromethane	U		0.130	2.50	1	10/15/2019 07:03	WG1362918
1,2,3-Trichloropropane	U		0.247	2.50	1	10/15/2019 07:03	WG1362918
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/15/2019 07:03	WG1362918
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/15/2019 07:03	WG1362918
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/15/2019 07:03	WG1362918
Vinyl acetate	U		0.645	5.00	1	10/15/2019 07:03	WG1362918
Vinyl chloride	268		2.36	10.0	20	10/15/2019 17:47	WG1363245
Xylenes, Total	U		0.316	1.50	1	10/15/2019 07:03	WG1362918
(S) Toluene-d8	103			80.0-120		10/15/2019 07:03	WG1362918
(S) Toluene-d8	96.5			80.0-120		10/15/2019 17:47	WG1363245
(S) 4-Bromofluorobenzene	105			77.0-126		10/15/2019 07:03	WG1362918
(S) 4-Bromofluorobenzene	94.9			77.0-126		10/15/2019 17:47	WG1363245

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	107			70.0-130		10/15/2019 07:03	WG1362918
(S) 1,2-Dichloroethane-d4	86.3			70.0-130		10/15/2019 17:47	WG1363245

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.31	J JO	1.05	25.0	1	10/15/2019 02:13	WG1362918
Acrylonitrile	U		0.873	5.00	1	10/15/2019 02:13	WG1362918
Benzene	U		0.0896	0.500	1	10/15/2019 02:13	WG1362918
Bromobenzene	U		0.133	0.500	1	10/15/2019 02:13	WG1362918
Bromodichloromethane	U		0.0800	0.500	1	10/15/2019 02:13	WG1362918
Bromochloromethane	U		0.145	0.500	1	10/15/2019 02:13	WG1362918
Bromoform	U		0.186	0.500	1	10/15/2019 02:13	WG1362918
Bromomethane	U		0.157	2.50	1	10/15/2019 02:13	WG1362918
n-Butylbenzene	U		0.143	0.500	1	10/15/2019 02:13	WG1362918
sec-Butylbenzene	U		0.134	0.500	1	10/15/2019 02:13	WG1362918
tert-Butylbenzene	U		0.183	0.500	1	10/15/2019 02:13	WG1362918
Carbon disulfide	U		0.101	0.500	1	10/15/2019 02:13	WG1362918
Carbon tetrachloride	U		0.159	0.500	1	10/15/2019 02:13	WG1362918
Chlorobenzene	U		0.140	0.500	1	10/15/2019 02:13	WG1362918
Chlorodibromomethane	U		0.128	0.500	1	10/15/2019 02:13	WG1362918
Chloroethane	U		0.141	2.50	1	10/15/2019 02:13	WG1362918
Chloroform	U		0.0860	0.500	1	10/15/2019 02:13	WG1362918
Chloromethane	U		0.153	1.25	1	10/15/2019 02:13	WG1362918
2-Chlorotoluene	U		0.111	0.500	1	10/15/2019 02:13	WG1362918
4-Chlorotoluene	U		0.0972	0.500	1	10/15/2019 02:13	WG1362918
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/15/2019 02:13	WG1362918
1,2-Dibromoethane	U		0.193	0.500	1	10/15/2019 02:13	WG1362918
Dibromomethane	U		0.117	0.500	1	10/15/2019 02:13	WG1362918
1,2-Dichlorobenzene	U		0.101	0.500	1	10/15/2019 02:13	WG1362918
1,3-Dichlorobenzene	U		0.130	0.500	1	10/15/2019 02:13	WG1362918
1,4-Dichlorobenzene	U		0.121	0.500	1	10/15/2019 02:13	WG1362918
Dichlorodifluoromethane	U		0.127	2.50	1	10/15/2019 02:13	WG1362918
1,1-Dichloroethane	U		0.114	0.500	1	10/15/2019 02:13	WG1362918
1,2-Dichloroethane	U		0.108	0.500	1	10/15/2019 02:13	WG1362918
1,1-Dichloroethene	U		0.188	0.500	1	10/15/2019 02:13	WG1362918
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/15/2019 02:13	WG1362918
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/15/2019 02:13	WG1362918
1,2-Dichloropropane	U		0.190	0.500	1	10/15/2019 02:13	WG1362918
1,1-Dichloropropene	U		0.128	0.500	1	10/15/2019 02:13	WG1362918
1,3-Dichloropropane	U		0.147	1.00	1	10/15/2019 02:13	WG1362918
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/15/2019 02:13	WG1362918
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/15/2019 02:13	WG1362918
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/15/2019 02:13	WG1362918
2,2-Dichloropropane	U		0.0929	0.500	1	10/15/2019 02:13	WG1362918
Di-isopropyl ether	U		0.0924	0.500	1	10/15/2019 02:13	WG1362918
Ethylbenzene	U		0.158	0.500	1	10/15/2019 02:13	WG1362918
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/15/2019 02:13	WG1362918
2-Hexanone	U		0.757	5.00	1	10/15/2019 02:13	WG1362918
n-Hexane	U		0.305	5.00	1	10/15/2019 02:13	WG1362918
Iodomethane	U		0.377	10.0	1	10/15/2019 02:13	WG1362918
Isopropylbenzene	U		0.126	0.500	1	10/15/2019 02:13	WG1362918
p-Isopropyltoluene	U		0.138	0.500	1	10/15/2019 02:13	WG1362918
2-Butanone (MEK)	U		1.28	5.00	1	10/15/2019 02:13	WG1362918
Methylene Chloride	U		1.07	2.50	1	10/15/2019 02:13	WG1362918
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/15/2019 02:13	WG1362918
Methyl tert-butyl ether	U		0.102	0.500	1	10/15/2019 02:13	WG1362918
Naphthalene	U		0.174	2.50	1	10/15/2019 02:13	WG1362918
n-Propylbenzene	U		0.162	0.500	1	10/15/2019 02:13	WG1362918
Styrene	U		0.117	0.500	1	10/15/2019 02:13	WG1362918
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/15/2019 02:13	WG1362918
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/15/2019 02:13	WG1362918

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/15/2019 02:13	WG1362918
Tetrachloroethene	U		0.199	0.500	1	10/15/2019 02:13	WG1362918
Toluene	U		0.412	0.500	1	10/15/2019 02:13	WG1362918
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/15/2019 02:13	WG1362918
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/15/2019 02:13	WG1362918
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/15/2019 02:13	WG1362918
1,1,2-Trichloroethane	U		0.186	0.500	1	10/15/2019 02:13	WG1362918
Trichloroethene	U		0.153	0.500	1	10/15/2019 02:13	WG1362918
Trichlorofluoromethane	U		0.130	2.50	1	10/15/2019 02:13	WG1362918
1,2,3-Trichloropropane	U		0.247	2.50	1	10/15/2019 02:13	WG1362918
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/15/2019 02:13	WG1362918
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/15/2019 02:13	WG1362918
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/15/2019 02:13	WG1362918
Vinyl acetate	U		0.645	5.00	1	10/15/2019 02:13	WG1362918
Vinyl chloride	U		0.118	0.500	1	10/15/2019 02:13	WG1362918
Xylenes, Total	U		0.316	1.50	1	10/15/2019 02:13	WG1362918
(S) Toluene-d8	102			80.0-120		10/15/2019 02:13	WG1362918
(S) 4-Bromofluorobenzene	102			77.0-126		10/15/2019 02:13	WG1362918
(S) 1,2-Dichloroethane-d4	107			70.0-130		10/15/2019 02:13	WG1362918

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3460555-1 10/13/19 14:18

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	3920	↓	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1148858-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1148858-01 10/13/19 14:37 • (DUP) R3460555-2 10/13/19 14:46

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	107000	102000	1	5.08		20

Sample Narrative:

OS: Endpoint pH 4.5 HEADSPACE

DUP: Endpoint pH 4.5

L1146788-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1146788-10 10/13/19 16:07 • (DUP) R3460555-4 10/13/19 16:14

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	581000	583000	1	0.486		20

Sample Narrative:

OS: Endpoint pH 4.5

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3460555-3 10/13/19 15:45

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	114000	114	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3459114-1 10/08/19 09:15

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Chloride	U		51.9	1000
Nitrate	U		22.7	100
Sulfate	U		77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1147264-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1147264-01 10/08/19 13:48 • (DUP) R3459114-3 10/08/19 14:21

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	12700	12300	1	3.18		15
Nitrate	U	0.000	1	0.000		15
Sulfate	5080	4870	1	4.22	↓	15

L1147305-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1147305-12 10/08/19 17:26 • (DUP) R3459114-6 10/08/19 17:36

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	95900	99300	1	3.49		15
Nitrate	U	0.000	1	0.000		15
Sulfate	2160	2170	1	0.509	↓	15

Laboratory Control Sample (LCS)

(LCS) R3459114-2 10/08/19 09:26

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Chloride	40000	40000	100	80.0-120	
Nitrate	8000	8000	100	80.0-120	
Sulfate	40000	40600	101	80.0-120	



L1147268-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1147268-01 10/08/19 14:43 • (MS) R3459114-4 10/08/19 14:53 • (MSD) R3459114-5 10/08/19 15:04

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	95800	144000	144000	96.4	97.0	1	80.0-120	<u>E</u>	<u>E</u>	0.232	15
Nitrate	5000	1690	7170	7180	110	110	1	80.0-120			0.192	15
Sulfate	50000	26100	78800	79000	105	106	1	80.0-120			0.280	15

L1147305-14 Original Sample (OS) • Matrix Spike (MS)

(OS) L1147305-14 10/08/19 17:47 • (MS) R3459114-7 10/08/19 17:58

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	200000	237000	73.6	1	80.0-120	<u>E V</u>
Nitrate	5000	87.8	4770	93.6	1	80.0-120	
Sulfate	50000	23000	71900	97.9	1	80.0-120	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3460404-1 10/11/19 11:54

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	726	J	102	1000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1146788-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1146788-04 10/11/19 14:25 • (DUP) R3460404-3 10/11/19 14:49

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	4410	4470	1	1.31		20

L1146896-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1146896-01 10/11/19 20:21 • (DUP) R3460404-6 10/11/19 20:46

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	62700	62900	2	0.318		20

Laboratory Control Sample (LCS)

(LCS) R3460404-2 10/11/19 12:41

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC (Total Organic Carbon)	75000	76900	103	85.0-115	

L1146788-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1146788-10 10/11/19 18:16 • (MS) R3460404-4 10/11/19 18:40 • (MSD) R3460404-5 10/11/19 19:08

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	4820	54600	55200	99.6	101	1	80.0-120			1.09	20

L1146896-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1146896-07 10/12/19 10:18 • (MS) R3460404-7 10/12/19 10:41 • (MSD) R3460404-8 10/12/19 11:03

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	1340000	2280000	2270000	94.2	92.3	20	80.0-120	E	E	0.835	20



Method Blank (MB)

(MB) R3460292-1 10/11/19 15:29

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Iron	U		15.0	100
Manganese	1.03	J	0.250	5.00

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3460292-2 10/11/19 15:34 • (LCSD) R3460292-3 10/11/19 15:38

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Iron	5000	4860	4870	97.2	97.3	80.0-120			0.156	20
Manganese	50.0	48.7	49.4	97.3	98.9	80.0-120			1.60	20

5 Sr

6 Qc

L1146807-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1146807-01 10/11/19 15:43 • (MS) R3460292-5 10/11/19 15:52 • (MSD) R3460292-6 10/11/19 15:57

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Iron	5000	642	5350	5330	94.1	93.7	1	75.0-125			0.372	20
Manganese	50.0	91.2	141	139	99.0	96.5	1	75.0-125			0.885	20

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3459385-1 10/09/19 14:23

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1146813-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1146813-05 10/09/19 14:32 • (DUP) R3459385-2 10/09/19 15:06

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	4070	3940	1	3.27		20
Ethane	14.0	12.7	1	10.1		20
Ethene	4890	4710	1	3.59		20

L1146813-21 Original Sample (OS) • Duplicate (DUP)

(OS) L1146813-21 10/09/19 15:13 • (DUP) R3459385-3 10/09/19 16:07

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	U	0.000	1	0.000		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3459385-4 10/09/19 16:10 • (LCSD) R3459385-5 10/09/19 16:14

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	73.5	73.3	108	108	85.0-115			0.213	20
Ethane	129	132	131	102	102	85.0-115			0.687	20
Ethene	127	138	137	108	108	85.0-115			0.369	20



Method Blank (MB)

(MB) R3461125-3 10/15/19 00:15

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3461125-3 10/15/19 00:15

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	102			80.0-120
(S) 4-Bromofluorobenzene	102			77.0-126
(S) 1,2-Dichloroethane-d4	104			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3461125-1 10/14/19 22:32 • (LCSD) R3461125-2 10/14/19 22:52

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	125	159	154	127	123	19.0-160			3.19	27
Acrylonitrile	125	139	138	111	110	55.0-149			0.722	20
Benzene	25.0	24.1	24.1	96.4	96.4	70.0-123			0.000	20
Bromobenzene	25.0	23.9	23.9	95.6	95.6	73.0-121			0.000	20
Bromodichloromethane	25.0	27.3	27.2	109	109	75.0-120			0.367	20
Bromochloromethane	25.0	26.0	26.0	104	104	76.0-122			0.000	20
Bromoform	25.0	25.7	25.7	103	103	68.0-132			0.000	20
Bromomethane	25.0	25.0	24.3	100	97.2	10.0-160			2.84	25
n-Butylbenzene	25.0	25.7	26.8	103	107	73.0-125			4.19	20
sec-Butylbenzene	25.0	25.0	25.2	100	101	75.0-125			0.797	20
tert-Butylbenzene	25.0	25.6	25.5	102	102	76.0-124			0.391	20
Carbon disulfide	25.0	21.6	21.4	86.4	85.6	61.0-128			0.930	20
Carbon tetrachloride	25.0	28.4	28.7	114	115	68.0-126			1.05	20
Chlorobenzene	25.0	24.2	24.1	96.8	96.4	80.0-121			0.414	20
Chlorodibromomethane	25.0	22.8	22.5	91.2	90.0	77.0-125			1.32	20
Chloroethane	25.0	25.1	25.3	100	101	47.0-150			0.794	20
Chloroform	25.0	25.7	25.5	103	102	73.0-120			0.781	20
Chloromethane	25.0	29.0	28.0	116	112	41.0-142			3.51	20
2-Chlorotoluene	25.0	24.6	24.3	98.4	97.2	76.0-123			1.23	20
4-Chlorotoluene	25.0	24.9	24.7	99.6	98.8	75.0-122			0.806	20
1,2-Dibromo-3-Chloropropane	25.0	24.0	24.7	96.0	98.8	58.0-134			2.87	20
1,2-Dibromoethane	25.0	24.7	24.1	98.8	96.4	80.0-122			2.46	20
Dibromomethane	25.0	27.8	27.4	111	110	80.0-120			1.45	20
1,2-Dichlorobenzene	25.0	25.6	25.4	102	102	79.0-121			0.784	20
1,3-Dichlorobenzene	25.0	25.0	24.8	100	99.2	79.0-120			0.803	20
1,4-Dichlorobenzene	25.0	25.0	24.7	100	98.8	79.0-120			1.21	20
Dichlorodifluoromethane	25.0	30.2	28.3	121	113	51.0-149			6.50	20
1,1-Dichloroethane	25.0	26.3	26.3	105	105	70.0-126			0.000	20
1,2-Dichloroethane	25.0	26.1	25.9	104	104	70.0-128			0.769	20
1,1-Dichloroethene	25.0	25.1	25.1	100	100	71.0-124			0.000	20
cis-1,2-Dichloroethene	25.0	24.9	25.2	99.6	101	73.0-120			1.20	20
trans-1,2-Dichloroethene	25.0	23.4	23.4	93.6	93.6	73.0-120			0.000	20
1,2-Dichloropropane	25.0	26.5	26.7	106	107	77.0-125			0.752	20
1,1-Dichloropropene	25.0	26.4	26.1	106	104	74.0-126			1.14	20
1,3-Dichloropropane	25.0	23.6	23.4	94.4	93.6	80.0-120			0.851	20
cis-1,3-Dichloropropene	25.0	27.3	27.1	109	108	80.0-123			0.735	20
trans-1,3-Dichloropropene	25.0	25.3	25.3	101	101	78.0-124			0.000	20
trans-1,4-Dichloro-2-butene	25.0	25.3	24.9	101	99.6	33.0-144			1.59	20
2,2-Dichloropropane	25.0	25.4	24.8	102	99.2	58.0-130			2.39	20
Di-isopropyl ether	25.0	27.7	27.5	111	110	58.0-138			0.725	20

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3461125-1 10/14/19 22:32 • (LCSD) R3461125-2 10/14/19 22:52

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Ethylbenzene	25.0	23.8	23.6	95.2	94.4	79.0-123			0.844	20
Hexachloro-1,3-butadiene	25.0	24.2	27.4	96.8	110	54.0-138			12.4	20
2-Hexanone	125	133	130	106	104	67.0-149			2.28	20
n-Hexane	25.0	25.9	25.6	104	102	57.0-133			1.17	20
Iodomethane	125	125	124	100	99.2	33.0-147			0.803	26
Isopropylbenzene	25.0	25.2	24.7	101	98.8	76.0-127			2.00	20
p-Isopropyltoluene	25.0	26.0	26.3	104	105	76.0-125			1.15	20
2-Butanone (MEK)	125	153	151	122	121	44.0-160			1.32	20
Methylene Chloride	25.0	23.6	24.0	94.4	96.0	67.0-120			1.68	20
4-Methyl-2-pentanone (MIBK)	125	136	134	109	107	68.0-142			1.48	20
Methyl tert-butyl ether	25.0	26.0	25.6	104	102	68.0-125			1.55	20
Naphthalene	25.0	23.8	26.4	95.2	106	54.0-135			10.4	20
n-Propylbenzene	25.0	24.2	24.1	96.8	96.4	77.0-124			0.414	20
Styrene	25.0	26.2	25.7	105	103	73.0-130			1.93	20
1,1,1,2-Tetrachloroethane	25.0	25.3	25.1	101	100	75.0-125			0.794	20
1,1,2,2-Tetrachloroethane	25.0	23.4	23.1	93.6	92.4	65.0-130			1.29	20
1,1,2-Trichlorotrifluoroethane	25.0	25.2	24.7	101	98.8	69.0-132			2.00	20
Tetrachloroethene	25.0	24.7	24.5	98.8	98.0	72.0-132			0.813	20
Toluene	25.0	23.2	23.0	92.8	92.0	79.0-120			0.866	20
1,2,3-Trichlorobenzene	25.0	25.8	28.8	103	115	50.0-138			11.0	20
1,2,4-Trichlorobenzene	25.0	25.3	27.3	101	109	57.0-137			7.60	20
1,1,1-Trichloroethane	25.0	28.0	27.5	112	110	73.0-124			1.80	20
1,1,2-Trichloroethane	25.0	23.9	23.9	95.6	95.6	80.0-120			0.000	20
Trichloroethene	25.0	27.4	27.6	110	110	78.0-124			0.727	20
Trichlorofluoromethane	25.0	30.7	29.7	123	119	59.0-147			3.31	20
1,2,3-Trichloropropane	25.0	25.1	23.9	100	95.6	73.0-130			4.90	20
1,2,4-Trimethylbenzene	25.0	24.0	23.4	96.0	93.6	76.0-121			2.53	20
1,2,3-Trimethylbenzene	25.0	24.5	24.4	98.0	97.6	77.0-120			0.409	20
1,3,5-Trimethylbenzene	25.0	25.0	24.9	100	99.6	76.0-122			0.401	20
Vinyl acetate	125	124	118	99.2	94.4	11.0-160			4.96	20
Vinyl chloride	25.0	27.8	27.5	111	110	67.0-131			1.08	20
Xylenes, Total	75.0	72.2	71.3	96.3	95.1	79.0-123			1.25	20
(S) Toluene-d8				96.2	96.7	80.0-120				
(S) 4-Bromofluorobenzene				101	101	77.0-126				
(S) 1,2-Dichloroethane-d4				112	113	70.0-130				

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



L1148487-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1148487-01 10/15/19 07:24 • (MS) R3461125-4 10/15/19 09:50 • (MSD) R3461125-5 10/15/19 10:11

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acetone	125	7.11	156	159	119	122	1	10.0-160			1.90	35
Acrylonitrile	125	U	144	140	115	112	1	21.0-160			2.82	32
Benzene	25.0	U	24.7	22.9	98.8	91.6	1	17.0-158			7.56	27
Bromobenzene	25.0	U	23.1	22.5	92.4	90.0	1	30.0-149			2.63	28
Bromodichloromethane	25.0	U	28.2	26.5	113	106	1	31.0-150			6.22	27
Bromochloromethane	25.0	U	26.7	25.3	107	101	1	38.0-142			5.38	26
Bromoform	25.0	U	27.5	26.6	110	106	1	29.0-150			3.33	29
Bromomethane	25.0	U	25.0	22.4	100	89.6	1	10.0-160			11.0	38
n-Butylbenzene	25.0	U	26.3	26.3	105	105	1	31.0-150			0.000	30
sec-Butylbenzene	25.0	U	25.7	25.1	103	100	1	33.0-155			2.36	29
tert-Butylbenzene	25.0	U	26.1	25.2	104	101	1	34.0-153			3.51	28
Carbon disulfide	25.0	U	23.3	20.7	93.2	82.8	1	10.0-156			11.8	28
Carbon tetrachloride	25.0	U	31.0	28.0	124	112	1	23.0-159			10.2	28
Chlorobenzene	25.0	U	25.6	24.2	102	96.8	1	33.0-152			5.62	27
Chlorodibromomethane	25.0	U	24.3	23.3	97.2	93.2	1	37.0-149			4.20	27
Chloroethane	25.0	U	25.9	23.6	104	94.4	1	10.0-160			9.29	30
Chloroform	25.0	1.01	27.4	25.2	106	96.8	1	29.0-154			8.37	28
Chloromethane	25.0	U	27.1	24.2	108	96.8	1	10.0-160			11.3	29
2-Chlorotoluene	25.0	U	24.3	23.4	97.2	93.6	1	32.0-153			3.77	28
4-Chlorotoluene	25.0	U	24.3	23.5	97.2	94.0	1	32.0-150			3.35	28
1,2-Dibromo-3-Chloropropane	25.0	U	24.5	25.5	98.0	102	1	22.0-151			4.00	34
1,2-Dibromoethane	25.0	U	25.4	24.3	102	97.2	1	34.0-147			4.43	27
Dibromomethane	25.0	U	28.0	27.4	112	110	1	30.0-151			2.17	27
1,2-Dichlorobenzene	25.0	U	25.4	25.1	102	100	1	34.0-149			1.19	28
1,3-Dichlorobenzene	25.0	U	24.5	24.0	98.0	96.0	1	36.0-146			2.06	27
1,4-Dichlorobenzene	25.0	U	25.3	24.4	101	97.6	1	35.0-142			3.62	27
Dichlorodifluoromethane	25.0	U	32.0	26.6	128	106	1	10.0-160			18.4	29
1,1-Dichloroethane	25.0	U	27.6	25.3	110	101	1	25.0-158			8.70	27
1,2-Dichloroethane	25.0	U	27.0	25.4	108	102	1	29.0-151			6.11	27
1,1-Dichloroethene	25.0	U	27.0	24.0	108	96.0	1	11.0-160			11.8	29
cis-1,2-Dichloroethene	25.0	0.302	26.2	24.2	104	95.6	1	10.0-160			7.94	27
trans-1,2-Dichloroethene	25.0	U	24.6	22.2	98.4	88.8	1	17.0-153			10.3	27
1,2-Dichloropropane	25.0	0.512	27.4	25.7	108	101	1	30.0-156			6.40	27
1,1-Dichloropropene	25.0	U	28.3	25.6	113	102	1	25.0-158			10.0	27
1,3-Dichloropropane	25.0	U	24.2	24.2	96.8	96.8	1	38.0-147			0.000	27
cis-1,3-Dichloropropene	25.0	U	27.2	25.6	109	102	1	34.0-149			6.06	28
trans-1,3-Dichloropropene	25.0	U	26.7	25.5	107	102	1	32.0-149			4.60	28
trans-1,4-Dichloro-2-butene	25.0	U	23.6	23.9	94.4	95.6	1	10.0-157			1.26	37
2,2-Dichloropropane	25.0	U	26.0	23.0	104	92.0	1	24.0-152			12.2	29
Di-isopropyl ether	25.0	U	28.5	27.1	114	108	1	21.0-160			5.04	28

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



L1148487-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1148487-01 10/15/19 07:24 • (MS) R3461125-4 10/15/19 09:50 • (MSD) R3461125-5 10/15/19 10:11

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Ethylbenzene	25.0	U	25.2	23.7	101	94.8	1	30.0-155			6.13	27
Hexachloro-1,3-butadiene	25.0	U	25.4	27.4	102	110	1	20.0-154			7.58	34
2-Hexanone	125	U	138	133	110	106	1	21.0-160			3.69	29
n-Hexane	25.0	U	27.8	25.9	111	104	1	10.0-153			7.08	28
Iodomethane	125	U	130	118	104	94.4	1	10.0-160			9.68	40
Isopropylbenzene	25.0	U	27.3	25.7	109	103	1	28.0-157			6.04	27
p-Isopropyltoluene	25.0	U	26.3	25.8	105	103	1	30.0-154			1.92	29
2-Butanone (MEK)	125	U	158	154	126	123	1	10.0-160			2.56	32
Methylene Chloride	25.0	U	24.3	22.5	97.2	90.0	1	23.0-144			7.69	28
4-Methyl-2-pentanone (MIBK)	125	U	141	138	113	110	1	29.0-160			2.15	29
Methyl tert-butyl ether	25.0	U	26.1	25.3	104	101	1	28.0-150			3.11	29
Naphthalene	25.0	U	24.5	26.7	98.0	107	1	12.0-156			8.59	35
n-Propylbenzene	25.0	U	24.2	23.1	96.8	92.4	1	31.0-154			4.65	28
Styrene	25.0	U	27.3	25.8	109	103	1	33.0-155			5.65	28
1,1,1,2-Tetrachloroethane	25.0	U	27.2	25.9	109	104	1	36.0-151			4.90	29
1,1,2,2-Tetrachloroethane	25.0	U	24.4	24.7	97.6	98.8	1	33.0-150			1.22	28
1,1,2-Trichlorotrifluoroethane	25.0	U	27.2	24.5	109	98.0	1	23.0-160			10.4	30
Tetrachloroethene	25.0	U	27.1	24.8	108	99.2	1	10.0-160			8.86	27
Toluene	25.0	U	24.7	22.9	98.8	91.6	1	26.0-154			7.56	28
1,2,3-Trichlorobenzene	25.0	U	26.4	28.6	106	114	1	17.0-150			8.00	36
1,2,4-Trichlorobenzene	25.0	U	25.5	26.6	102	106	1	24.0-150			4.22	33
1,1,1-Trichloroethane	25.0	0.232	30.3	27.2	120	108	1	23.0-160			10.8	28
1,1,2-Trichloroethane	25.0	U	25.2	24.1	101	96.4	1	35.0-147			4.46	27
Trichloroethene	25.0	2.14	29.6	27.2	110	100	1	10.0-160			8.45	25
Trichlorofluoromethane	25.0	U	33.7	30.2	135	121	1	17.0-160			11.0	31
1,2,3-Trichloropropane	25.0	U	24.0	23.5	96.0	94.0	1	34.0-151			2.11	29
1,2,4-Trimethylbenzene	25.0	U	23.8	23.1	95.2	92.4	1	26.0-154			2.99	27
1,2,3-Trimethylbenzene	25.0	U	24.7	23.9	98.8	95.6	1	32.0-149			3.29	28
1,3,5-Trimethylbenzene	25.0	U	24.7	24.1	98.8	96.4	1	28.0-153			2.46	27
Vinyl acetate	125	U	163	157	130	126	1	12.0-160			3.75	31
Vinyl chloride	25.0	0.139	28.8	25.4	115	101	1	10.0-160			12.5	27
Xylenes, Total	75.0	U	76.4	71.4	102	95.2	1	29.0-154			6.77	28
(S) Toluene-d8					100	99.9		80.0-120				
(S) 4-Bromofluorobenzene					105	105		77.0-126				
(S) 1,2-Dichloroethane-d4					118	114		70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3461296-3 10/15/19 10:02

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
cis-1,2-Dichloroethene	U		0.0933	0.500
Vinyl chloride	U		0.118	0.500
(S) Toluene-d8	94.7			80.0-120
(S) 4-Bromofluorobenzene	93.1			77.0-126
(S) 1,2-Dichloroethane-d4	85.2			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3461296-1 10/15/19 09:03 • (LCSD) R3461296-2 10/15/19 09:23

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
cis-1,2-Dichloroethene	25.0	25.8	26.4	103	106	73.0-120			2.30	20
Vinyl chloride	25.0	26.0	27.6	104	110	67.0-131			5.97	20
(S) Toluene-d8				93.5	93.1	80.0-120				
(S) 4-Bromofluorobenzene				95.6	94.6	77.0-126				
(S) 1,2-Dichloroethane-d4				85.9	81.0	70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration met method criteria.
V	The sample concentration is too high to evaluate accurate spike recoveries.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 GI

8 AI

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

PES Environmental, Inc.- WA

1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Billing Information:
Attn: Accounts Payable
1215 Fourth Ave., Ste. 1350
Seattle, WA 98161

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page of



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



Report to:
Brian O'Neal/Bill Haldeman

Email To: boneal@pesenv.com; *KVHIC@PESENV.COM*
bhaldeman@pesenv.com;

Project Description: *American Lines* City/State Collected: *Seattle, WA* Please Circle: PT MT CT ET

Phone: 206-529-3980 Client Project # *American Lines* Lab Project # **PESENVSWA-ALP**
Fax: 206-529-3985

Collected by (print): *Ben Hecht* Site/Facility ID # *1413.001.02.501E* P.O. #

Collected by (signature): *[Signature]* Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day Date Results Needed

Packed on Ice N Y No. of Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
<i>MW-320-100719</i>	<i>Grab</i>	<i>GW</i>	<i>20</i>	<i>10-7-19</i>	<i>1222</i>	<i>9</i>
<i>MW-322-100719</i>	<i>Grab</i>	<i>GW</i>	<i>59.5</i>	<i>" "</i>	<i>1350</i>	<i>9</i>
<i>TRIP-100719</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>10-7-19</i>	<i>1530</i>	<i>1</i>

NO3,SO4,Cl 125mlHDPE-NoPres
Alkalinity 125mlHDPE-NoPres
EEM RSK175LL 40mlAmb-HCl
TOC 250mlAmb-HCl
Total Fe, Mn 6020 250mlHDPE-HNO3
VOCs 8260LLC 40mlAmb-HCl

SDG # *L1147264*
B206
Acctnum: **PESENVSWA**
Template: **T155685**
Prelogin: **P729671**
PM: **110 - Brian Ford**
PB: *9/12/19*
Shipped Via: **FedEx Ground**

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks: *No 250 Amb provided, No TOC*

Samples returned via: UPS FedEx Courier Tracking # *1203 5780 87418*

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD Screen <0.5 mR/hr: Y N

Relinquished by: (Signature) *[Signature]*

Date: *10-7-19* Time: *1530*

Received by: (Signature) *[Signature]*

Trip Blank Received: Yes No
HCL / MeOH
TBR

Relinquished by: (Signature)

Date: Time:

Received by: (Signature)

Temp: *10.2=0.8* °C Bottles Received: *18*

If preservation required by Login: Date/Time

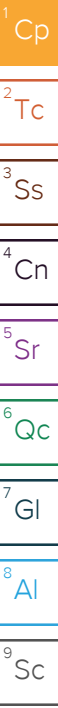
Relinquished by: (Signature)

Date: Time:

Received for lab by: (Signature) *[Signature]*

Date: *10/18* Time: *0830*

Hold: Condition: **NCF / OK**



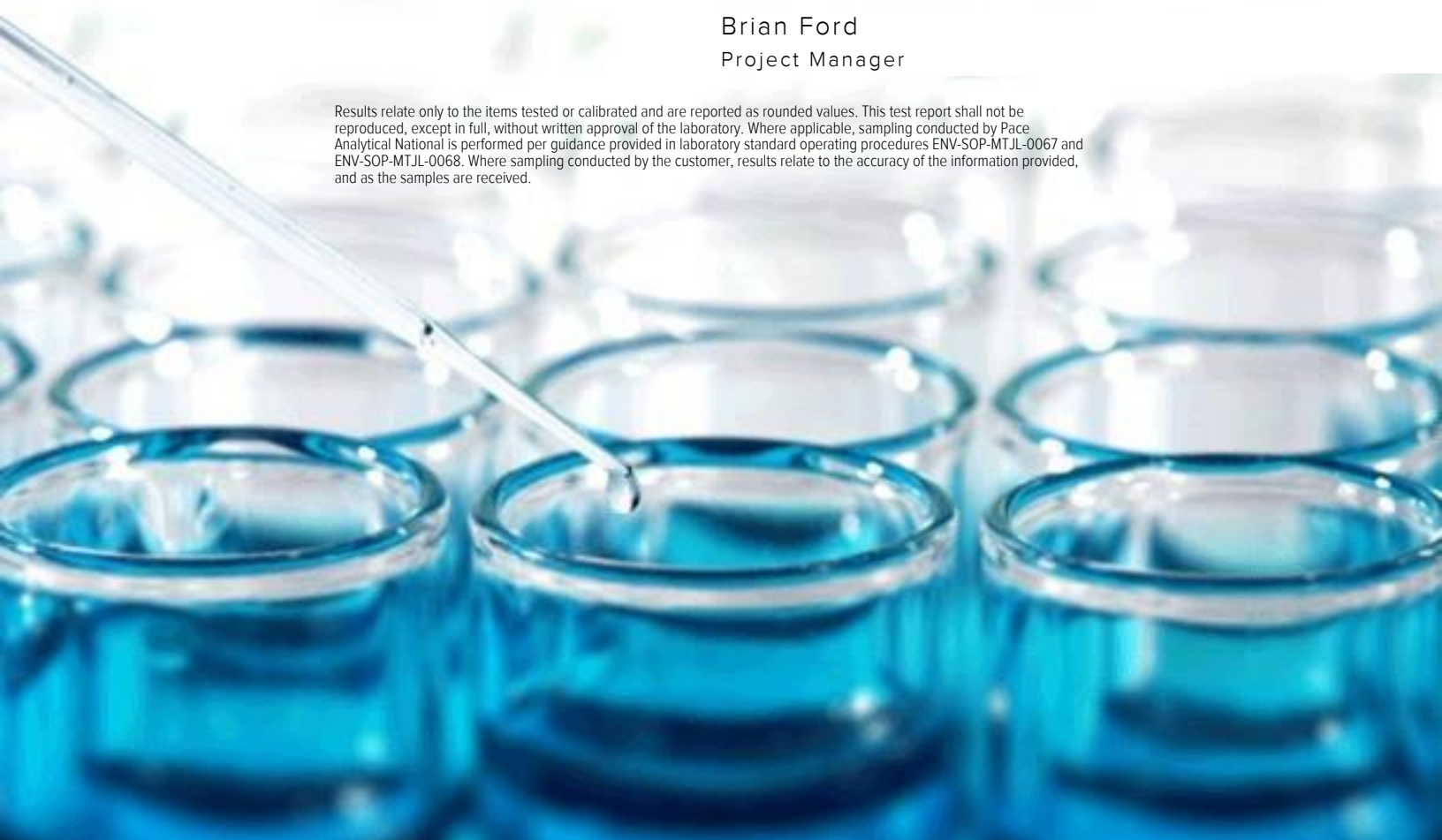
PES Environmental, Inc.- WA

Sample Delivery Group: L1147791
Samples Received: 10/09/2019
Project Number: 1413.001.02.501E
Description: 1413.001.02.501E
Site: 1431.001.02.501E
Report To: Brian O'Neal/Bill Haldeman
1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Entire Report Reviewed By:

Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





Cp: Cover Page	1	¹Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	²Tc
Cn: Case Narrative	4	
Sr: Sample Results	5	³Ss
MW-318-100819 L1147791-01	5	
MW-319-100819 L1147791-02	7	⁴Cn
TRIPBLANK-100919 L1147791-03	9	⁵Sr
Qc: Quality Control Summary	11	
Wet Chemistry by Method 2320 B-2011	11	⁶Qc
Wet Chemistry by Method 9056A	12	
Wet Chemistry by Method 9060A	16	⁷Gl
Metals (ICPMS) by Method 6020B	18	⁸Al
Volatile Organic Compounds (GC) by Method RSK175	19	
Volatile Organic Compounds (GC/MS) by Method 8260C	20	⁹Sc
Gl: Glossary of Terms	24	
Al: Accreditations & Locations	25	
Sc: Sample Chain of Custody	26	

SAMPLE SUMMARY

MW-318-100819 L1147791-01 GW

Collected by: Ben Hecht
 Collected date/time: 10/08/19 14:40
 Received date/time: 10/09/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1362380	1	10/15/19 14:51	10/15/19 14:51	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1359667	1	10/09/19 17:14	10/09/19 17:14	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1359667	5	10/10/19 09:51	10/10/19 09:51	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1362294	1	10/13/19 18:41	10/13/19 18:41	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1360694	20	10/13/19 14:41	10/13/19 21:58	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1361751	1	10/12/19 07:37	10/12/19 07:37	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1364657	1	10/17/19 17:04	10/17/19 17:04	BMB	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

MW-319-100819 L1147791-02 GW

Collected by: Ben Hecht
 Collected date/time: 10/08/19 12:50
 Received date/time: 10/09/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1362380	1	10/15/19 14:58	10/15/19 14:58	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1359967	1	10/09/19 16:21	10/09/19 16:21	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1361408	1	10/12/19 14:04	10/12/19 14:04	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1360694	5	10/13/19 14:41	10/13/19 22:03	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1361751	1	10/12/19 07:40	10/12/19 07:40	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1364657	1	10/17/19 17:24	10/17/19 17:24	BMB	Mt. Juliet, TN

TRIPBLANK-100919 L1147791-03 GW

Collected by: Ben Hecht
 Collected date/time: 10/08/19 15:00
 Received date/time: 10/09/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1364657	1	10/17/19 13:41	10/17/19 13:41	BMB	Mt. Juliet, TN



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	339000		2710	20000	1	10/15/2019 14:51	WG1362380

Sample Narrative:

L1147791-01 WG1362380: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	24100		51.9	1000	1	10/09/2019 17:14	WG1359667
Nitrate	U		22.7	100	1	10/09/2019 17:14	WG1359667
Sulfate	119000		387	25000	5	10/10/2019 09:51	WG1359667

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	6730		102	1000	1	10/13/2019 18:41	WG1362294

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	11700		300	2000	20	10/13/2019 21:58	WG1360694
Manganese	2330		5.00	100	20	10/13/2019 21:58	WG1360694

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	355		0.287	0.678	1	10/12/2019 07:37	WG1361751
Ethane	12.8		0.296	1.29	1	10/12/2019 07:37	WG1361751
Ethene	U		0.422	1.27	1	10/12/2019 07:37	WG1361751

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.15	J	1.05	25.0	1	10/17/2019 17:04	WG1364657
Acrylonitrile	U		0.873	5.00	1	10/17/2019 17:04	WG1364657
Benzene	5.75		0.0896	0.500	1	10/17/2019 17:04	WG1364657
Bromobenzene	U		0.133	0.500	1	10/17/2019 17:04	WG1364657
Bromodichloromethane	U		0.0800	0.500	1	10/17/2019 17:04	WG1364657
Bromochloromethane	U		0.145	0.500	1	10/17/2019 17:04	WG1364657
Bromoform	U		0.186	0.500	1	10/17/2019 17:04	WG1364657
Bromomethane	U		0.157	2.50	1	10/17/2019 17:04	WG1364657
n-Butylbenzene	U		0.143	0.500	1	10/17/2019 17:04	WG1364657
sec-Butylbenzene	U		0.134	0.500	1	10/17/2019 17:04	WG1364657
tert-Butylbenzene	U		0.183	0.500	1	10/17/2019 17:04	WG1364657
Carbon disulfide	U		0.101	0.500	1	10/17/2019 17:04	WG1364657
Carbon tetrachloride	U		0.159	0.500	1	10/17/2019 17:04	WG1364657
Chlorobenzene	U		0.140	0.500	1	10/17/2019 17:04	WG1364657
Chlorodibromomethane	U		0.128	0.500	1	10/17/2019 17:04	WG1364657
Chloroethane	U		0.141	2.50	1	10/17/2019 17:04	WG1364657
Chloroform	U		0.0860	0.500	1	10/17/2019 17:04	WG1364657
Chloromethane	U		0.153	1.25	1	10/17/2019 17:04	WG1364657
2-Chlorotoluene	U		0.111	0.500	1	10/17/2019 17:04	WG1364657
4-Chlorotoluene	U		0.0972	0.500	1	10/17/2019 17:04	WG1364657

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/17/2019 17:04	WG1364657
1,2-Dibromoethane	U		0.193	0.500	1	10/17/2019 17:04	WG1364657
Dibromomethane	U		0.117	0.500	1	10/17/2019 17:04	WG1364657
1,2-Dichlorobenzene	U		0.101	0.500	1	10/17/2019 17:04	WG1364657
1,3-Dichlorobenzene	U		0.130	0.500	1	10/17/2019 17:04	WG1364657
1,4-Dichlorobenzene	U		0.121	0.500	1	10/17/2019 17:04	WG1364657
Dichlorodifluoromethane	U		0.127	2.50	1	10/17/2019 17:04	WG1364657
1,1-Dichloroethane	0.490	U	0.114	0.500	1	10/17/2019 17:04	WG1364657
1,2-Dichloroethane	1.55		0.108	0.500	1	10/17/2019 17:04	WG1364657
1,1-Dichloroethene	U		0.188	0.500	1	10/17/2019 17:04	WG1364657
cis-1,2-Dichloroethene	6.52		0.0933	0.500	1	10/17/2019 17:04	WG1364657
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/17/2019 17:04	WG1364657
1,2-Dichloropropane	0.274	U	0.190	0.500	1	10/17/2019 17:04	WG1364657
1,1-Dichloropropene	U		0.128	0.500	1	10/17/2019 17:04	WG1364657
1,3-Dichloropropane	U		0.147	1.00	1	10/17/2019 17:04	WG1364657
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/17/2019 17:04	WG1364657
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/17/2019 17:04	WG1364657
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/17/2019 17:04	WG1364657
2,2-Dichloropropane	U		0.0929	0.500	1	10/17/2019 17:04	WG1364657
Di-isopropyl ether	U		0.0924	0.500	1	10/17/2019 17:04	WG1364657
Ethylbenzene	U		0.158	0.500	1	10/17/2019 17:04	WG1364657
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/17/2019 17:04	WG1364657
2-Hexanone	U		0.757	5.00	1	10/17/2019 17:04	WG1364657
n-Hexane	U		0.305	5.00	1	10/17/2019 17:04	WG1364657
Iodomethane	U		0.377	10.0	1	10/17/2019 17:04	WG1364657
Isopropylbenzene	U		0.126	0.500	1	10/17/2019 17:04	WG1364657
p-Isopropyltoluene	U		0.138	0.500	1	10/17/2019 17:04	WG1364657
2-Butanone (MEK)	U		1.28	5.00	1	10/17/2019 17:04	WG1364657
Methylene Chloride	U		1.07	2.50	1	10/17/2019 17:04	WG1364657
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/17/2019 17:04	WG1364657
Methyl tert-butyl ether	U		0.102	0.500	1	10/17/2019 17:04	WG1364657
Naphthalene	U		0.174	2.50	1	10/17/2019 17:04	WG1364657
n-Propylbenzene	U		0.162	0.500	1	10/17/2019 17:04	WG1364657
Styrene	U		0.117	0.500	1	10/17/2019 17:04	WG1364657
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/17/2019 17:04	WG1364657
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/17/2019 17:04	WG1364657
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/17/2019 17:04	WG1364657
Tetrachloroethene	U		0.199	0.500	1	10/17/2019 17:04	WG1364657
Toluene	0.495	U	0.412	0.500	1	10/17/2019 17:04	WG1364657
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/17/2019 17:04	WG1364657
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/17/2019 17:04	WG1364657
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/17/2019 17:04	WG1364657
1,1,2-Trichloroethane	U		0.186	0.500	1	10/17/2019 17:04	WG1364657
Trichloroethene	U		0.153	0.500	1	10/17/2019 17:04	WG1364657
Trichlorofluoromethane	U		0.130	2.50	1	10/17/2019 17:04	WG1364657
1,2,3-Trichloropropane	U		0.247	2.50	1	10/17/2019 17:04	WG1364657
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/17/2019 17:04	WG1364657
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/17/2019 17:04	WG1364657
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/17/2019 17:04	WG1364657
Vinyl acetate	U		0.645	5.00	1	10/17/2019 17:04	WG1364657
Vinyl chloride	8.65		0.118	0.500	1	10/17/2019 17:04	WG1364657
Xylenes, Total	U		0.316	1.50	1	10/17/2019 17:04	WG1364657
(S) Toluene-d8	112			80.0-120		10/17/2019 17:04	WG1364657
(S) 4-Bromofluorobenzene	115			77.0-126		10/17/2019 17:04	WG1364657
(S) 1,2-Dichloroethane-d4	109			70.0-130		10/17/2019 17:04	WG1364657

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	234000		2710	20000	1	10/15/2019 14:58	WG1362380

Sample Narrative:

L1147791-02 WG1362380: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	16500		51.9	1000	1	10/09/2019 16:21	WG1359967
Nitrate	U		22.7	100	1	10/09/2019 16:21	WG1359967
Sulfate	85000		77.4	5000	1	10/09/2019 16:21	WG1359967

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	1680	<u>B</u>	102	1000	1	10/12/2019 14:04	WG1361408

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	4300		75.0	500	5	10/13/2019 22:03	WG1360694
Manganese	854		1.25	25.0	5	10/13/2019 22:03	WG1360694

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	152		0.287	0.678	1	10/12/2019 07:40	WG1361751
Ethane	U		0.296	1.29	1	10/12/2019 07:40	WG1361751
Ethene	U		0.422	1.27	1	10/12/2019 07:40	WG1361751

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		1.05	25.0	1	10/17/2019 17:24	WG1364657
Acrylonitrile	U		0.873	5.00	1	10/17/2019 17:24	WG1364657
Benzene	U		0.0896	0.500	1	10/17/2019 17:24	WG1364657
Bromobenzene	U		0.133	0.500	1	10/17/2019 17:24	WG1364657
Bromodichloromethane	U		0.0800	0.500	1	10/17/2019 17:24	WG1364657
Bromochloromethane	U		0.145	0.500	1	10/17/2019 17:24	WG1364657
Bromoform	U		0.186	0.500	1	10/17/2019 17:24	WG1364657
Bromomethane	U		0.157	2.50	1	10/17/2019 17:24	WG1364657
n-Butylbenzene	U		0.143	0.500	1	10/17/2019 17:24	WG1364657
sec-Butylbenzene	U		0.134	0.500	1	10/17/2019 17:24	WG1364657
tert-Butylbenzene	U		0.183	0.500	1	10/17/2019 17:24	WG1364657
Carbon disulfide	0.505		0.101	0.500	1	10/17/2019 17:24	WG1364657
Carbon tetrachloride	U		0.159	0.500	1	10/17/2019 17:24	WG1364657
Chlorobenzene	U		0.140	0.500	1	10/17/2019 17:24	WG1364657
Chlorodibromomethane	U		0.128	0.500	1	10/17/2019 17:24	WG1364657
Chloroethane	U		0.141	2.50	1	10/17/2019 17:24	WG1364657
Chloroform	U		0.0860	0.500	1	10/17/2019 17:24	WG1364657
Chloromethane	U		0.153	1.25	1	10/17/2019 17:24	WG1364657
2-Chlorotoluene	U		0.111	0.500	1	10/17/2019 17:24	WG1364657
4-Chlorotoluene	U		0.0972	0.500	1	10/17/2019 17:24	WG1364657

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/08/19 12:50

L1147791

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/17/2019 17:24	WG1364657
1,2-Dibromoethane	U		0.193	0.500	1	10/17/2019 17:24	WG1364657
Dibromomethane	U		0.117	0.500	1	10/17/2019 17:24	WG1364657
1,2-Dichlorobenzene	U		0.101	0.500	1	10/17/2019 17:24	WG1364657
1,3-Dichlorobenzene	U		0.130	0.500	1	10/17/2019 17:24	WG1364657
1,4-Dichlorobenzene	U		0.121	0.500	1	10/17/2019 17:24	WG1364657
Dichlorodifluoromethane	U		0.127	2.50	1	10/17/2019 17:24	WG1364657
1,1-Dichloroethane	0.641		0.114	0.500	1	10/17/2019 17:24	WG1364657
1,2-Dichloroethane	0.140	U	0.108	0.500	1	10/17/2019 17:24	WG1364657
1,1-Dichloroethene	0.292	U	0.188	0.500	1	10/17/2019 17:24	WG1364657
cis-1,2-Dichloroethene	53.4		0.0933	0.500	1	10/17/2019 17:24	WG1364657
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/17/2019 17:24	WG1364657
1,2-Dichloropropane	U		0.190	0.500	1	10/17/2019 17:24	WG1364657
1,1-Dichloropropene	U		0.128	0.500	1	10/17/2019 17:24	WG1364657
1,3-Dichloropropane	U		0.147	1.00	1	10/17/2019 17:24	WG1364657
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/17/2019 17:24	WG1364657
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/17/2019 17:24	WG1364657
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/17/2019 17:24	WG1364657
2,2-Dichloropropane	U		0.0929	0.500	1	10/17/2019 17:24	WG1364657
Di-isopropyl ether	U		0.0924	0.500	1	10/17/2019 17:24	WG1364657
Ethylbenzene	U		0.158	0.500	1	10/17/2019 17:24	WG1364657
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/17/2019 17:24	WG1364657
2-Hexanone	U		0.757	5.00	1	10/17/2019 17:24	WG1364657
n-Hexane	U		0.305	5.00	1	10/17/2019 17:24	WG1364657
Iodomethane	U		0.377	10.0	1	10/17/2019 17:24	WG1364657
Isopropylbenzene	U		0.126	0.500	1	10/17/2019 17:24	WG1364657
p-Isopropyltoluene	U		0.138	0.500	1	10/17/2019 17:24	WG1364657
2-Butanone (MEK)	U		1.28	5.00	1	10/17/2019 17:24	WG1364657
Methylene Chloride	U		1.07	2.50	1	10/17/2019 17:24	WG1364657
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/17/2019 17:24	WG1364657
Methyl tert-butyl ether	U		0.102	0.500	1	10/17/2019 17:24	WG1364657
Naphthalene	U		0.174	2.50	1	10/17/2019 17:24	WG1364657
n-Propylbenzene	U		0.162	0.500	1	10/17/2019 17:24	WG1364657
Styrene	U		0.117	0.500	1	10/17/2019 17:24	WG1364657
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/17/2019 17:24	WG1364657
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/17/2019 17:24	WG1364657
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/17/2019 17:24	WG1364657
Tetrachloroethene	0.609		0.199	0.500	1	10/17/2019 17:24	WG1364657
Toluene	U		0.412	0.500	1	10/17/2019 17:24	WG1364657
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/17/2019 17:24	WG1364657
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/17/2019 17:24	WG1364657
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/17/2019 17:24	WG1364657
1,1,2-Trichloroethane	U		0.186	0.500	1	10/17/2019 17:24	WG1364657
Trichloroethene	8.12		0.153	0.500	1	10/17/2019 17:24	WG1364657
Trichlorofluoromethane	U		0.130	2.50	1	10/17/2019 17:24	WG1364657
1,2,3-Trichloropropane	U		0.247	2.50	1	10/17/2019 17:24	WG1364657
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/17/2019 17:24	WG1364657
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/17/2019 17:24	WG1364657
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/17/2019 17:24	WG1364657
Vinyl acetate	U		0.645	5.00	1	10/17/2019 17:24	WG1364657
Vinyl chloride	5.76		0.118	0.500	1	10/17/2019 17:24	WG1364657
Xylenes, Total	U		0.316	1.50	1	10/17/2019 17:24	WG1364657
(S) Toluene-d8	112			80.0-120		10/17/2019 17:24	WG1364657
(S) 4-Bromofluorobenzene	113			77.0-126		10/17/2019 17:24	WG1364657
(S) 1,2-Dichloroethane-d4	105			70.0-130		10/17/2019 17:24	WG1364657

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.78	J	1.05	25.0	1	10/17/2019 13:41	WG1364657
Acrylonitrile	U		0.873	5.00	1	10/17/2019 13:41	WG1364657
Benzene	U		0.0896	0.500	1	10/17/2019 13:41	WG1364657
Bromobenzene	U		0.133	0.500	1	10/17/2019 13:41	WG1364657
Bromodichloromethane	U		0.0800	0.500	1	10/17/2019 13:41	WG1364657
Bromochloromethane	U		0.145	0.500	1	10/17/2019 13:41	WG1364657
Bromoform	U		0.186	0.500	1	10/17/2019 13:41	WG1364657
Bromomethane	U		0.157	2.50	1	10/17/2019 13:41	WG1364657
n-Butylbenzene	U		0.143	0.500	1	10/17/2019 13:41	WG1364657
sec-Butylbenzene	U		0.134	0.500	1	10/17/2019 13:41	WG1364657
tert-Butylbenzene	U		0.183	0.500	1	10/17/2019 13:41	WG1364657
Carbon disulfide	U		0.101	0.500	1	10/17/2019 13:41	WG1364657
Carbon tetrachloride	U		0.159	0.500	1	10/17/2019 13:41	WG1364657
Chlorobenzene	U		0.140	0.500	1	10/17/2019 13:41	WG1364657
Chlorodibromomethane	U		0.128	0.500	1	10/17/2019 13:41	WG1364657
Chloroethane	U		0.141	2.50	1	10/17/2019 13:41	WG1364657
Chloroform	U		0.0860	0.500	1	10/17/2019 13:41	WG1364657
Chloromethane	U		0.153	1.25	1	10/17/2019 13:41	WG1364657
2-Chlorotoluene	U		0.111	0.500	1	10/17/2019 13:41	WG1364657
4-Chlorotoluene	U		0.0972	0.500	1	10/17/2019 13:41	WG1364657
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/17/2019 13:41	WG1364657
1,2-Dibromoethane	U		0.193	0.500	1	10/17/2019 13:41	WG1364657
Dibromomethane	U		0.117	0.500	1	10/17/2019 13:41	WG1364657
1,2-Dichlorobenzene	U		0.101	0.500	1	10/17/2019 13:41	WG1364657
1,3-Dichlorobenzene	U		0.130	0.500	1	10/17/2019 13:41	WG1364657
1,4-Dichlorobenzene	U		0.121	0.500	1	10/17/2019 13:41	WG1364657
Dichlorodifluoromethane	U		0.127	2.50	1	10/17/2019 13:41	WG1364657
1,1-Dichloroethane	U		0.114	0.500	1	10/17/2019 13:41	WG1364657
1,2-Dichloroethane	U		0.108	0.500	1	10/17/2019 13:41	WG1364657
1,1-Dichloroethene	U		0.188	0.500	1	10/17/2019 13:41	WG1364657
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/17/2019 13:41	WG1364657
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/17/2019 13:41	WG1364657
1,2-Dichloropropane	U		0.190	0.500	1	10/17/2019 13:41	WG1364657
1,1-Dichloropropene	U		0.128	0.500	1	10/17/2019 13:41	WG1364657
1,3-Dichloropropane	U		0.147	1.00	1	10/17/2019 13:41	WG1364657
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/17/2019 13:41	WG1364657
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/17/2019 13:41	WG1364657
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/17/2019 13:41	WG1364657
2,2-Dichloropropane	U		0.0929	0.500	1	10/17/2019 13:41	WG1364657
Di-isopropyl ether	U		0.0924	0.500	1	10/17/2019 13:41	WG1364657
Ethylbenzene	U		0.158	0.500	1	10/17/2019 13:41	WG1364657
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/17/2019 13:41	WG1364657
2-Hexanone	U		0.757	5.00	1	10/17/2019 13:41	WG1364657
n-Hexane	U		0.305	5.00	1	10/17/2019 13:41	WG1364657
Iodomethane	U		0.377	10.0	1	10/17/2019 13:41	WG1364657
Isopropylbenzene	U		0.126	0.500	1	10/17/2019 13:41	WG1364657
p-Isopropyltoluene	U		0.138	0.500	1	10/17/2019 13:41	WG1364657
2-Butanone (MEK)	U		1.28	5.00	1	10/17/2019 13:41	WG1364657
Methylene Chloride	U		1.07	2.50	1	10/17/2019 13:41	WG1364657
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/17/2019 13:41	WG1364657
Methyl tert-butyl ether	U		0.102	0.500	1	10/17/2019 13:41	WG1364657
Naphthalene	U		0.174	2.50	1	10/17/2019 13:41	WG1364657
n-Propylbenzene	U		0.162	0.500	1	10/17/2019 13:41	WG1364657
Styrene	U		0.117	0.500	1	10/17/2019 13:41	WG1364657
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/17/2019 13:41	WG1364657
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/17/2019 13:41	WG1364657

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/08/19 15:00

L1147791

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/17/2019 13:41	WG1364657
Tetrachloroethene	U		0.199	0.500	1	10/17/2019 13:41	WG1364657
Toluene	U		0.412	0.500	1	10/17/2019 13:41	WG1364657
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/17/2019 13:41	WG1364657
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/17/2019 13:41	WG1364657
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/17/2019 13:41	WG1364657
1,1,2-Trichloroethane	U		0.186	0.500	1	10/17/2019 13:41	WG1364657
Trichloroethene	U		0.153	0.500	1	10/17/2019 13:41	WG1364657
Trichlorofluoromethane	U		0.130	2.50	1	10/17/2019 13:41	WG1364657
1,2,3-Trichloropropane	U		0.247	2.50	1	10/17/2019 13:41	WG1364657
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/17/2019 13:41	WG1364657
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/17/2019 13:41	WG1364657
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/17/2019 13:41	WG1364657
Vinyl acetate	U		0.645	5.00	1	10/17/2019 13:41	WG1364657
Vinyl chloride	U		0.118	0.500	1	10/17/2019 13:41	WG1364657
Xylenes, Total	U		0.316	1.50	1	10/17/2019 13:41	WG1364657
(S) Toluene-d8	112			80.0-120		10/17/2019 13:41	WG1364657
(S) 4-Bromofluorobenzene	114			77.0-126		10/17/2019 13:41	WG1364657
(S) 1,2-Dichloroethane-d4	104			70.0-130		10/17/2019 13:41	WG1364657

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3461328-1 10/15/19 13:25

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	3660	↓	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1147759-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1147759-01 10/15/19 13:42 • (DUP) R3461328-2 10/15/19 13:50

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	86100	87900	1	2.05		20

Sample Narrative:

OS: Endpoint pH 4.5 HEADSPACE

DUP: Endpoint pH 4.5

L1147836-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1147836-01 10/15/19 15:29 • (DUP) R3461328-4 10/15/19 15:37

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	29000	28800	1	0.445		20

Sample Narrative:

OS: Endpoint pH 4.5

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3461328-3 10/15/19 14:42

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	99500	99.5	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3459685-1 10/09/19 09:03

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	U		51.9	1000
Nitrate	26.7	J	22.7	100
Sulfate	U		77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1147506-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1147506-01 10/09/19 10:51 • (DUP) R3459685-3 10/09/19 11:06

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	47700	47200	1	1.15		15
Nitrate	ND	0.000	1	0.000		15
Sulfate	46700	46900	1	0.300		15

L1147759-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1147759-01 10/09/19 14:50 • (DUP) R3459685-6 10/09/19 15:04

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	10500	10600	1	1.51		15
Nitrate	451	507	1	11.8		15
Sulfate	5300	5550	1	4.63		15

L1147506-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1147506-01 10/09/19 10:51 • (DUP) R3459685-8 10/10/19 09:22

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	47700	47800	1	0.169		15
Nitrate	ND	0.000	1	0.000		15
Sulfate	46700	45100	1	3.59		15



Laboratory Control Sample (LCS)

(LCS) R3459685-2 10/09/19 10:16

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Chloride	40000	38500	96.2	80.0-120	
Nitrate	8000	8000	100	80.0-120	
Sulfate	40000	39300	98.2	80.0-120	

L1147506-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1147506-01 10/09/19 10:51 • (MS) R3459685-4 10/09/19 11:20 • (MSD) R3459685-5 10/09/19 11:34

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Chloride	50000	47700	95800	95600	96.1	95.8	1	80.0-120			0.160	15
Nitrate	5000	ND	5160	5100	103	102	1	80.0-120			1.12	15
Sulfate	50000	46700	94200	94200	94.9	94.9	1	80.0-120			0.00860	15

L1147759-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1147759-01 10/09/19 14:50 • (MS) R3459685-7 10/09/19 15:18

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Chloride	50000	10500	60200	99.5	1	80.0-120	
Nitrate	5000	451	5660	104	1	80.0-120	
Sulfate	50000	5300	56200	102	1	80.0-120	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3459637-1 10/09/19 09:15

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Chloride	U		51.9	1000
Nitrate	U		22.7	100
Sulfate	U		77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1147783-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1147783-01 10/09/19 15:46 • (DUP) R3459637-3 10/09/19 16:03

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	375000	374000	1	0.112	E	15
Nitrate	5450	5430	1	0.357		15
Sulfate	320000	319000	1	0.196	E	15

L1147817-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1147817-05 10/09/19 21:21 • (DUP) R3459637-6 10/09/19 21:38

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	68600	68500	1	0.167		15
Nitrate	499	497	1	0.502		15

L1147817-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1147817-05 10/10/19 08:42 • (DUP) R3459637-8 10/10/19 08:59

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Sulfate	102000	101000	5	0.577		15

Laboratory Control Sample (LCS)

(LCS) R3459637-2 10/09/19 09:33

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Chloride	40000	38700	96.8	80.0-120	
Nitrate	8000	7560	94.5	80.0-120	
Sulfate	40000	39500	98.8	80.0-120	



[L1147791-02](#)

L1147791-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1147791-02 10/09/19 16:21 • (MS) R3459637-4 10/09/19 16:39 • (MSD) R3459637-5 10/09/19 17:31

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	16500	65700	65400	98.4	97.8	1	80.0-120			0.484	15
Nitrate	5000	U	4830	4950	96.7	99.0	1	80.0-120			2.39	15
Sulfate	50000	85000	129000	129000	87.2	87.8	1	80.0-120	E	E	0.263	15

L1147817-11 Original Sample (OS) • Matrix Spike (MS)

(OS) L1147817-11 10/09/19 23:24 • (MS) R3459637-7 10/09/19 23:42

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	40200	88200	96.0	1	80.0-120	
Nitrate	5000	U	4960	99.2	1	80.0-120	
Sulfate	50000	4820	54700	99.8	1	80.0-120	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3460434-1 10/11/19 12:20

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	268	↓	102	1000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

L1147504-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1147504-01 10/11/19 14:34 • (DUP) R3460434-3 10/11/19 14:48

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	14400	14500	1	0.346		20

⁶ Qc

L1147595-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1147595-04 10/12/19 11:21 • (DUP) R3460434-6 10/12/19 11:36

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	ND	319	1	6.60	↓	20

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS)

(LCS) R3460434-2 10/11/19 12:51

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC (Total Organic Carbon)	75000	73100	97.4	85.0-115	

L1147591-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1147591-01 10/12/19 09:53 • (MS) R3460434-4 10/12/19 10:10 • (MSD) R3460434-5 10/12/19 10:29

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	2630	50700	50800	96.2	96.3	1	80.0-120			0.118	20



Method Blank (MB)

(MB) R3461010-1 10/13/19 17:37

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	662	↓	102	1000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1148464-41 Original Sample (OS) • Duplicate (DUP)

(OS) L1148464-41 10/13/19 19:54 • (DUP) R3461010-3 10/13/19 20:12

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	ND	640	1	11.4	↓	20

L1148844-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1148844-06 10/14/19 00:29 • (DUP) R3461010-6 10/14/19 00:50

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	27900	28400	1	1.67		20

Laboratory Control Sample (LCS)

(LCS) R3461010-2 10/13/19 18:20

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC (Total Organic Carbon)	75000	77100	103	85.0-115	

L1148844-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1148844-04 10/13/19 23:08 • (MS) R3461010-4 10/13/19 23:29 • (MSD) R3461010-5 10/13/19 23:50

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	4760	56900	55100	104	101	1	80.0-120			3.30	20

L1148900-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1148900-04 10/14/19 03:05 • (MS) R3461010-7 10/14/19 03:26 • (MSD) R3461010-8 10/14/19 03:49

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	5310	57700	57900	105	105	1	80.0-120			0.380	20



Method Blank (MB)

(MB) R3460588-1 10/13/19 19:20

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Iron	U		15.0	100
Manganese	U		0.250	5.00

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3460588-2 10/13/19 19:25 • (LCSD) R3460588-3 10/13/19 19:29

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Iron	5000	4810	4750	96.1	95.0	80.0-120			1.16	20
Manganese	50.0	48.3	47.7	96.7	95.3	80.0-120			1.39	20

5 Sr

6 Qc

L1147631-15 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1147631-15 10/13/19 19:34 • (MS) R3460588-5 10/13/19 19:43 • (MSD) R3460588-6 10/13/19 19:48

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Iron	5000	37.6	4920	4800	97.6	95.3	1	75.0-125			2.37	20
Manganese	50.0	3.17	51.5	50.4	96.6	94.5	1	75.0-125			2.04	20

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3460315-1 10/12/19 05:49

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

L1147409-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1147409-01 10/12/19 06:15 • (DUP) R3460315-2 10/12/19 07:17

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	169	179	1	5.68		20
Ethane	4.30	4.52	1	4.90		20
Ethene	U	0.000	1	0.000		20

L1148238-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1148238-09 10/12/19 07:51 • (DUP) R3460315-3 10/12/19 07:53

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	573	586	1	2.21		20
Ethane	ND	7.66	1	0.0732		20
Ethene	23.1	24.2	1	4.51		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3460315-4 10/12/19 08:00 • (LCSD) R3460315-5 10/12/19 08:03

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	72.8	73.9	107	109	85.0-115			1.49	20
Ethane	129	128	130	99.0	101	85.0-115			1.69	20
Ethene	127	134	135	105	106	85.0-115			1.08	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3462245-3 10/17/19 12:06

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3462245-3 10/17/19 12:06

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	113			80.0-120
(S) 4-Bromofluorobenzene	108			77.0-126
(S) 1,2-Dichloroethane-d4	102			70.0-130

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

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Al

9
Sc



Laboratory Control Sample (LCS)

(LCS) R3462245-1 10/17/19 11:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Acetone	125	159	127	19.0-160	
Acrylonitrile	125	136	109	55.0-149	
Benzene	25.0	21.8	87.2	70.0-123	
Bromobenzene	25.0	21.6	86.4	73.0-121	
Bromodichloromethane	25.0	22.7	90.8	75.0-120	
Bromochloromethane	25.0	25.5	102	76.0-122	
Bromoform	25.0	29.0	116	68.0-132	
Bromomethane	25.0	22.7	90.8	10.0-160	
n-Butylbenzene	25.0	22.8	91.2	73.0-125	
sec-Butylbenzene	25.0	23.2	92.8	75.0-125	
tert-Butylbenzene	25.0	25.3	101	76.0-124	
Carbon disulfide	25.0	21.1	84.4	61.0-128	
Carbon tetrachloride	25.0	25.6	102	68.0-126	
Chlorobenzene	25.0	24.7	98.8	80.0-121	
Chlorodibromomethane	25.0	27.7	111	77.0-125	
Chloroethane	25.0	23.8	95.2	47.0-150	
Chloroform	25.0	21.1	84.4	73.0-120	
Chloromethane	25.0	22.2	88.8	41.0-142	
2-Chlorotoluene	25.0	22.5	90.0	76.0-123	
4-Chlorotoluene	25.0	22.5	90.0	75.0-122	
1,2-Dibromo-3-Chloropropane	25.0	26.4	106	58.0-134	
1,2-Dibromoethane	25.0	24.1	96.4	80.0-122	
Dibromomethane	25.0	25.3	101	80.0-120	
1,2-Dichlorobenzene	25.0	25.3	101	79.0-121	
1,3-Dichlorobenzene	25.0	24.3	97.2	79.0-120	
1,4-Dichlorobenzene	25.0	22.9	91.6	79.0-120	
Dichlorodifluoromethane	25.0	20.9	83.6	51.0-149	
1,1-Dichloroethane	25.0	22.7	90.8	70.0-126	
1,2-Dichloroethane	25.0	22.6	90.4	70.0-128	
1,1-Dichloroethene	25.0	23.3	93.2	71.0-124	
cis-1,2-Dichloroethene	25.0	23.0	92.0	73.0-120	
trans-1,2-Dichloroethene	25.0	22.3	89.2	73.0-120	
1,2-Dichloropropane	25.0	23.7	94.8	77.0-125	
1,1-Dichloropropene	25.0	22.2	88.8	74.0-126	
1,3-Dichloropropane	25.0	23.9	95.6	80.0-120	
cis-1,3-Dichloropropene	25.0	23.7	94.8	80.0-123	
trans-1,3-Dichloropropene	25.0	24.6	98.4	78.0-124	
trans-1,4-Dichloro-2-butene	25.0	25.5	102	33.0-144	
2,2-Dichloropropane	25.0	23.8	95.2	58.0-130	
Di-isopropyl ether	25.0	25.2	101	58.0-138	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3462245-1 10/17/19 11:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Ethylbenzene	25.0	23.9	95.6	79.0-123	
Hexachloro-1,3-butadiene	25.0	24.2	96.8	54.0-138	
2-Hexanone	125	138	110	67.0-149	
n-Hexane	25.0	23.0	92.0	57.0-133	
Iodomethane	125	125	100	33.0-147	
Isopropylbenzene	25.0	26.4	106	76.0-127	
p-Isopropyltoluene	25.0	24.4	97.6	76.0-125	
2-Butanone (MEK)	125	140	112	44.0-160	
Methylene Chloride	25.0	21.5	86.0	67.0-120	
4-Methyl-2-pentanone (MIBK)	125	144	115	68.0-142	
Methyl tert-butyl ether	25.0	24.4	97.6	68.0-125	
Naphthalene	25.0	25.6	102	54.0-135	
n-Propylbenzene	25.0	23.1	92.4	77.0-124	
Styrene	25.0	25.9	104	73.0-130	
1,1,1,2-Tetrachloroethane	25.0	27.4	110	75.0-125	
1,1,2,2-Tetrachloroethane	25.0	23.2	92.8	65.0-130	
1,1,2-Trichlorotrifluoroethane	25.0	24.0	96.0	69.0-132	
Tetrachloroethene	25.0	25.4	102	72.0-132	
Toluene	25.0	23.4	93.6	79.0-120	
1,2,3-Trichlorobenzene	25.0	26.6	106	50.0-138	
1,2,4-Trichlorobenzene	25.0	25.6	102	57.0-137	
1,1,1-Trichloroethane	25.0	24.2	96.8	73.0-124	
1,1,2-Trichloroethane	25.0	24.7	98.8	80.0-120	
Trichloroethene	25.0	24.1	96.4	78.0-124	
Trichlorofluoromethane	25.0	23.8	95.2	59.0-147	
1,2,3-Trichloropropane	25.0	23.7	94.8	73.0-130	
1,2,4-Trimethylbenzene	25.0	22.8	91.2	76.0-121	
1,2,3-Trimethylbenzene	25.0	22.7	90.8	77.0-120	
1,3,5-Trimethylbenzene	25.0	23.5	94.0	76.0-122	
Vinyl acetate	125	140	112	11.0-160	
Vinyl chloride	25.0	23.1	92.4	67.0-131	
Xylenes, Total	75.0	74.6	99.5	79.0-123	
(S) Toluene-d8			110	80.0-120	
(S) 4-Bromofluorobenzene			113	77.0-126	
(S) 1,2-Dichloroethane-d4			108	70.0-130	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

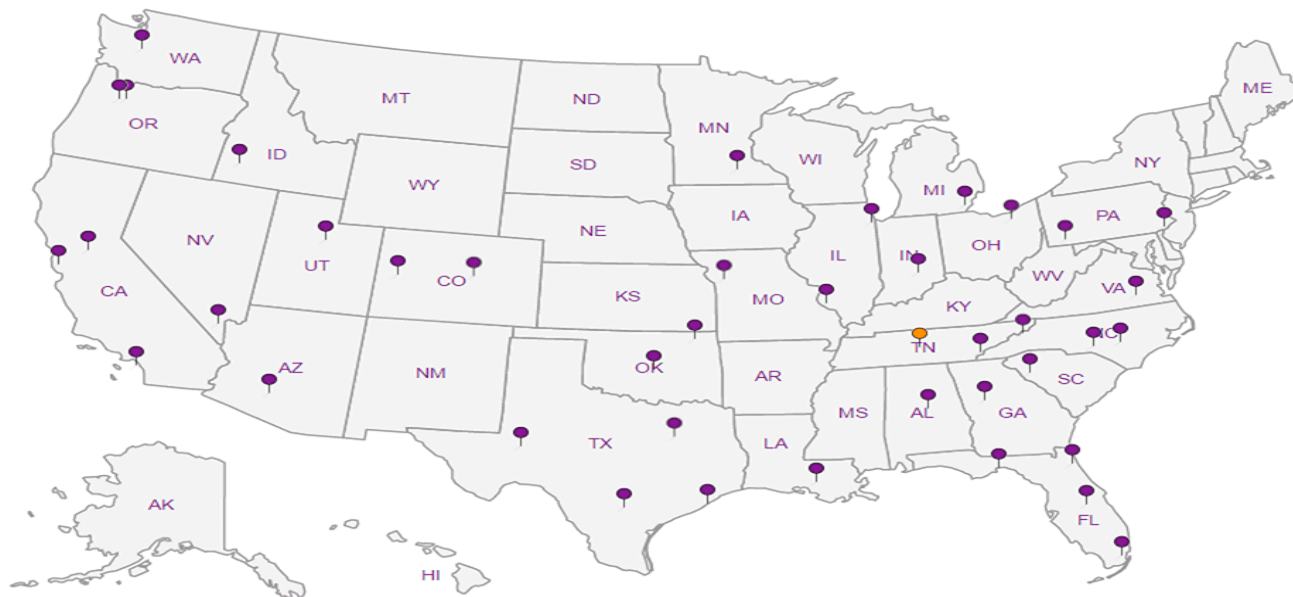
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

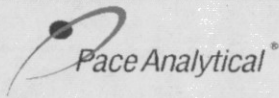
5 Sr

6 Qc

7 Gl

8 Al

9 Sc



CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

Company: PES Environmental, Inc.		Billing Information: Attn: Accounts Payable 1215 4th Ave STE 1350, Seattle, WA 98161	
Address: 1215 4th Ave STE 1350, Seattle, WA 98161		Report To: Bill Haldeman/Brian O'Neal	
Report To: Bill Haldeman/Brian O'Neal		Email To: bhdaldeman@pesenv.com; boneal@pesenv.com	
Copy To: Kim Vik, Shannon McKernan, Karsten Springstead		Site Collection Info/Address: 700 Dexter Ave N	
Customer Project Name/Number: American Linen 1413.001.02.501E		State: County/City: Time Zone Collected: WA / King/Seattle [x]PT []MT []CT []ET	
Phone: 206-529-3980	Site/Facility ID #: 1413.001.02.501E	Compliance Monitoring? [x] Yes [] No	
Email: mjoiner@pesenv.com	Purchase Order #: 1413.001.02.501E	DW PWS ID #:	
Collected By (print): Ben Hecht	Quote #: PESENVSWA-ALP	DW Location Code:	
Collected By (signature):	Turnaround Date Required:	Immediately Packed on Ice: [x] Yes [] No	
Sample Disposal: [] Dispose as appropriate [] Return [] Archive: [] Hold:	Rush: [] Same Day [] Next Day [] 2 Day [] 3 Day [] 4 Day [] 5 Day (Expedite Charges Apply)	Field Filtered (if applicable): [] Yes [] No	

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix*	Comp / Grab	Collected (or Composite Start)		Composite End		Res Cl	# of Ctns
			Date	Time	Date	Time		
MW-317-100819	GW	Grab	10/08/19					9
MW-318-100819	GW	Grab	10/08/19	1440				9
MW-319-100819	GW	Grab	10/08/19	1250				9
TripBlank-100919	AG		10/8/19	1500				1

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-In Number Here

ALL SHADED AREAS are for LAB USE ONLY

Container Preservative Type **					Lab Project Manager:				
** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other									
Analyses					Lab Profile/Line:				
NO3, SO4, Cl 125mlHDPE-NoPres	Alkalinity 125mlHDPE-NoPres	EEM RSK175LL 40mlAmb-HCl	TOC 250mlAmb-HCl or 250mlHDPE-HCl	Total Fe, Mn 6020 250mlHDPE-HNO3	VOCs 8260LLC 40mlAmb-HCl	Lab Sample Receipt Checklist: Custody Seals Present/Intact Y N NA Custody Signatures Present Y N NA Collector Signature Present Y N NA Bottles Intact Y N NA Correct Bottles Y N NA Sufficient Volume Y N NA Samples Received on Ice Y N NA VOA - Headspace Acceptable Y N NA USDA Regulated Soils Y N NA Samples in Holding Time Y N NA Residual Chlorine Present Y N NA Cl Strips: _____ Sample pH Acceptable Y N NA pH Strips: _____ Sulfide Present Y N NA Lead Acetate Strips: _____ LAB USE ONLY: Lab Sample # / Comments: 1147791			
B018									

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 1803 5774 6538

Samples received via:
FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:

Temp Blank Received: Y N NA

Therm ID#: A3

Cooler 1 Temp Upon Receipt: 1.9 °C

Cooler 1 Therm Corr. Factor: 0.7 °C

Cooler 1 Corrected Temp: 1.1 °C

Comments: A2

Relinquished by/Company: (Signature)	Date/Time: 10-8-19 @ 15:00	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time: 10/19 0830

MTJL LAB USE ONLY

Table #:

Acctnum:

Template:

Prelogin:

PM:

PB:

BAD SCREEN: <0.5 mR/hr

Trip Blank Received: Y N NA

HCL MeOH TSP Other

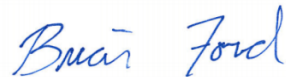
Non Conformance(s): YES / NO

Page: _____ of: _____

PES Environmental, Inc.- WA

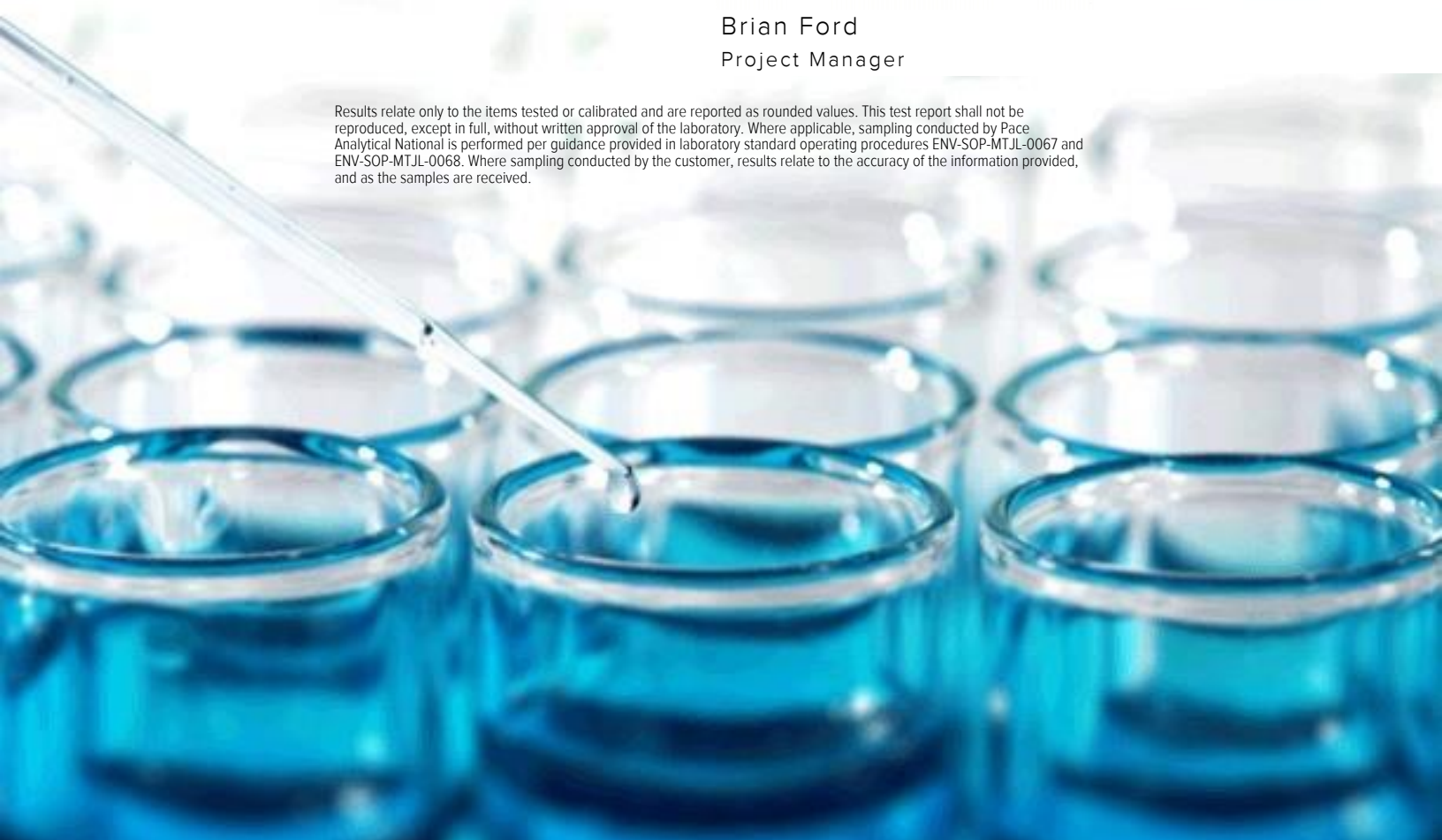
Sample Delivery Group: L1148422
Samples Received: 10/10/2019
Project Number: 1413.001.02.501E
Description: American Linen
Site: AMERICAN LINEN
Report To: Brian O'Neal/Bill Haldeman
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Entire Report Reviewed By:



Brian Ford
Project Manager

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SAMPLE SUMMARY

MW-323-100919 L1148422-01 GW

Collected by
Hannah Cohen
Collected date/time
10/09/19 11:35
Received date/time
10/10/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1363488	1	10/16/19 00:31	10/16/19 00:31	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1360711	1	10/11/19 01:18	10/11/19 01:18	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1362106	1	10/12/19 20:56	10/12/19 20:56	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1362075	1	10/15/19 09:07	10/15/19 16:50	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1362474	1	10/14/19 15:10	10/14/19 15:10	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1364657	1	10/17/19 18:46	10/17/19 18:46	BMB	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

4
Cn

MW-317-100919 L1148422-02 GW

Collected by
Hannah Cohen
Collected date/time
10/09/19 13:15
Received date/time
10/10/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1363488	1	10/16/19 00:39	10/16/19 00:39	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1360711	1	10/11/19 02:01	10/11/19 02:01	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1362106	1	10/12/19 21:11	10/12/19 21:11	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1362075	20	10/15/19 09:07	10/15/19 17:29	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1362474	1	10/14/19 15:12	10/14/19 15:12	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1362983	10	10/15/19 11:14	10/15/19 11:14	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1364657	1	10/17/19 19:06	10/17/19 19:06	BMB	Mt. Juliet, TN

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

SCL-MW101-100919 L1148422-03 GW

Collected by
Hannah Cohen
Collected date/time
10/09/19 15:50
Received date/time
10/10/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1364657	1	10/17/19 19:26	10/17/19 19:26	BMB	Mt. Juliet, TN



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	135000		2710	20000	1	10/16/2019 00:31	WG1363488

Sample Narrative:

L1148422-01 WG1363488: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	11500		51.9	1000	1	10/11/2019 01:18	WG1360711
Nitrate	1610		22.7	100	1	10/11/2019 01:18	WG1360711
Sulfate	13800		77.4	5000	1	10/11/2019 01:18	WG1360711

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	964	<u>B</u> <u>J</u>	102	1000	1	10/12/2019 20:56	WG1362106

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	273		15.0	100	1	10/15/2019 16:50	WG1362075
Manganese	160		0.250	5.00	1	10/15/2019 16:50	WG1362075

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	75.5		0.287	0.678	1	10/14/2019 15:10	WG1362474
Ethane	12.3		0.296	1.29	1	10/14/2019 15:10	WG1362474
Ethene	3.27		0.422	1.27	1	10/14/2019 15:10	WG1362474

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	2.67	<u>J</u>	1.05	25.0	1	10/17/2019 18:46	WG1364657
Acrylonitrile	U		0.873	5.00	1	10/17/2019 18:46	WG1364657
Benzene	U		0.0896	0.500	1	10/17/2019 18:46	WG1364657
Bromobenzene	U		0.133	0.500	1	10/17/2019 18:46	WG1364657
Bromodichloromethane	U		0.0800	0.500	1	10/17/2019 18:46	WG1364657
Bromochloromethane	U		0.145	0.500	1	10/17/2019 18:46	WG1364657
Bromoform	U		0.186	0.500	1	10/17/2019 18:46	WG1364657
Bromomethane	U		0.157	2.50	1	10/17/2019 18:46	WG1364657
n-Butylbenzene	U		0.143	0.500	1	10/17/2019 18:46	WG1364657
sec-Butylbenzene	U		0.134	0.500	1	10/17/2019 18:46	WG1364657
tert-Butylbenzene	U		0.183	0.500	1	10/17/2019 18:46	WG1364657
Carbon disulfide	U		0.101	0.500	1	10/17/2019 18:46	WG1364657
Carbon tetrachloride	U		0.159	0.500	1	10/17/2019 18:46	WG1364657
Chlorobenzene	U		0.140	0.500	1	10/17/2019 18:46	WG1364657
Chlorodibromomethane	U		0.128	0.500	1	10/17/2019 18:46	WG1364657
Chloroethane	U		0.141	2.50	1	10/17/2019 18:46	WG1364657
Chloroform	U		0.0860	0.500	1	10/17/2019 18:46	WG1364657
Chloromethane	U		0.153	1.25	1	10/17/2019 18:46	WG1364657
2-Chlorotoluene	U		0.111	0.500	1	10/17/2019 18:46	WG1364657
4-Chlorotoluene	U		0.0972	0.500	1	10/17/2019 18:46	WG1364657

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/17/2019 18:46	WG1364657
1,2-Dibromoethane	U		0.193	0.500	1	10/17/2019 18:46	WG1364657
Dibromomethane	U		0.117	0.500	1	10/17/2019 18:46	WG1364657
1,2-Dichlorobenzene	U		0.101	0.500	1	10/17/2019 18:46	WG1364657
1,3-Dichlorobenzene	U		0.130	0.500	1	10/17/2019 18:46	WG1364657
1,4-Dichlorobenzene	U		0.121	0.500	1	10/17/2019 18:46	WG1364657
Dichlorodifluoromethane	U		0.127	2.50	1	10/17/2019 18:46	WG1364657
1,1-Dichloroethane	U		0.114	0.500	1	10/17/2019 18:46	WG1364657
1,2-Dichloroethane	U		0.108	0.500	1	10/17/2019 18:46	WG1364657
1,1-Dichloroethene	0.276	U	0.188	0.500	1	10/17/2019 18:46	WG1364657
cis-1,2-Dichloroethene	66.5		0.0933	0.500	1	10/17/2019 18:46	WG1364657
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/17/2019 18:46	WG1364657
1,2-Dichloropropane	U		0.190	0.500	1	10/17/2019 18:46	WG1364657
1,1-Dichloropropene	U		0.128	0.500	1	10/17/2019 18:46	WG1364657
1,3-Dichloropropane	U		0.147	1.00	1	10/17/2019 18:46	WG1364657
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/17/2019 18:46	WG1364657
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/17/2019 18:46	WG1364657
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/17/2019 18:46	WG1364657
2,2-Dichloropropane	U		0.0929	0.500	1	10/17/2019 18:46	WG1364657
Di-isopropyl ether	U		0.0924	0.500	1	10/17/2019 18:46	WG1364657
Ethylbenzene	U		0.158	0.500	1	10/17/2019 18:46	WG1364657
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/17/2019 18:46	WG1364657
2-Hexanone	U		0.757	5.00	1	10/17/2019 18:46	WG1364657
n-Hexane	U		0.305	5.00	1	10/17/2019 18:46	WG1364657
Iodomethane	U		0.377	10.0	1	10/17/2019 18:46	WG1364657
Isopropylbenzene	0.308	U	0.126	0.500	1	10/17/2019 18:46	WG1364657
p-Isopropyltoluene	U		0.138	0.500	1	10/17/2019 18:46	WG1364657
2-Butanone (MEK)	U		1.28	5.00	1	10/17/2019 18:46	WG1364657
Methylene Chloride	U		1.07	2.50	1	10/17/2019 18:46	WG1364657
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/17/2019 18:46	WG1364657
Methyl tert-butyl ether	U		0.102	0.500	1	10/17/2019 18:46	WG1364657
Naphthalene	U		0.174	2.50	1	10/17/2019 18:46	WG1364657
n-Propylbenzene	U		0.162	0.500	1	10/17/2019 18:46	WG1364657
Styrene	U		0.117	0.500	1	10/17/2019 18:46	WG1364657
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/17/2019 18:46	WG1364657
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/17/2019 18:46	WG1364657
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/17/2019 18:46	WG1364657
Tetrachloroethene	U		0.199	0.500	1	10/17/2019 18:46	WG1364657
Toluene	4.97		0.412	0.500	1	10/17/2019 18:46	WG1364657
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/17/2019 18:46	WG1364657
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/17/2019 18:46	WG1364657
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/17/2019 18:46	WG1364657
1,1,2-Trichloroethane	U		0.186	0.500	1	10/17/2019 18:46	WG1364657
Trichloroethene	0.891		0.153	0.500	1	10/17/2019 18:46	WG1364657
Trichlorofluoromethane	U		0.130	2.50	1	10/17/2019 18:46	WG1364657
1,2,3-Trichloropropane	U		0.247	2.50	1	10/17/2019 18:46	WG1364657
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/17/2019 18:46	WG1364657
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/17/2019 18:46	WG1364657
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/17/2019 18:46	WG1364657
Vinyl acetate	U		0.645	5.00	1	10/17/2019 18:46	WG1364657
Vinyl chloride	13.4		0.118	0.500	1	10/17/2019 18:46	WG1364657
Xylenes, Total	U		0.316	1.50	1	10/17/2019 18:46	WG1364657
(S) Toluene-d8	113			80.0-120		10/17/2019 18:46	WG1364657
(S) 4-Bromofluorobenzene	114			77.0-126		10/17/2019 18:46	WG1364657
(S) 1,2-Dichloroethane-d4	105			70.0-130		10/17/2019 18:46	WG1364657

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	404000		2710	20000	1	10/16/2019 00:39	WG1363488

Sample Narrative:

L1148422-02 WG1363488: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	18500		51.9	1000	1	10/11/2019 02:01	WG1360711
Nitrate	U		22.7	100	1	10/11/2019 02:01	WG1360711
Sulfate	U		77.4	5000	1	10/11/2019 02:01	WG1360711

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	12000		102	1000	1	10/12/2019 21:11	WG1362106

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	12500		300	2000	20	10/15/2019 17:29	WG1362075
Manganese	3570		5.00	100	20	10/15/2019 17:29	WG1362075

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	11000		2.87	6.78	10	10/15/2019 11:14	WG1362983
Ethane	U		0.296	1.29	1	10/14/2019 15:12	WG1362474
Ethene	U		0.422	1.27	1	10/14/2019 15:12	WG1362474

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.66	J	1.05	25.0	1	10/17/2019 19:06	WG1364657
Acrylonitrile	U		0.873	5.00	1	10/17/2019 19:06	WG1364657
Benzene	U		0.0896	0.500	1	10/17/2019 19:06	WG1364657
Bromobenzene	U		0.133	0.500	1	10/17/2019 19:06	WG1364657
Bromodichloromethane	U		0.0800	0.500	1	10/17/2019 19:06	WG1364657
Bromochloromethane	U		0.145	0.500	1	10/17/2019 19:06	WG1364657
Bromoform	U		0.186	0.500	1	10/17/2019 19:06	WG1364657
Bromomethane	U		0.157	2.50	1	10/17/2019 19:06	WG1364657
n-Butylbenzene	U		0.143	0.500	1	10/17/2019 19:06	WG1364657
sec-Butylbenzene	U		0.134	0.500	1	10/17/2019 19:06	WG1364657
tert-Butylbenzene	U		0.183	0.500	1	10/17/2019 19:06	WG1364657
Carbon disulfide	U		0.101	0.500	1	10/17/2019 19:06	WG1364657
Carbon tetrachloride	U		0.159	0.500	1	10/17/2019 19:06	WG1364657
Chlorobenzene	U		0.140	0.500	1	10/17/2019 19:06	WG1364657
Chlorodibromomethane	U		0.128	0.500	1	10/17/2019 19:06	WG1364657
Chloroethane	U		0.141	2.50	1	10/17/2019 19:06	WG1364657
Chloroform	U		0.0860	0.500	1	10/17/2019 19:06	WG1364657
Chloromethane	U		0.153	1.25	1	10/17/2019 19:06	WG1364657
2-Chlorotoluene	U		0.111	0.500	1	10/17/2019 19:06	WG1364657
4-Chlorotoluene	U		0.0972	0.500	1	10/17/2019 19:06	WG1364657

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/09/19 13:15

L1148422

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/17/2019 19:06	WG1364657
1,2-Dibromoethane	U		0.193	0.500	1	10/17/2019 19:06	WG1364657
Dibromomethane	U		0.117	0.500	1	10/17/2019 19:06	WG1364657
1,2-Dichlorobenzene	U		0.101	0.500	1	10/17/2019 19:06	WG1364657
1,3-Dichlorobenzene	U		0.130	0.500	1	10/17/2019 19:06	WG1364657
1,4-Dichlorobenzene	U		0.121	0.500	1	10/17/2019 19:06	WG1364657
Dichlorodifluoromethane	U		0.127	2.50	1	10/17/2019 19:06	WG1364657
1,1-Dichloroethane	U		0.114	0.500	1	10/17/2019 19:06	WG1364657
1,2-Dichloroethane	U		0.108	0.500	1	10/17/2019 19:06	WG1364657
1,1-Dichloroethene	U		0.188	0.500	1	10/17/2019 19:06	WG1364657
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/17/2019 19:06	WG1364657
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/17/2019 19:06	WG1364657
1,2-Dichloropropane	U		0.190	0.500	1	10/17/2019 19:06	WG1364657
1,1-Dichloropropene	U		0.128	0.500	1	10/17/2019 19:06	WG1364657
1,3-Dichloropropane	U		0.147	1.00	1	10/17/2019 19:06	WG1364657
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/17/2019 19:06	WG1364657
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/17/2019 19:06	WG1364657
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/17/2019 19:06	WG1364657
2,2-Dichloropropane	U		0.0929	0.500	1	10/17/2019 19:06	WG1364657
Di-isopropyl ether	U		0.0924	0.500	1	10/17/2019 19:06	WG1364657
Ethylbenzene	U		0.158	0.500	1	10/17/2019 19:06	WG1364657
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/17/2019 19:06	WG1364657
2-Hexanone	U		0.757	5.00	1	10/17/2019 19:06	WG1364657
n-Hexane	U		0.305	5.00	1	10/17/2019 19:06	WG1364657
Iodomethane	U		0.377	10.0	1	10/17/2019 19:06	WG1364657
Isopropylbenzene	U		0.126	0.500	1	10/17/2019 19:06	WG1364657
p-Isopropyltoluene	U		0.138	0.500	1	10/17/2019 19:06	WG1364657
2-Butanone (MEK)	U		1.28	5.00	1	10/17/2019 19:06	WG1364657
Methylene Chloride	U		1.07	2.50	1	10/17/2019 19:06	WG1364657
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/17/2019 19:06	WG1364657
Methyl tert-butyl ether	U		0.102	0.500	1	10/17/2019 19:06	WG1364657
Naphthalene	U		0.174	2.50	1	10/17/2019 19:06	WG1364657
n-Propylbenzene	U		0.162	0.500	1	10/17/2019 19:06	WG1364657
Styrene	U		0.117	0.500	1	10/17/2019 19:06	WG1364657
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/17/2019 19:06	WG1364657
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/17/2019 19:06	WG1364657
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/17/2019 19:06	WG1364657
Tetrachloroethene	U		0.199	0.500	1	10/17/2019 19:06	WG1364657
Toluene	U		0.412	0.500	1	10/17/2019 19:06	WG1364657
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/17/2019 19:06	WG1364657
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/17/2019 19:06	WG1364657
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/17/2019 19:06	WG1364657
1,1,2-Trichloroethane	U		0.186	0.500	1	10/17/2019 19:06	WG1364657
Trichloroethene	U		0.153	0.500	1	10/17/2019 19:06	WG1364657
Trichlorofluoromethane	U		0.130	2.50	1	10/17/2019 19:06	WG1364657
1,2,3-Trichloropropane	U		0.247	2.50	1	10/17/2019 19:06	WG1364657
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/17/2019 19:06	WG1364657
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/17/2019 19:06	WG1364657
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/17/2019 19:06	WG1364657
Vinyl acetate	U		0.645	5.00	1	10/17/2019 19:06	WG1364657
Vinyl chloride	U		0.118	0.500	1	10/17/2019 19:06	WG1364657
Xylenes, Total	U		0.316	1.50	1	10/17/2019 19:06	WG1364657
(S) Toluene-d8	110			80.0-120		10/17/2019 19:06	WG1364657
(S) 4-Bromofluorobenzene	111			77.0-126		10/17/2019 19:06	WG1364657
(S) 1,2-Dichloroethane-d4	108			70.0-130		10/17/2019 19:06	WG1364657

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		1.05	25.0	1	10/17/2019 19:26	WG1364657
Acrylonitrile	U		0.873	5.00	1	10/17/2019 19:26	WG1364657
Benzene	11.2		0.0896	0.500	1	10/17/2019 19:26	WG1364657
Bromobenzene	U		0.133	0.500	1	10/17/2019 19:26	WG1364657
Bromodichloromethane	U		0.0800	0.500	1	10/17/2019 19:26	WG1364657
Bromochloromethane	U		0.145	0.500	1	10/17/2019 19:26	WG1364657
Bromoform	U		0.186	0.500	1	10/17/2019 19:26	WG1364657
Bromomethane	U		0.157	2.50	1	10/17/2019 19:26	WG1364657
n-Butylbenzene	8.26		0.143	0.500	1	10/17/2019 19:26	WG1364657
sec-Butylbenzene	14.4		0.134	0.500	1	10/17/2019 19:26	WG1364657
tert-Butylbenzene	0.365	J	0.183	0.500	1	10/17/2019 19:26	WG1364657
Carbon disulfide	U		0.101	0.500	1	10/17/2019 19:26	WG1364657
Carbon tetrachloride	U		0.159	0.500	1	10/17/2019 19:26	WG1364657
Chlorobenzene	U		0.140	0.500	1	10/17/2019 19:26	WG1364657
Chlorodibromomethane	U		0.128	0.500	1	10/17/2019 19:26	WG1364657
Chloroethane	U		0.141	2.50	1	10/17/2019 19:26	WG1364657
Chloroform	U		0.0860	0.500	1	10/17/2019 19:26	WG1364657
Chloromethane	U		0.153	1.25	1	10/17/2019 19:26	WG1364657
2-Chlorotoluene	U		0.111	0.500	1	10/17/2019 19:26	WG1364657
4-Chlorotoluene	U		0.0972	0.500	1	10/17/2019 19:26	WG1364657
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/17/2019 19:26	WG1364657
1,2-Dibromoethane	U		0.193	0.500	1	10/17/2019 19:26	WG1364657
Dibromomethane	U		0.117	0.500	1	10/17/2019 19:26	WG1364657
1,2-Dichlorobenzene	U		0.101	0.500	1	10/17/2019 19:26	WG1364657
1,3-Dichlorobenzene	U		0.130	0.500	1	10/17/2019 19:26	WG1364657
1,4-Dichlorobenzene	U		0.121	0.500	1	10/17/2019 19:26	WG1364657
Dichlorodifluoromethane	U		0.127	2.50	1	10/17/2019 19:26	WG1364657
1,1-Dichloroethane	U		0.114	0.500	1	10/17/2019 19:26	WG1364657
1,2-Dichloroethane	U		0.108	0.500	1	10/17/2019 19:26	WG1364657
1,1-Dichloroethene	U		0.188	0.500	1	10/17/2019 19:26	WG1364657
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/17/2019 19:26	WG1364657
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/17/2019 19:26	WG1364657
1,2-Dichloropropane	U		0.190	0.500	1	10/17/2019 19:26	WG1364657
1,1-Dichloropropene	U		0.128	0.500	1	10/17/2019 19:26	WG1364657
1,3-Dichloropropane	U		0.147	1.00	1	10/17/2019 19:26	WG1364657
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/17/2019 19:26	WG1364657
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/17/2019 19:26	WG1364657
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/17/2019 19:26	WG1364657
2,2-Dichloropropane	U		0.0929	0.500	1	10/17/2019 19:26	WG1364657
Di-isopropyl ether	U		0.0924	0.500	1	10/17/2019 19:26	WG1364657
Ethylbenzene	16.6		0.158	0.500	1	10/17/2019 19:26	WG1364657
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/17/2019 19:26	WG1364657
2-Hexanone	U		0.757	5.00	1	10/17/2019 19:26	WG1364657
n-Hexane	4.81	J	0.305	5.00	1	10/17/2019 19:26	WG1364657
Iodomethane	U		0.377	10.0	1	10/17/2019 19:26	WG1364657
Isopropylbenzene	49.9		0.126	0.500	1	10/17/2019 19:26	WG1364657
p-Isopropyltoluene	0.312	J	0.138	0.500	1	10/17/2019 19:26	WG1364657
2-Butanone (MEK)	U		1.28	5.00	1	10/17/2019 19:26	WG1364657
Methylene Chloride	U		1.07	2.50	1	10/17/2019 19:26	WG1364657
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/17/2019 19:26	WG1364657
Methyl tert-butyl ether	U		0.102	0.500	1	10/17/2019 19:26	WG1364657
Naphthalene	36.7		0.174	2.50	1	10/17/2019 19:26	WG1364657
n-Propylbenzene	152		0.162	0.500	1	10/17/2019 19:26	WG1364657
Styrene	U		0.117	0.500	1	10/17/2019 19:26	WG1364657
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/17/2019 19:26	WG1364657
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/17/2019 19:26	WG1364657

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/17/2019 19:26	WG1364657
Tetrachloroethene	U		0.199	0.500	1	10/17/2019 19:26	WG1364657
Toluene	2.39		0.412	0.500	1	10/17/2019 19:26	WG1364657
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/17/2019 19:26	WG1364657
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/17/2019 19:26	WG1364657
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/17/2019 19:26	WG1364657
1,1,2-Trichloroethane	U		0.186	0.500	1	10/17/2019 19:26	WG1364657
Trichloroethene	U		0.153	0.500	1	10/17/2019 19:26	WG1364657
Trichlorofluoromethane	U		0.130	2.50	1	10/17/2019 19:26	WG1364657
1,2,3-Trichloropropane	U		0.247	2.50	1	10/17/2019 19:26	WG1364657
1,2,4-Trimethylbenzene	4.11		0.123	0.500	1	10/17/2019 19:26	WG1364657
1,2,3-Trimethylbenzene	7.95		0.0739	0.500	1	10/17/2019 19:26	WG1364657
1,3,5-Trimethylbenzene	0.379	↓	0.124	0.500	1	10/17/2019 19:26	WG1364657
Vinyl acetate	U		0.645	5.00	1	10/17/2019 19:26	WG1364657
Vinyl chloride	U		0.118	0.500	1	10/17/2019 19:26	WG1364657
Xylenes, Total	3.77		0.316	1.50	1	10/17/2019 19:26	WG1364657
(S) Toluene-d8	107			80.0-120		10/17/2019 19:26	WG1364657
(S) 4-Bromofluorobenzene	105			77.0-126		10/17/2019 19:26	WG1364657
(S) 1,2-Dichloroethane-d4	107			70.0-130		10/17/2019 19:26	WG1364657

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3461442-1 10/16/19 00:24

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	3770	↓	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1148434-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1148434-02 10/16/19 01:21 • (DUP) R3461442-2 10/16/19 01:29

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	863000	863000	1	0.0313		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

L1148452-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1148452-02 10/16/19 03:07 • (DUP) R3461442-4 10/16/19 03:14

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	545000	548000	1	0.547		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3461442-3 10/16/19 01:37

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	101000	101	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3460200-1 10/10/19 12:59

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	78.6	↓	51.9	1000
Nitrate	U		22.7	100
Sulfate	U		77.4	5000

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1148416-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1148416-06 10/10/19 22:10 • (DUP) R3460200-3 10/10/19 22:25

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	2180	2170	1	0.299		15
Nitrate	8630	8620	1	0.0568		15
Sulfate	3920	3900	1	0.429	↓	15

L1148422-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1148422-01 10/11/19 01:18 • (DUP) R3460200-6 10/11/19 01:32

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	11500	11700	1	2.26		15
Nitrate	1610	1410	1	13.8		15
Sulfate	13800	13300	1	3.28		15

Laboratory Control Sample (LCS)

(LCS) R3460200-2 10/10/19 13:13

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Chloride	40000	38300	95.8	80.0-120	
Nitrate	8000	7960	99.5	80.0-120	
Sulfate	40000	39500	98.8	80.0-120	



L1148416-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1148416-06 10/10/19 22:10 • (MS) R3460200-4 10/10/19 22:39 • (MSD) R3460200-5 10/10/19 22:54

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	2180	52000	51300	99.7	98.2	1	80.0-120			1.41	15
Nitrate	5000	8630	13300	13200	93.6	91.8	1	80.0-120	E	E	0.651	15
Sulfate	50000	3920	53700	53000	99.5	98.1	1	80.0-120			1.37	15

L1148422-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1148422-01 10/11/19 01:18 • (MS) R3460200-7 10/11/19 01:47

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	11500	60600	98.3	1	80.0-120	
Nitrate	5000	1610	6640	101	1	80.0-120	
Sulfate	50000	13800	63200	99.0	1	80.0-120	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3461018-1 10/12/19 19:40

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	222	↓	102	1000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1148426-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1148426-02 10/12/19 21:27 • (DUP) R3461018-3 10/12/19 21:41

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	13800	13600	1	1.24		20

L1148434-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1148434-02 10/13/19 13:55 • (DUP) R3461018-6 10/13/19 14:08

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	323000	321000	10	0.497		20

Laboratory Control Sample (LCS)

(LCS) R3461018-2 10/12/19 20:10

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC (Total Organic Carbon)	75000	74500	99.4	85.0-115	

L1148430-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1148430-02 10/13/19 12:28 • (MS) R3461018-4 10/13/19 12:42 • (MSD) R3461018-5 10/13/19 12:57

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	890	51800	52100	102	102	1	80.0-120			0.481	20

L1148438-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1148438-01 10/14/19 11:53 • (MS) R3461018-9 10/14/19 12:10 • (MSD) R3461018-10 10/14/19 12:27

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	2390	53300	53500	102	102	1	80.0-120			0.449	20



Method Blank (MB)

(MB) R3461231-1 10/15/19 14:37

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Iron	U		15.0	100
Manganese	0.308	J	0.250	5.00

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3461231-2 10/15/19 14:42 • (LCSD) R3461231-3 10/15/19 14:47

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Iron	5000	5060	5190	101	104	80.0-120			2.60	20
Manganese	50.0	50.2	51.0	100	102	80.0-120			1.57	20

5 Sr

6 Qc

L1148262-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1148262-06 10/15/19 14:52 • (MS) R3461231-5 10/15/19 15:02 • (MSD) R3461231-6 10/15/19 15:07

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Iron	5000	553	5690	5750	103	104	1	75.0-125			1.06	20
Manganese	50.0	27.2	77.2	77.0	100	99.6	1	75.0-125			0.252	20

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3460900-1 10/14/19 15:05

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

L1148844-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1148844-02 10/14/19 15:17 • (DUP) R3460900-2 10/14/19 16:06

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	5560	5470	1	1.51		20
Ethane	141	138	1	2.40		20
Ethene	17.6	17.1	1	3.01		20

L1149259-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1149259-01 10/14/19 16:43 • (DUP) R3460900-3 10/14/19 16:48

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	2030	2050	1	1.19		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3460900-4 10/14/19 16:59 • (LCSD) R3460900-5 10/14/19 17:05

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	76.9	73.6	113	109	85.0-115			4.36	20
Ethane	129	134	130	104	101	85.0-115			2.75	20
Ethene	127	140	136	110	107	85.0-115			2.68	20

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3461176-1 10/15/19 11:12

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Methane	U		0.287	0.678

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1148902-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1148902-01 10/15/19 11:26 • (DUP) R3461176-2 10/15/19 13:07

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	203	210	1	3.41		20

L1148902-15 Original Sample (OS) • Duplicate (DUP)

(OS) L1148902-15 10/15/19 13:40 • (DUP) R3461176-3 10/15/19 13:45

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	3160	3120	1	1.15		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3461176-4 10/15/19 13:59 • (LCSD) R3461176-5 10/15/19 14:04

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Methane	67.8	75.3	75.9	111	112	85.0-115			0.863	20



Method Blank (MB)

(MB) R3462245-3 10/17/19 12:06

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3462245-3 10/17/19 12:06

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	113			80.0-120
(S) 4-Bromofluorobenzene	108			77.0-126
(S) 1,2-Dichloroethane-d4	102			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3462245-1 10/17/19 11:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Acetone	125	159	127	19.0-160	
Acrylonitrile	125	136	109	55.0-149	
Benzene	25.0	21.8	87.2	70.0-123	
Bromobenzene	25.0	21.6	86.4	73.0-121	
Bromodichloromethane	25.0	22.7	90.8	75.0-120	
Bromochloromethane	25.0	25.5	102	76.0-122	
Bromoform	25.0	29.0	116	68.0-132	
Bromomethane	25.0	22.7	90.8	10.0-160	
n-Butylbenzene	25.0	22.8	91.2	73.0-125	
sec-Butylbenzene	25.0	23.2	92.8	75.0-125	
tert-Butylbenzene	25.0	25.3	101	76.0-124	
Carbon disulfide	25.0	21.1	84.4	61.0-128	
Carbon tetrachloride	25.0	25.6	102	68.0-126	
Chlorobenzene	25.0	24.7	98.8	80.0-121	
Chlorodibromomethane	25.0	27.7	111	77.0-125	
Chloroethane	25.0	23.8	95.2	47.0-150	
Chloroform	25.0	21.1	84.4	73.0-120	
Chloromethane	25.0	22.2	88.8	41.0-142	
2-Chlorotoluene	25.0	22.5	90.0	76.0-123	
4-Chlorotoluene	25.0	22.5	90.0	75.0-122	
1,2-Dibromo-3-Chloropropane	25.0	26.4	106	58.0-134	
1,2-Dibromoethane	25.0	24.1	96.4	80.0-122	
Dibromomethane	25.0	25.3	101	80.0-120	
1,2-Dichlorobenzene	25.0	25.3	101	79.0-121	
1,3-Dichlorobenzene	25.0	24.3	97.2	79.0-120	
1,4-Dichlorobenzene	25.0	22.9	91.6	79.0-120	
Dichlorodifluoromethane	25.0	20.9	83.6	51.0-149	
1,1-Dichloroethane	25.0	22.7	90.8	70.0-126	
1,2-Dichloroethane	25.0	22.6	90.4	70.0-128	
1,1-Dichloroethene	25.0	23.3	93.2	71.0-124	
cis-1,2-Dichloroethene	25.0	23.0	92.0	73.0-120	
trans-1,2-Dichloroethene	25.0	22.3	89.2	73.0-120	
1,2-Dichloropropane	25.0	23.7	94.8	77.0-125	
1,1-Dichloropropene	25.0	22.2	88.8	74.0-126	
1,3-Dichloropropane	25.0	23.9	95.6	80.0-120	
cis-1,3-Dichloropropene	25.0	23.7	94.8	80.0-123	
trans-1,3-Dichloropropene	25.0	24.6	98.4	78.0-124	
trans-1,4-Dichloro-2-butene	25.0	25.5	102	33.0-144	
2,2-Dichloropropane	25.0	23.8	95.2	58.0-130	
Di-isopropyl ether	25.0	25.2	101	58.0-138	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3462245-1 10/17/19 11:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Ethylbenzene	25.0	23.9	95.6	79.0-123	
Hexachloro-1,3-butadiene	25.0	24.2	96.8	54.0-138	
2-Hexanone	125	138	110	67.0-149	
n-Hexane	25.0	23.0	92.0	57.0-133	
Iodomethane	125	125	100	33.0-147	
Isopropylbenzene	25.0	26.4	106	76.0-127	
p-Isopropyltoluene	25.0	24.4	97.6	76.0-125	
2-Butanone (MEK)	125	140	112	44.0-160	
Methylene Chloride	25.0	21.5	86.0	67.0-120	
4-Methyl-2-pentanone (MIBK)	125	144	115	68.0-142	
Methyl tert-butyl ether	25.0	24.4	97.6	68.0-125	
Naphthalene	25.0	25.6	102	54.0-135	
n-Propylbenzene	25.0	23.1	92.4	77.0-124	
Styrene	25.0	25.9	104	73.0-130	
1,1,1,2-Tetrachloroethane	25.0	27.4	110	75.0-125	
1,1,2,2-Tetrachloroethane	25.0	23.2	92.8	65.0-130	
1,1,2-Trichlorotrifluoroethane	25.0	24.0	96.0	69.0-132	
Tetrachloroethene	25.0	25.4	102	72.0-132	
Toluene	25.0	23.4	93.6	79.0-120	
1,2,3-Trichlorobenzene	25.0	26.6	106	50.0-138	
1,2,4-Trichlorobenzene	25.0	25.6	102	57.0-137	
1,1,1-Trichloroethane	25.0	24.2	96.8	73.0-124	
1,1,2-Trichloroethane	25.0	24.7	98.8	80.0-120	
Trichloroethene	25.0	24.1	96.4	78.0-124	
Trichlorofluoromethane	25.0	23.8	95.2	59.0-147	
1,2,3-Trichloropropane	25.0	23.7	94.8	73.0-130	
1,2,4-Trimethylbenzene	25.0	22.8	91.2	76.0-121	
1,2,3-Trimethylbenzene	25.0	22.7	90.8	77.0-120	
1,3,5-Trimethylbenzene	25.0	23.5	94.0	76.0-122	
Vinyl acetate	125	140	112	11.0-160	
Vinyl chloride	25.0	23.1	92.4	67.0-131	
Xylenes, Total	75.0	74.6	99.5	79.0-123	
(S) Toluene-d8			110	80.0-120	
(S) 4-Bromofluorobenzene			113	77.0-126	
(S) 1,2-Dichloroethane-d4			108	70.0-130	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 GI

8 AI

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

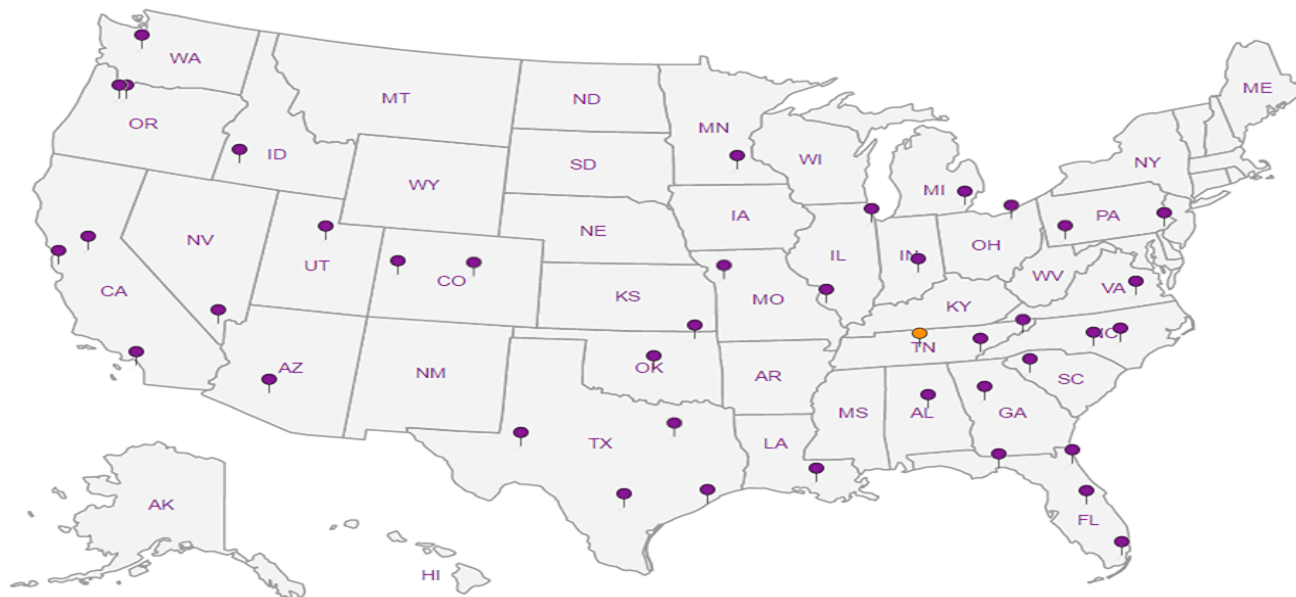
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

PES-Seattle
 Billing Information: PES-Seattle
 Chain of Custody Page 1 of 1
 Analysis / Container / Preservative
 Pres Chk



Report to: Bill Haldeman/Brian O'neal
 Email To: on file

12065 Lebanon Rd
 Mount Juliet, TN 37122
 Phone: 615-758-5858
 Phone: 800-767-5859
 Fax: 615-758-5859



Project Description: American Linen
 City/State: Seattle, WA
 Collected:

L# 1148422
F035

Phone: on file
 Client Project #: 1413.0d.02.501E
 Lab Project #: PESENVSWA-ALP

Acctnum: PESENVSWA
 Template:
 Prelogin:
 TSR: Brian Ford
 PB:

Collected by (print): Hannah Cohen
 Site/Facility ID #: American Linen
 P.O. #

Collected by (signature): Hannah Cohen
 Rush? (Lab MUST Be Notified)
 ___ Same Day ___ Five Day
 ___ Next Day ___ 5 Day (Rad Only)
 ___ Two Day ___ 10 Day (Rad Only)
 ___ Three Day
 Quote #
 Date Results Needed
 Immediately
 Packed on Ice N ___ Y

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	**NO3,SO4,Chloride**48 hour hold	NWTPHGX	VOCs (V8260LLC)	Total Fe Mn 6020	TOC	Alkalinity	EEM (RSK175LL)
MW-323-100919	Grab	GW	75	10/9/19	1135		X	X	X	X	X	X	X
MW-317-100919		GW	40		1315		X	X	X	X	X	X	X
SCL-MW101-100919		GW	12		1550			X					
		GW											
		GW											
		GW											
		GW											
		GW											
		GW											
		GW											

Shipped Via:
 Remarks
 Sample # (lab only)

* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:
 pH _____ Temp _____
 Flow _____ Other _____

Sample Receipt Checklist
 COC Seal Present/Intact: NP Y N
 COC Signed/Accurate: Y N
 Bottles arrive intact: Y N
 Correct bottles used: Y N
 Sufficient volume sent: Y N
 If Applicable
 VOA Zero Headspace: Y N
 Preservation Correct/Checked: Y N
RAD SCREEN: <0.5 mP/nr

Samples returned via:
 ___ UPS ___ FedEx ___ Courier

Tracking # 1203 57146540

Relinquished by: (Signature) Hannah Cohen
 Date: 10/9/19 Time: 1610
 Received by: (Signature) Trip Blank Received: Yes/No
 HCL/MeOH TBR

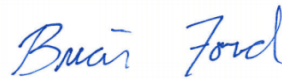
Relinquished by: (Signature)
 Date: Time:
 Received by: (Signature) Temp: 30.4 °C Bottles Received: 21
 5.35-0.53

Relinquished by: (Signature)
 Date: Time:
 Received for lab by: (Signature) Date: 10/10/19 Time: 8:30
 Hold: Condition: NCF / OK

PES Environmental, Inc.- WA

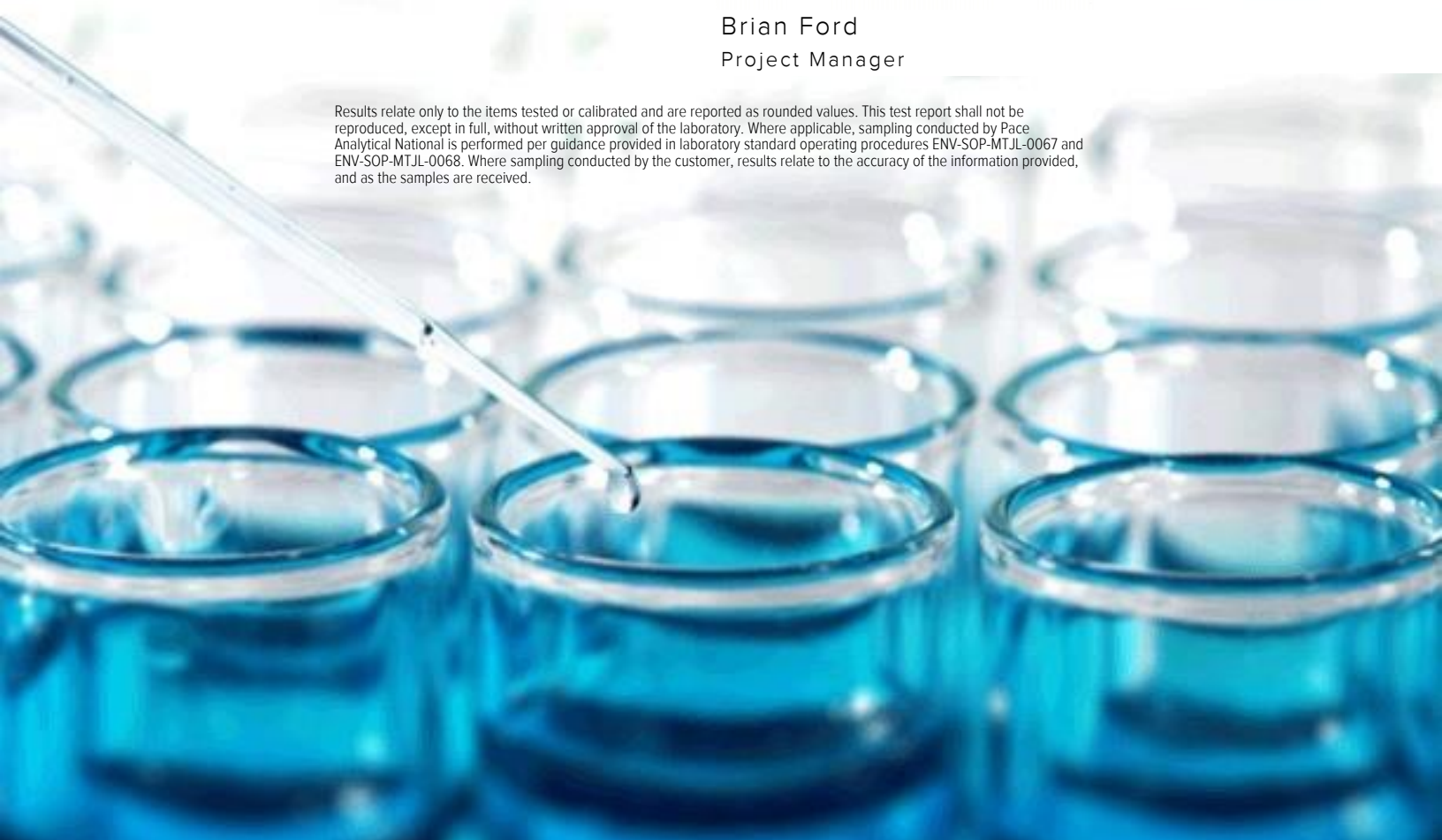
Sample Delivery Group: L1148900
Samples Received: 10/11/2019
Project Number: 1413.001.02.501E
Description: American Linen
Site: AMERICAN LINEN
Report To: Brian O'Neal/Bill Haldeman
1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





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SAMPLE SUMMARY



MW-314-101019 L1148900-01 GW

Collected by Ben Hecht
 Collected date/time 10/10/19 08:35
 Received date/time 10/11/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1364209	1	10/18/19 00:08	10/18/19 00:08	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1361340	1	10/11/19 19:57	10/11/19 19:57	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1361340	10	10/12/19 10:42	10/12/19 10:42	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1362294	1	10/14/19 02:49	10/14/19 02:49	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1363727	10	10/16/19 10:52	10/17/19 00:17	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1362474	1	10/14/19 16:16	10/14/19 16:16	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1365855	1	10/19/19 18:28	10/19/19 18:28	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366289	10	10/21/19 14:12	10/21/19 14:12	ACG	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

SCL-MW105-101019 L1148900-02 GW

Collected by Ben Hecht
 Collected date/time 10/10/19 09:50
 Received date/time 10/11/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1365855	1	10/19/19 18:48	10/19/19 18:48	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366289	10	10/21/19 14:32	10/21/19 14:32	ACG	Mt. Juliet, TN

MW-8-101019 L1148900-03 GW

Collected by Ben Hecht
 Collected date/time 10/10/19 10:30
 Received date/time 10/11/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366370	1	10/20/19 23:18	10/20/19 23:18	JHH	Mt. Juliet, TN

MW-311-101019 L1148900-04 GW

Collected by Ben Hecht
 Collected date/time 10/10/19 11:20
 Received date/time 10/11/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1364209	1	10/18/19 00:15	10/18/19 00:15	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1361340	1	10/11/19 20:14	10/11/19 20:14	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1362294	1	10/14/19 03:05	10/14/19 03:05	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1363727	1	10/16/19 10:52	10/16/19 22:45	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1363727	5	10/16/19 10:52	10/17/19 00:21	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1362474	1	10/14/19 16:19	10/14/19 16:19	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1365855	1	10/19/19 19:29	10/19/19 19:29	JAH	Mt. Juliet, TN

SCS-2-101019 L1148900-05 GW

Collected by Ben Hecht
 Collected date/time 10/10/19 11:35
 Received date/time 10/11/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1365855	1	10/19/19 19:49	10/19/19 19:49	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366289	10	10/21/19 14:53	10/21/19 14:53	ACG	Mt. Juliet, TN

MW-108-101019 L1148900-06 GW

Collected by Ben Hecht
 Collected date/time 10/10/19 12:45
 Received date/time 10/11/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1364209	1	10/18/19 00:22	10/18/19 00:22	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1361340	1	10/11/19 21:07	10/11/19 21:07	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1362294	1	10/14/19 04:05	10/14/19 04:05	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1363727	10	10/16/19 10:52	10/17/19 00:24	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1362474	1	10/14/19 16:23	10/14/19 16:23	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1365855	1	10/19/19 20:09	10/19/19 20:09	JAH	Mt. Juliet, TN

SAMPLE SUMMARY



MW-108-101019 L1148900-06 GW

Collected by
Ben Hecht
Collected date/time
10/10/19 12:45
Received date/time
10/11/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366289	25	10/21/19 15:13	10/21/19 15:13	ACG	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

MW-313-101019 L1148900-07 GW

Collected by
Ben Hecht
Collected date/time
10/10/19 14:15
Received date/time
10/11/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1364209	1	10/18/19 00:28	10/18/19 00:28	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1361340	1	10/11/19 21:42	10/11/19 21:42	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1362294	1	10/14/19 04:27	10/14/19 04:27	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1363727	1	10/16/19 10:52	10/16/19 23:05	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1363727	10	10/16/19 10:52	10/17/19 00:48	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1362474	1	10/14/19 16:28	10/14/19 16:28	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1365855	1	10/19/19 20:30	10/19/19 20:30	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366289	1	10/21/19 15:33	10/21/19 15:33	ACG	Mt. Juliet, TN

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

MW-310-101019 L1148900-08 GW

Collected by
Ben Hecht
Collected date/time
10/10/19 13:45
Received date/time
10/11/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1364211	1	10/17/19 16:38	10/17/19 16:38	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1361340	1	10/11/19 22:00	10/11/19 22:00	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1362294	1	10/14/19 04:49	10/14/19 04:49	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1363727	20	10/16/19 10:52	10/17/19 00:37	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1362474	1	10/14/19 16:32	10/14/19 16:32	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1365855	1	10/19/19 20:50	10/19/19 20:50	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366289	1	10/21/19 16:18	10/21/19 16:18	BMB	Mt. Juliet, TN

9
Sc

MW-119-101019 L1148900-09 GW

Collected by
Ben Hecht
Collected date/time
10/10/19 15:35
Received date/time
10/11/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1364211	1	10/17/19 16:44	10/17/19 16:44	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1361340	1	10/11/19 22:18	10/11/19 22:18	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1362294	1	10/14/19 05:09	10/14/19 05:09	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1363727	20	10/16/19 10:52	10/17/19 00:40	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1362474	1	10/14/19 16:35	10/14/19 16:35	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1365855	1	10/19/19 21:10	10/19/19 21:10	JAH	Mt. Juliet, TN

TRIP-101019 L1148900-10 GW

Collected by
Ben Hecht
Collected date/time
10/10/19 16:00
Received date/time
10/11/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1365855	1	10/19/19 16:05	10/19/19 16:05	JAH	Mt. Juliet, TN



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	253000		2710	20000	1	10/18/2019 00:08	WG1364209

Sample Narrative:

L1148900-01 WG1364209: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	24400		51.9	1000	1	10/11/2019 19:57	WG1361340
Nitrate	U		22.7	100	1	10/11/2019 19:57	WG1361340
Sulfate	264000		774	50000	10	10/12/2019 10:42	WG1361340

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	2840	<u>B</u>	102	1000	1	10/14/2019 02:49	WG1362294

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	2420		150	1000	10	10/17/2019 00:17	WG1363727
Manganese	1110		2.50	50.0	10	10/17/2019 00:17	WG1363727

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	377		0.287	0.678	1	10/14/2019 16:16	WG1362474
Ethane	18.6		0.296	1.29	1	10/14/2019 16:16	WG1362474
Ethene	U		0.422	1.27	1	10/14/2019 16:16	WG1362474

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		1.05	25.0	1	10/19/2019 18:28	WG1365855
Acrylonitrile	U		0.873	5.00	1	10/19/2019 18:28	WG1365855
Benzene	U		0.0896	0.500	1	10/19/2019 18:28	WG1365855
Bromobenzene	U		0.133	0.500	1	10/19/2019 18:28	WG1365855
Bromodichloromethane	U		0.0800	0.500	1	10/19/2019 18:28	WG1365855
Bromochloromethane	U		0.145	0.500	1	10/19/2019 18:28	WG1365855
Bromoform	U		0.186	0.500	1	10/19/2019 18:28	WG1365855
Bromomethane	U		0.157	2.50	1	10/19/2019 18:28	WG1365855
n-Butylbenzene	U		0.143	0.500	1	10/19/2019 18:28	WG1365855
sec-Butylbenzene	U		0.134	0.500	1	10/19/2019 18:28	WG1365855
tert-Butylbenzene	U		0.183	0.500	1	10/19/2019 18:28	WG1365855
Carbon disulfide	U		0.101	0.500	1	10/19/2019 18:28	WG1365855
Carbon tetrachloride	U		0.159	0.500	1	10/19/2019 18:28	WG1365855
Chlorobenzene	U		0.140	0.500	1	10/19/2019 18:28	WG1365855
Chlorodibromomethane	U		0.128	0.500	1	10/19/2019 18:28	WG1365855
Chloroethane	U		0.141	2.50	1	10/19/2019 18:28	WG1365855
Chloroform	U		0.0860	0.500	1	10/19/2019 18:28	WG1365855
Chloromethane	U		0.153	1.25	1	10/19/2019 18:28	WG1365855
2-Chlorotoluene	U		0.111	0.500	1	10/19/2019 18:28	WG1365855
4-Chlorotoluene	U		0.0972	0.500	1	10/19/2019 18:28	WG1365855

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/19/2019 18:28	WG1365855
1,2-Dibromoethane	U		0.193	0.500	1	10/19/2019 18:28	WG1365855
Dibromomethane	U		0.117	0.500	1	10/19/2019 18:28	WG1365855
1,2-Dichlorobenzene	U		0.101	0.500	1	10/19/2019 18:28	WG1365855
1,3-Dichlorobenzene	U		0.130	0.500	1	10/19/2019 18:28	WG1365855
1,4-Dichlorobenzene	U		0.121	0.500	1	10/19/2019 18:28	WG1365855
Dichlorodifluoromethane	U		0.127	2.50	1	10/19/2019 18:28	WG1365855
1,1-Dichloroethane	U		0.114	0.500	1	10/19/2019 18:28	WG1365855
1,2-Dichloroethane	U		0.108	0.500	1	10/19/2019 18:28	WG1365855
1,1-Dichloroethene	3.21		0.188	0.500	1	10/19/2019 18:28	WG1365855
cis-1,2-Dichloroethene	491		0.933	5.00	10	10/21/2019 14:12	WG1366289
trans-1,2-Dichloroethene	1.63		0.152	0.500	1	10/19/2019 18:28	WG1365855
1,2-Dichloropropane	U		0.190	0.500	1	10/19/2019 18:28	WG1365855
1,1-Dichloropropene	U		0.128	0.500	1	10/19/2019 18:28	WG1365855
1,3-Dichloropropane	U		0.147	1.00	1	10/19/2019 18:28	WG1365855
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/19/2019 18:28	WG1365855
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/19/2019 18:28	WG1365855
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/19/2019 18:28	WG1365855
2,2-Dichloropropane	U		0.0929	0.500	1	10/19/2019 18:28	WG1365855
Di-isopropyl ether	U		0.0924	0.500	1	10/19/2019 18:28	WG1365855
Ethylbenzene	U		0.158	0.500	1	10/19/2019 18:28	WG1365855
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/19/2019 18:28	WG1365855
2-Hexanone	U		0.757	5.00	1	10/19/2019 18:28	WG1365855
n-Hexane	U		0.305	5.00	1	10/19/2019 18:28	WG1365855
Iodomethane	U		0.377	10.0	1	10/19/2019 18:28	WG1365855
Isopropylbenzene	U		0.126	0.500	1	10/19/2019 18:28	WG1365855
p-Isopropyltoluene	U		0.138	0.500	1	10/19/2019 18:28	WG1365855
2-Butanone (MEK)	U		1.28	5.00	1	10/19/2019 18:28	WG1365855
Methylene Chloride	U		1.07	2.50	1	10/19/2019 18:28	WG1365855
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/19/2019 18:28	WG1365855
Methyl tert-butyl ether	U		0.102	0.500	1	10/19/2019 18:28	WG1365855
Naphthalene	U		0.174	2.50	1	10/19/2019 18:28	WG1365855
n-Propylbenzene	U		0.162	0.500	1	10/19/2019 18:28	WG1365855
Styrene	U		0.117	0.500	1	10/19/2019 18:28	WG1365855
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/19/2019 18:28	WG1365855
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/19/2019 18:28	WG1365855
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/19/2019 18:28	WG1365855
Tetrachloroethene	26.1		0.199	0.500	1	10/19/2019 18:28	WG1365855
Toluene	U		0.412	0.500	1	10/19/2019 18:28	WG1365855
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/19/2019 18:28	WG1365855
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/19/2019 18:28	WG1365855
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/19/2019 18:28	WG1365855
1,1,2-Trichloroethane	U		0.186	0.500	1	10/19/2019 18:28	WG1365855
Trichloroethene	106		0.153	0.500	1	10/19/2019 18:28	WG1365855
Trichlorofluoromethane	U		0.130	2.50	1	10/19/2019 18:28	WG1365855
1,2,3-Trichloropropane	U		0.247	2.50	1	10/19/2019 18:28	WG1365855
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/19/2019 18:28	WG1365855
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/19/2019 18:28	WG1365855
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/19/2019 18:28	WG1365855
Vinyl acetate	U		0.645	5.00	1	10/19/2019 18:28	WG1365855
Vinyl chloride	43.6		0.118	0.500	1	10/19/2019 18:28	WG1365855
Xylenes, Total	U		0.316	1.50	1	10/19/2019 18:28	WG1365855
(S) Toluene-d8	117			80.0-120		10/19/2019 18:28	WG1365855
(S) Toluene-d8	115			80.0-120		10/21/2019 14:12	WG1366289
(S) 4-Bromofluorobenzene	111			77.0-126		10/19/2019 18:28	WG1365855
(S) 4-Bromofluorobenzene	92.4			77.0-126		10/21/2019 14:12	WG1366289

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	99.2			70.0-130		10/19/2019 18:28	WG1365855
(S) 1,2-Dichloroethane-d4	95.6			70.0-130		10/21/2019 14:12	WG1366289

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		1.05	25.0	1	10/19/2019 18:48	WG1365855
Acrylonitrile	U		0.873	5.00	1	10/19/2019 18:48	WG1365855
Benzene	133		0.0896	0.500	1	10/19/2019 18:48	WG1365855
Bromobenzene	U		0.133	0.500	1	10/19/2019 18:48	WG1365855
Bromodichloromethane	U		0.0800	0.500	1	10/19/2019 18:48	WG1365855
Bromochloromethane	U		0.145	0.500	1	10/19/2019 18:48	WG1365855
Bromoform	U		0.186	0.500	1	10/19/2019 18:48	WG1365855
Bromomethane	U		0.157	2.50	1	10/19/2019 18:48	WG1365855
n-Butylbenzene	U		0.143	0.500	1	10/19/2019 18:48	WG1365855
sec-Butylbenzene	8.08		0.134	0.500	1	10/19/2019 18:48	WG1365855
tert-Butylbenzene	0.260	J	0.183	0.500	1	10/19/2019 18:48	WG1365855
Carbon disulfide	U		0.101	0.500	1	10/19/2019 18:48	WG1365855
Carbon tetrachloride	U		0.159	0.500	1	10/19/2019 18:48	WG1365855
Chlorobenzene	U		0.140	0.500	1	10/19/2019 18:48	WG1365855
Chlorodibromomethane	U		0.128	0.500	1	10/19/2019 18:48	WG1365855
Chloroethane	U		0.141	2.50	1	10/19/2019 18:48	WG1365855
Chloroform	U		0.0860	0.500	1	10/19/2019 18:48	WG1365855
Chloromethane	U		0.153	1.25	1	10/19/2019 18:48	WG1365855
2-Chlorotoluene	U		0.111	0.500	1	10/19/2019 18:48	WG1365855
4-Chlorotoluene	U		0.0972	0.500	1	10/19/2019 18:48	WG1365855
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/19/2019 18:48	WG1365855
1,2-Dibromoethane	U		0.193	0.500	1	10/19/2019 18:48	WG1365855
Dibromomethane	U		0.117	0.500	1	10/19/2019 18:48	WG1365855
1,2-Dichlorobenzene	U		0.101	0.500	1	10/19/2019 18:48	WG1365855
1,3-Dichlorobenzene	U		0.130	0.500	1	10/19/2019 18:48	WG1365855
1,4-Dichlorobenzene	U		0.121	0.500	1	10/19/2019 18:48	WG1365855
Dichlorodifluoromethane	U		0.127	2.50	1	10/19/2019 18:48	WG1365855
1,1-Dichloroethane	U		0.114	0.500	1	10/19/2019 18:48	WG1365855
1,2-Dichloroethane	U		0.108	0.500	1	10/19/2019 18:48	WG1365855
1,1-Dichloroethene	U		0.188	0.500	1	10/19/2019 18:48	WG1365855
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/19/2019 18:48	WG1365855
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/19/2019 18:48	WG1365855
1,2-Dichloropropane	U		0.190	0.500	1	10/19/2019 18:48	WG1365855
1,1-Dichloropropene	U		0.128	0.500	1	10/19/2019 18:48	WG1365855
1,3-Dichloropropane	U		0.147	1.00	1	10/19/2019 18:48	WG1365855
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/19/2019 18:48	WG1365855
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/19/2019 18:48	WG1365855
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/19/2019 18:48	WG1365855
2,2-Dichloropropane	U		0.0929	0.500	1	10/19/2019 18:48	WG1365855
Di-isopropyl ether	U		0.0924	0.500	1	10/19/2019 18:48	WG1365855
Ethylbenzene	41.0		0.158	0.500	1	10/19/2019 18:48	WG1365855
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/19/2019 18:48	WG1365855
2-Hexanone	U		0.757	5.00	1	10/19/2019 18:48	WG1365855
n-Hexane	55.0		0.305	5.00	1	10/19/2019 18:48	WG1365855
Iodomethane	U		0.377	10.0	1	10/19/2019 18:48	WG1365855
Isopropylbenzene	149		0.126	0.500	1	10/19/2019 18:48	WG1365855
p-Isopropyltoluene	1.96		0.138	0.500	1	10/19/2019 18:48	WG1365855
2-Butanone (MEK)	U		1.28	5.00	1	10/19/2019 18:48	WG1365855
Methylene Chloride	U		1.07	2.50	1	10/19/2019 18:48	WG1365855
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/19/2019 18:48	WG1365855
Methyl tert-butyl ether	U		0.102	0.500	1	10/19/2019 18:48	WG1365855
Naphthalene	4.44		0.174	2.50	1	10/19/2019 18:48	WG1365855
n-Propylbenzene	359	JO	1.62	5.00	10	10/21/2019 14:32	WG1366289
Styrene	U		0.117	0.500	1	10/19/2019 18:48	WG1365855
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/19/2019 18:48	WG1365855
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/19/2019 18:48	WG1365855

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Collected date/time: 10/10/19 09:50

L1148900

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/19/2019 18:48	WG1365855
Tetrachloroethene	U		0.199	0.500	1	10/19/2019 18:48	WG1365855
Toluene	15.5		0.412	0.500	1	10/19/2019 18:48	WG1365855
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/19/2019 18:48	WG1365855
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/19/2019 18:48	WG1365855
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/19/2019 18:48	WG1365855
1,1,2-Trichloroethane	U		0.186	0.500	1	10/19/2019 18:48	WG1365855
Trichloroethene	U		0.153	0.500	1	10/19/2019 18:48	WG1365855
Trichlorofluoromethane	U		0.130	2.50	1	10/19/2019 18:48	WG1365855
1,2,3-Trichloropropane	U		0.247	2.50	1	10/19/2019 18:48	WG1365855
1,2,4-Trimethylbenzene	0.510		0.123	0.500	1	10/19/2019 18:48	WG1365855
1,2,3-Trimethylbenzene	14.4		0.0739	0.500	1	10/19/2019 18:48	WG1365855
1,3,5-Trimethylbenzene	5.00		0.124	0.500	1	10/19/2019 18:48	WG1365855
Vinyl acetate	U		0.645	5.00	1	10/19/2019 18:48	WG1365855
Vinyl chloride	U		0.118	0.500	1	10/19/2019 18:48	WG1365855
Xylenes, Total	34.6		0.316	1.50	1	10/19/2019 18:48	WG1365855
(S) Toluene-d8	105			80.0-120		10/19/2019 18:48	WG1365855
(S) Toluene-d8	112			80.0-120		10/21/2019 14:32	WG1366289
(S) 4-Bromofluorobenzene	105			77.0-126		10/19/2019 18:48	WG1365855
(S) 4-Bromofluorobenzene	94.5			77.0-126		10/21/2019 14:32	WG1366289
(S) 1,2-Dichloroethane-d4	106			70.0-130		10/19/2019 18:48	WG1365855
(S) 1,2-Dichloroethane-d4	97.0			70.0-130		10/21/2019 14:32	WG1366289

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U	<u>JO</u>	1.05	25.0	1	10/20/2019 23:18	WG1366370
Acrylonitrile	U		0.873	5.00	1	10/20/2019 23:18	WG1366370
Benzene	U		0.0896	0.500	1	10/20/2019 23:18	WG1366370
Bromobenzene	U		0.133	0.500	1	10/20/2019 23:18	WG1366370
Bromodichloromethane	U		0.0800	0.500	1	10/20/2019 23:18	WG1366370
Bromochloromethane	U		0.145	0.500	1	10/20/2019 23:18	WG1366370
Bromoform	U		0.186	0.500	1	10/20/2019 23:18	WG1366370
Bromomethane	U		0.157	2.50	1	10/20/2019 23:18	WG1366370
n-Butylbenzene	U		0.143	0.500	1	10/20/2019 23:18	WG1366370
sec-Butylbenzene	U		0.134	0.500	1	10/20/2019 23:18	WG1366370
tert-Butylbenzene	U		0.183	0.500	1	10/20/2019 23:18	WG1366370
Carbon disulfide	U		0.101	0.500	1	10/20/2019 23:18	WG1366370
Carbon tetrachloride	U		0.159	0.500	1	10/20/2019 23:18	WG1366370
Chlorobenzene	U		0.140	0.500	1	10/20/2019 23:18	WG1366370
Chlorodibromomethane	U		0.128	0.500	1	10/20/2019 23:18	WG1366370
Chloroethane	U		0.141	2.50	1	10/20/2019 23:18	WG1366370
Chloroform	U		0.0860	0.500	1	10/20/2019 23:18	WG1366370
Chloromethane	U		0.153	1.25	1	10/20/2019 23:18	WG1366370
2-Chlorotoluene	U		0.111	0.500	1	10/20/2019 23:18	WG1366370
4-Chlorotoluene	U		0.0972	0.500	1	10/20/2019 23:18	WG1366370
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/20/2019 23:18	WG1366370
1,2-Dibromoethane	U		0.193	0.500	1	10/20/2019 23:18	WG1366370
Dibromomethane	U		0.117	0.500	1	10/20/2019 23:18	WG1366370
1,2-Dichlorobenzene	U		0.101	0.500	1	10/20/2019 23:18	WG1366370
1,3-Dichlorobenzene	U		0.130	0.500	1	10/20/2019 23:18	WG1366370
1,4-Dichlorobenzene	U		0.121	0.500	1	10/20/2019 23:18	WG1366370
Dichlorodifluoromethane	U		0.127	2.50	1	10/20/2019 23:18	WG1366370
1,1-Dichloroethane	U		0.114	0.500	1	10/20/2019 23:18	WG1366370
1,2-Dichloroethane	U		0.108	0.500	1	10/20/2019 23:18	WG1366370
1,1-Dichloroethene	U		0.188	0.500	1	10/20/2019 23:18	WG1366370
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/20/2019 23:18	WG1366370
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/20/2019 23:18	WG1366370
1,2-Dichloropropane	0.253	<u>J</u>	0.190	0.500	1	10/20/2019 23:18	WG1366370
1,1-Dichloropropene	U		0.128	0.500	1	10/20/2019 23:18	WG1366370
1,3-Dichloropropane	U		0.147	1.00	1	10/20/2019 23:18	WG1366370
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/20/2019 23:18	WG1366370
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/20/2019 23:18	WG1366370
trans-1,4-Dichloro-2-butene	U	<u>JO</u>	0.257	5.00	1	10/20/2019 23:18	WG1366370
2,2-Dichloropropane	U		0.0929	0.500	1	10/20/2019 23:18	WG1366370
Di-isopropyl ether	U		0.0924	0.500	1	10/20/2019 23:18	WG1366370
Ethylbenzene	U		0.158	0.500	1	10/20/2019 23:18	WG1366370
Hexachloro-1,3-butadiene	U	<u>J4</u>	0.157	1.00	1	10/20/2019 23:18	WG1366370
2-Hexanone	U		0.757	5.00	1	10/20/2019 23:18	WG1366370
n-Hexane	U		0.305	5.00	1	10/20/2019 23:18	WG1366370
Iodomethane	U	<u>JO</u>	0.377	10.0	1	10/20/2019 23:18	WG1366370
Isopropylbenzene	U		0.126	0.500	1	10/20/2019 23:18	WG1366370
p-Isopropyltoluene	U		0.138	0.500	1	10/20/2019 23:18	WG1366370
2-Butanone (MEK)	U	<u>JO</u>	1.28	5.00	1	10/20/2019 23:18	WG1366370
Methylene Chloride	U		1.07	2.50	1	10/20/2019 23:18	WG1366370
4-Methyl-2-pentanone (MIBK)	U	<u>JO</u>	0.823	5.00	1	10/20/2019 23:18	WG1366370
Methyl tert-butyl ether	U		0.102	0.500	1	10/20/2019 23:18	WG1366370
Naphthalene	0.886	<u>B J JO</u>	0.174	2.50	1	10/20/2019 23:18	WG1366370
n-Propylbenzene	U		0.162	0.500	1	10/20/2019 23:18	WG1366370
Styrene	U		0.117	0.500	1	10/20/2019 23:18	WG1366370
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/20/2019 23:18	WG1366370
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/20/2019 23:18	WG1366370

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/20/2019 23:18	WG1366370
Tetrachloroethene	U		0.199	0.500	1	10/20/2019 23:18	WG1366370
Toluene	U		0.412	0.500	1	10/20/2019 23:18	WG1366370
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/20/2019 23:18	WG1366370
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/20/2019 23:18	WG1366370
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/20/2019 23:18	WG1366370
1,1,2-Trichloroethane	U		0.186	0.500	1	10/20/2019 23:18	WG1366370
Trichloroethene	0.167	U	0.153	0.500	1	10/20/2019 23:18	WG1366370
Trichlorofluoromethane	U		0.130	2.50	1	10/20/2019 23:18	WG1366370
1,2,3-Trichloropropane	U		0.247	2.50	1	10/20/2019 23:18	WG1366370
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/20/2019 23:18	WG1366370
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/20/2019 23:18	WG1366370
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/20/2019 23:18	WG1366370
Vinyl acetate	U		0.645	5.00	1	10/20/2019 23:18	WG1366370
Vinyl chloride	U		0.118	0.500	1	10/20/2019 23:18	WG1366370
Xylenes, Total	U		0.316	1.50	1	10/20/2019 23:18	WG1366370
(S) Toluene-d8	95.6			80.0-120		10/20/2019 23:18	WG1366370
(S) 4-Bromofluorobenzene	89.6			77.0-126		10/20/2019 23:18	WG1366370
(S) 1,2-Dichloroethane-d4	81.3			70.0-130		10/20/2019 23:18	WG1366370

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	394000		2710	20000	1	10/18/2019 00:15	WG1364209

Sample Narrative:

L1148900-04 WG1364209: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	45900		51.9	1000	1	10/11/2019 20:14	WG1361340
Nitrate	U		22.7	100	1	10/11/2019 20:14	WG1361340
Sulfate	35000		77.4	5000	1	10/11/2019 20:14	WG1361340

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	5310	<u>B</u>	102	1000	1	10/14/2019 03:05	WG1362294

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	349		15.0	100	1	10/16/2019 22:45	WG1363727
Manganese	738		1.25	25.0	5	10/17/2019 00:21	WG1363727

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	856		0.287	0.678	1	10/14/2019 16:19	WG1362474
Ethane	40.8		0.296	1.29	1	10/14/2019 16:19	WG1362474
Ethene	10.4		0.422	1.27	1	10/14/2019 16:19	WG1362474

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	3.51	<u>J</u>	1.05	25.0	1	10/19/2019 19:29	WG1365855
Acrylonitrile	U		0.873	5.00	1	10/19/2019 19:29	WG1365855
Benzene	U		0.0896	0.500	1	10/19/2019 19:29	WG1365855
Bromobenzene	U		0.133	0.500	1	10/19/2019 19:29	WG1365855
Bromodichloromethane	U		0.0800	0.500	1	10/19/2019 19:29	WG1365855
Bromochloromethane	U		0.145	0.500	1	10/19/2019 19:29	WG1365855
Bromoform	U		0.186	0.500	1	10/19/2019 19:29	WG1365855
Bromomethane	U		0.157	2.50	1	10/19/2019 19:29	WG1365855
n-Butylbenzene	U		0.143	0.500	1	10/19/2019 19:29	WG1365855
sec-Butylbenzene	U		0.134	0.500	1	10/19/2019 19:29	WG1365855
tert-Butylbenzene	U		0.183	0.500	1	10/19/2019 19:29	WG1365855
Carbon disulfide	0.343	<u>J</u>	0.101	0.500	1	10/19/2019 19:29	WG1365855
Carbon tetrachloride	U		0.159	0.500	1	10/19/2019 19:29	WG1365855
Chlorobenzene	U		0.140	0.500	1	10/19/2019 19:29	WG1365855
Chlorodibromomethane	U		0.128	0.500	1	10/19/2019 19:29	WG1365855
Chloroethane	U		0.141	2.50	1	10/19/2019 19:29	WG1365855
Chloroform	U		0.0860	0.500	1	10/19/2019 19:29	WG1365855
Chloromethane	U		0.153	1.25	1	10/19/2019 19:29	WG1365855
2-Chlorotoluene	U		0.111	0.500	1	10/19/2019 19:29	WG1365855
4-Chlorotoluene	U		0.0972	0.500	1	10/19/2019 19:29	WG1365855

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/10/19 11:20

L1148900

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/19/2019 19:29	WG1365855
1,2-Dibromoethane	U		0.193	0.500	1	10/19/2019 19:29	WG1365855
Dibromomethane	U		0.117	0.500	1	10/19/2019 19:29	WG1365855
1,2-Dichlorobenzene	U		0.101	0.500	1	10/19/2019 19:29	WG1365855
1,3-Dichlorobenzene	U		0.130	0.500	1	10/19/2019 19:29	WG1365855
1,4-Dichlorobenzene	U		0.121	0.500	1	10/19/2019 19:29	WG1365855
Dichlorodifluoromethane	U		0.127	2.50	1	10/19/2019 19:29	WG1365855
1,1-Dichloroethane	U		0.114	0.500	1	10/19/2019 19:29	WG1365855
1,2-Dichloroethane	U		0.108	0.500	1	10/19/2019 19:29	WG1365855
1,1-Dichloroethene	0.665		0.188	0.500	1	10/19/2019 19:29	WG1365855
cis-1,2-Dichloroethene	173		0.0933	0.500	1	10/19/2019 19:29	WG1365855
trans-1,2-Dichloroethene	0.221	U	0.152	0.500	1	10/19/2019 19:29	WG1365855
1,2-Dichloropropane	U		0.190	0.500	1	10/19/2019 19:29	WG1365855
1,1-Dichloropropene	U		0.128	0.500	1	10/19/2019 19:29	WG1365855
1,3-Dichloropropane	U		0.147	1.00	1	10/19/2019 19:29	WG1365855
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/19/2019 19:29	WG1365855
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/19/2019 19:29	WG1365855
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/19/2019 19:29	WG1365855
2,2-Dichloropropane	U		0.0929	0.500	1	10/19/2019 19:29	WG1365855
Di-isopropyl ether	U		0.0924	0.500	1	10/19/2019 19:29	WG1365855
Ethylbenzene	U		0.158	0.500	1	10/19/2019 19:29	WG1365855
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/19/2019 19:29	WG1365855
2-Hexanone	U		0.757	5.00	1	10/19/2019 19:29	WG1365855
n-Hexane	U		0.305	5.00	1	10/19/2019 19:29	WG1365855
Iodomethane	U		0.377	10.0	1	10/19/2019 19:29	WG1365855
Isopropylbenzene	U		0.126	0.500	1	10/19/2019 19:29	WG1365855
p-Isopropyltoluene	U		0.138	0.500	1	10/19/2019 19:29	WG1365855
2-Butanone (MEK)	2.39	U	1.28	5.00	1	10/19/2019 19:29	WG1365855
Methylene Chloride	U		1.07	2.50	1	10/19/2019 19:29	WG1365855
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/19/2019 19:29	WG1365855
Methyl tert-butyl ether	U		0.102	0.500	1	10/19/2019 19:29	WG1365855
Naphthalene	U		0.174	2.50	1	10/19/2019 19:29	WG1365855
n-Propylbenzene	U		0.162	0.500	1	10/19/2019 19:29	WG1365855
Styrene	U		0.117	0.500	1	10/19/2019 19:29	WG1365855
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/19/2019 19:29	WG1365855
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/19/2019 19:29	WG1365855
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/19/2019 19:29	WG1365855
Tetrachloroethene	20.4		0.199	0.500	1	10/19/2019 19:29	WG1365855
Toluene	U		0.412	0.500	1	10/19/2019 19:29	WG1365855
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/19/2019 19:29	WG1365855
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/19/2019 19:29	WG1365855
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/19/2019 19:29	WG1365855
1,1,2-Trichloroethane	U		0.186	0.500	1	10/19/2019 19:29	WG1365855
Trichloroethene	46.1		0.153	0.500	1	10/19/2019 19:29	WG1365855
Trichlorofluoromethane	U		0.130	2.50	1	10/19/2019 19:29	WG1365855
1,2,3-Trichloropropane	U		0.247	2.50	1	10/19/2019 19:29	WG1365855
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/19/2019 19:29	WG1365855
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/19/2019 19:29	WG1365855
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/19/2019 19:29	WG1365855
Vinyl acetate	U		0.645	5.00	1	10/19/2019 19:29	WG1365855
Vinyl chloride	25.1		0.118	0.500	1	10/19/2019 19:29	WG1365855
Xylenes, Total	U		0.316	1.50	1	10/19/2019 19:29	WG1365855
(S) Toluene-d8	114			80.0-120		10/19/2019 19:29	WG1365855
(S) 4-Bromofluorobenzene	111			77.0-126		10/19/2019 19:29	WG1365855
(S) 1,2-Dichloroethane-d4	98.9			70.0-130		10/19/2019 19:29	WG1365855

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		1.05	25.0	1	10/19/2019 19:49	WG1365855
Acrylonitrile	U		0.873	5.00	1	10/19/2019 19:49	WG1365855
Benzene	20.3		0.0896	0.500	1	10/19/2019 19:49	WG1365855
Bromobenzene	U		0.133	0.500	1	10/19/2019 19:49	WG1365855
Bromodichloromethane	U		0.0800	0.500	1	10/19/2019 19:49	WG1365855
Bromochloromethane	U		0.145	0.500	1	10/19/2019 19:49	WG1365855
Bromoform	U		0.186	0.500	1	10/19/2019 19:49	WG1365855
Bromomethane	U		0.157	2.50	1	10/19/2019 19:49	WG1365855
n-Butylbenzene	U		0.143	0.500	1	10/19/2019 19:49	WG1365855
sec-Butylbenzene	2.75		0.134	0.500	1	10/19/2019 19:49	WG1365855
tert-Butylbenzene	U		0.183	0.500	1	10/19/2019 19:49	WG1365855
Carbon disulfide	U		0.101	0.500	1	10/19/2019 19:49	WG1365855
Carbon tetrachloride	U		0.159	0.500	1	10/19/2019 19:49	WG1365855
Chlorobenzene	U		0.140	0.500	1	10/19/2019 19:49	WG1365855
Chlorodibromomethane	U		0.128	0.500	1	10/19/2019 19:49	WG1365855
Chloroethane	U		0.141	2.50	1	10/19/2019 19:49	WG1365855
Chloroform	U		0.0860	0.500	1	10/19/2019 19:49	WG1365855
Chloromethane	U		0.153	1.25	1	10/19/2019 19:49	WG1365855
2-Chlorotoluene	U		0.111	0.500	1	10/19/2019 19:49	WG1365855
4-Chlorotoluene	U		0.0972	0.500	1	10/19/2019 19:49	WG1365855
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/19/2019 19:49	WG1365855
1,2-Dibromoethane	U		0.193	0.500	1	10/19/2019 19:49	WG1365855
Dibromomethane	U		0.117	0.500	1	10/19/2019 19:49	WG1365855
1,2-Dichlorobenzene	U		0.101	0.500	1	10/19/2019 19:49	WG1365855
1,3-Dichlorobenzene	U		0.130	0.500	1	10/19/2019 19:49	WG1365855
1,4-Dichlorobenzene	U		0.121	0.500	1	10/19/2019 19:49	WG1365855
Dichlorodifluoromethane	U		0.127	2.50	1	10/19/2019 19:49	WG1365855
1,1-Dichloroethane	U		0.114	0.500	1	10/19/2019 19:49	WG1365855
1,2-Dichloroethane	U		0.108	0.500	1	10/19/2019 19:49	WG1365855
1,1-Dichloroethene	U		0.188	0.500	1	10/19/2019 19:49	WG1365855
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/19/2019 19:49	WG1365855
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/19/2019 19:49	WG1365855
1,2-Dichloropropane	U		0.190	0.500	1	10/19/2019 19:49	WG1365855
1,1-Dichloropropene	U		0.128	0.500	1	10/19/2019 19:49	WG1365855
1,3-Dichloropropane	U		0.147	1.00	1	10/19/2019 19:49	WG1365855
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/19/2019 19:49	WG1365855
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/19/2019 19:49	WG1365855
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/19/2019 19:49	WG1365855
2,2-Dichloropropane	U		0.0929	0.500	1	10/19/2019 19:49	WG1365855
Di-isopropyl ether	0.813		0.0924	0.500	1	10/19/2019 19:49	WG1365855
Ethylbenzene	307		1.58	5.00	10	10/21/2019 14:53	WG1366289
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/19/2019 19:49	WG1365855
2-Hexanone	U		0.757	5.00	1	10/19/2019 19:49	WG1365855
n-Hexane	14.1		0.305	5.00	1	10/19/2019 19:49	WG1365855
Iodomethane	U		0.377	10.0	1	10/19/2019 19:49	WG1365855
Isopropylbenzene	28.7		0.126	0.500	1	10/19/2019 19:49	WG1365855
p-Isopropyltoluene	0.676		0.138	0.500	1	10/19/2019 19:49	WG1365855
2-Butanone (MEK)	U		1.28	5.00	1	10/19/2019 19:49	WG1365855
Methylene Chloride	U		1.07	2.50	1	10/19/2019 19:49	WG1365855
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/19/2019 19:49	WG1365855
Methyl tert-butyl ether	U		0.102	0.500	1	10/19/2019 19:49	WG1365855
Naphthalene	89.5	<u>JO</u>	1.74	25.0	10	10/21/2019 14:53	WG1366289
n-Propylbenzene	58.4		0.162	0.500	1	10/19/2019 19:49	WG1365855
Styrene	U		0.117	0.500	1	10/19/2019 19:49	WG1365855
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/19/2019 19:49	WG1365855
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/19/2019 19:49	WG1365855

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/10/19 11:35

L1148900

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/19/2019 19:49	WG1365855
Tetrachloroethene	U		0.199	0.500	1	10/19/2019 19:49	WG1365855
Toluene	6.00		0.412	0.500	1	10/19/2019 19:49	WG1365855
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/19/2019 19:49	WG1365855
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/19/2019 19:49	WG1365855
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/19/2019 19:49	WG1365855
1,1,2-Trichloroethane	U		0.186	0.500	1	10/19/2019 19:49	WG1365855
Trichloroethene	U		0.153	0.500	1	10/19/2019 19:49	WG1365855
Trichlorofluoromethane	U		0.130	2.50	1	10/19/2019 19:49	WG1365855
1,2,3-Trichloropropane	U		0.247	2.50	1	10/19/2019 19:49	WG1365855
1,2,4-Trimethylbenzene	130		0.123	0.500	1	10/19/2019 19:49	WG1365855
1,2,3-Trimethylbenzene	119		0.0739	0.500	1	10/19/2019 19:49	WG1365855
1,3,5-Trimethylbenzene	8.19		0.124	0.500	1	10/19/2019 19:49	WG1365855
Vinyl acetate	U		0.645	5.00	1	10/19/2019 19:49	WG1365855
Vinyl chloride	U		0.118	0.500	1	10/19/2019 19:49	WG1365855
Xylenes, Total	123		0.316	1.50	1	10/19/2019 19:49	WG1365855
(S) Toluene-d8	106			80.0-120		10/19/2019 19:49	WG1365855
(S) Toluene-d8	109			80.0-120		10/21/2019 14:53	WG1366289
(S) 4-Bromofluorobenzene	108			77.0-126		10/19/2019 19:49	WG1365855
(S) 4-Bromofluorobenzene	89.8			77.0-126		10/21/2019 14:53	WG1366289
(S) 1,2-Dichloroethane-d4	99.4			70.0-130		10/19/2019 19:49	WG1365855
(S) 1,2-Dichloroethane-d4	95.0			70.0-130		10/21/2019 14:53	WG1366289

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	570000		2710	20000	1	10/18/2019 00:22	WG1364209

Sample Narrative:

L1148900-06 WG1364209: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	26100		51.9	1000	1	10/11/2019 21:07	WG1361340
Nitrate	U		22.7	100	1	10/11/2019 21:07	WG1361340
Sulfate	43700		77.4	5000	1	10/11/2019 21:07	WG1361340

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	5830	<u>B</u>	102	1000	1	10/14/2019 04:05	WG1362294

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	13500		150	1000	10	10/17/2019 00:24	WG1363727
Manganese	1760		2.50	50.0	10	10/17/2019 00:24	WG1363727

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	3650		0.287	0.678	1	10/14/2019 16:23	WG1362474
Ethane	70.7		0.296	1.29	1	10/14/2019 16:23	WG1362474
Ethene	6.24		0.422	1.27	1	10/14/2019 16:23	WG1362474

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.73	<u>J</u>	1.05	25.0	1	10/19/2019 20:09	WG1365855
Acrylonitrile	U		0.873	5.00	1	10/19/2019 20:09	WG1365855
Benzene	3.16		0.0896	0.500	1	10/19/2019 20:09	WG1365855
Bromobenzene	U		0.133	0.500	1	10/19/2019 20:09	WG1365855
Bromodichloromethane	U		0.0800	0.500	1	10/19/2019 20:09	WG1365855
Bromochloromethane	U		0.145	0.500	1	10/19/2019 20:09	WG1365855
Bromoform	U		0.186	0.500	1	10/19/2019 20:09	WG1365855
Bromomethane	U		0.157	2.50	1	10/19/2019 20:09	WG1365855
n-Butylbenzene	U		0.143	0.500	1	10/19/2019 20:09	WG1365855
sec-Butylbenzene	U		0.134	0.500	1	10/19/2019 20:09	WG1365855
tert-Butylbenzene	U		0.183	0.500	1	10/19/2019 20:09	WG1365855
Carbon disulfide	U		0.101	0.500	1	10/19/2019 20:09	WG1365855
Carbon tetrachloride	U		0.159	0.500	1	10/19/2019 20:09	WG1365855
Chlorobenzene	U		0.140	0.500	1	10/19/2019 20:09	WG1365855
Chlorodibromomethane	U		0.128	0.500	1	10/19/2019 20:09	WG1365855
Chloroethane	U		0.141	2.50	1	10/19/2019 20:09	WG1365855
Chloroform	U		0.0860	0.500	1	10/19/2019 20:09	WG1365855
Chloromethane	U		0.153	1.25	1	10/19/2019 20:09	WG1365855
2-Chlorotoluene	U		0.111	0.500	1	10/19/2019 20:09	WG1365855
4-Chlorotoluene	U		0.0972	0.500	1	10/19/2019 20:09	WG1365855

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/19/2019 20:09	WG1365855
1,2-Dibromoethane	U		0.193	0.500	1	10/19/2019 20:09	WG1365855
Dibromomethane	U		0.117	0.500	1	10/19/2019 20:09	WG1365855
1,2-Dichlorobenzene	U		0.101	0.500	1	10/19/2019 20:09	WG1365855
1,3-Dichlorobenzene	U		0.130	0.500	1	10/19/2019 20:09	WG1365855
1,4-Dichlorobenzene	U		0.121	0.500	1	10/19/2019 20:09	WG1365855
Dichlorodifluoromethane	U		0.127	2.50	1	10/19/2019 20:09	WG1365855
1,1-Dichloroethane	U		0.114	0.500	1	10/19/2019 20:09	WG1365855
1,2-Dichloroethane	U		0.108	0.500	1	10/19/2019 20:09	WG1365855
1,1-Dichloroethene	9.11		0.188	0.500	1	10/19/2019 20:09	WG1365855
cis-1,2-Dichloroethene	1080		2.33	12.5	25	10/21/2019 15:13	WG1366289
trans-1,2-Dichloroethene	5.55		0.152	0.500	1	10/19/2019 20:09	WG1365855
1,2-Dichloropropane	U		0.190	0.500	1	10/19/2019 20:09	WG1365855
1,1-Dichloropropene	U		0.128	0.500	1	10/19/2019 20:09	WG1365855
1,3-Dichloropropane	U		0.147	1.00	1	10/19/2019 20:09	WG1365855
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/19/2019 20:09	WG1365855
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/19/2019 20:09	WG1365855
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/19/2019 20:09	WG1365855
2,2-Dichloropropane	U		0.0929	0.500	1	10/19/2019 20:09	WG1365855
Di-isopropyl ether	U		0.0924	0.500	1	10/19/2019 20:09	WG1365855
Ethylbenzene	0.327	U	0.158	0.500	1	10/19/2019 20:09	WG1365855
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/19/2019 20:09	WG1365855
2-Hexanone	U		0.757	5.00	1	10/19/2019 20:09	WG1365855
n-Hexane	U		0.305	5.00	1	10/19/2019 20:09	WG1365855
Iodomethane	U		0.377	10.0	1	10/19/2019 20:09	WG1365855
Isopropylbenzene	U		0.126	0.500	1	10/19/2019 20:09	WG1365855
p-Isopropyltoluene	U		0.138	0.500	1	10/19/2019 20:09	WG1365855
2-Butanone (MEK)	U		1.28	5.00	1	10/19/2019 20:09	WG1365855
Methylene Chloride	U		1.07	2.50	1	10/19/2019 20:09	WG1365855
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/19/2019 20:09	WG1365855
Methyl tert-butyl ether	U		0.102	0.500	1	10/19/2019 20:09	WG1365855
Naphthalene	23.8	B J J O	4.35	62.5	25	10/21/2019 15:13	WG1366289
n-Propylbenzene	0.177	U	0.162	0.500	1	10/19/2019 20:09	WG1365855
Styrene	U		0.117	0.500	1	10/19/2019 20:09	WG1365855
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/19/2019 20:09	WG1365855
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/19/2019 20:09	WG1365855
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/19/2019 20:09	WG1365855
Tetrachloroethene	524		4.98	12.5	25	10/21/2019 15:13	WG1366289
Toluene	U		0.412	0.500	1	10/19/2019 20:09	WG1365855
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/19/2019 20:09	WG1365855
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/19/2019 20:09	WG1365855
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/19/2019 20:09	WG1365855
1,1,2-Trichloroethane	U		0.186	0.500	1	10/19/2019 20:09	WG1365855
Trichloroethene	483		3.83	12.5	25	10/21/2019 15:13	WG1366289
Trichlorofluoromethane	U		0.130	2.50	1	10/19/2019 20:09	WG1365855
1,2,3-Trichloropropane	U		0.247	2.50	1	10/19/2019 20:09	WG1365855
1,2,4-Trimethylbenzene	0.392	U	0.123	0.500	1	10/19/2019 20:09	WG1365855
1,2,3-Trimethylbenzene	0.556		0.0739	0.500	1	10/19/2019 20:09	WG1365855
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/19/2019 20:09	WG1365855
Vinyl acetate	U		0.645	5.00	1	10/19/2019 20:09	WG1365855
Vinyl chloride	194		0.118	0.500	1	10/19/2019 20:09	WG1365855
Xylenes, Total	U		0.316	1.50	1	10/19/2019 20:09	WG1365855
(S) Toluene-d8	115			80.0-120		10/19/2019 20:09	WG1365855
(S) Toluene-d8	111			80.0-120		10/21/2019 15:13	WG1366289
(S) 4-Bromofluorobenzene	107			77.0-126		10/19/2019 20:09	WG1365855
(S) 4-Bromofluorobenzene	92.6			77.0-126		10/21/2019 15:13	WG1366289

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	93.2			70.0-130		10/19/2019 20:09	WG1365855
(S) 1,2-Dichloroethane-d4	98.4			70.0-130		10/21/2019 15:13	WG1366289

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	378000		2710	20000	1	10/18/2019 00:28	WG1364209

Sample Narrative:

L1148900-07 WG1364209: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	11600		51.9	1000	1	10/11/2019 21:42	WG1361340
Nitrate	199		22.7	100	1	10/11/2019 21:42	WG1361340
Sulfate	66300		77.4	5000	1	10/11/2019 21:42	WG1361340

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	4390	<u>B</u>	102	1000	1	10/14/2019 04:27	WG1362294

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	2150		15.0	100	1	10/16/2019 23:05	WG1363727
Manganese	1590		2.50	50.0	10	10/17/2019 00:48	WG1363727

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	76.2		0.287	0.678	1	10/14/2019 16:28	WG1362474
Ethane	U		0.296	1.29	1	10/14/2019 16:28	WG1362474
Ethene	U		0.422	1.27	1	10/14/2019 16:28	WG1362474

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		1.05	25.0	1	10/19/2019 20:30	WG1365855
Acrylonitrile	U		0.873	5.00	1	10/19/2019 20:30	WG1365855
Benzene	U		0.0896	0.500	1	10/19/2019 20:30	WG1365855
Bromobenzene	U		0.133	0.500	1	10/19/2019 20:30	WG1365855
Bromodichloromethane	U		0.0800	0.500	1	10/19/2019 20:30	WG1365855
Bromochloromethane	U		0.145	0.500	1	10/19/2019 20:30	WG1365855
Bromoform	U		0.186	0.500	1	10/19/2019 20:30	WG1365855
Bromomethane	U		0.157	2.50	1	10/19/2019 20:30	WG1365855
n-Butylbenzene	U		0.143	0.500	1	10/19/2019 20:30	WG1365855
sec-Butylbenzene	U		0.134	0.500	1	10/19/2019 20:30	WG1365855
tert-Butylbenzene	U		0.183	0.500	1	10/19/2019 20:30	WG1365855
Carbon disulfide	U		0.101	0.500	1	10/19/2019 20:30	WG1365855
Carbon tetrachloride	U		0.159	0.500	1	10/19/2019 20:30	WG1365855
Chlorobenzene	U		0.140	0.500	1	10/19/2019 20:30	WG1365855
Chlorodibromomethane	U		0.128	0.500	1	10/19/2019 20:30	WG1365855
Chloroethane	U		0.141	2.50	1	10/19/2019 20:30	WG1365855
Chloroform	U		0.0860	0.500	1	10/19/2019 20:30	WG1365855
Chloromethane	U		0.153	1.25	1	10/19/2019 20:30	WG1365855
2-Chlorotoluene	U		0.111	0.500	1	10/19/2019 20:30	WG1365855
4-Chlorotoluene	U		0.0972	0.500	1	10/19/2019 20:30	WG1365855

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/19/2019 20:30	WG1365855
1,2-Dibromoethane	U		0.193	0.500	1	10/19/2019 20:30	WG1365855
Dibromomethane	U		0.117	0.500	1	10/19/2019 20:30	WG1365855
1,2-Dichlorobenzene	U		0.101	0.500	1	10/19/2019 20:30	WG1365855
1,3-Dichlorobenzene	U		0.130	0.500	1	10/19/2019 20:30	WG1365855
1,4-Dichlorobenzene	U		0.121	0.500	1	10/19/2019 20:30	WG1365855
Dichlorodifluoromethane	U		0.127	2.50	1	10/19/2019 20:30	WG1365855
1,1-Dichloroethane	U		0.114	0.500	1	10/19/2019 20:30	WG1365855
1,2-Dichloroethane	U		0.108	0.500	1	10/19/2019 20:30	WG1365855
1,1-Dichloroethene	U		0.188	0.500	1	10/19/2019 20:30	WG1365855
cis-1,2-Dichloroethene	7.34		0.0933	0.500	1	10/21/2019 15:33	WG1366289
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/19/2019 20:30	WG1365855
1,2-Dichloropropane	U		0.190	0.500	1	10/19/2019 20:30	WG1365855
1,1-Dichloropropene	U		0.128	0.500	1	10/19/2019 20:30	WG1365855
1,3-Dichloropropane	U		0.147	1.00	1	10/19/2019 20:30	WG1365855
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/19/2019 20:30	WG1365855
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/19/2019 20:30	WG1365855
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/19/2019 20:30	WG1365855
2,2-Dichloropropane	U		0.0929	0.500	1	10/19/2019 20:30	WG1365855
Di-isopropyl ether	U		0.0924	0.500	1	10/19/2019 20:30	WG1365855
Ethylbenzene	U		0.158	0.500	1	10/19/2019 20:30	WG1365855
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/19/2019 20:30	WG1365855
2-Hexanone	U		0.757	5.00	1	10/19/2019 20:30	WG1365855
n-Hexane	U		0.305	5.00	1	10/19/2019 20:30	WG1365855
Iodomethane	U		0.377	10.0	1	10/19/2019 20:30	WG1365855
Isopropylbenzene	U		0.126	0.500	1	10/19/2019 20:30	WG1365855
p-Isopropyltoluene	U		0.138	0.500	1	10/19/2019 20:30	WG1365855
2-Butanone (MEK)	U		1.28	5.00	1	10/19/2019 20:30	WG1365855
Methylene Chloride	U		1.07	2.50	1	10/19/2019 20:30	WG1365855
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/19/2019 20:30	WG1365855
Methyl tert-butyl ether	U		0.102	0.500	1	10/19/2019 20:30	WG1365855
Naphthalene	U	<u>JO</u>	0.174	2.50	1	10/21/2019 15:33	WG1366289
n-Propylbenzene	U		0.162	0.500	1	10/19/2019 20:30	WG1365855
Styrene	U		0.117	0.500	1	10/19/2019 20:30	WG1365855
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/19/2019 20:30	WG1365855
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/19/2019 20:30	WG1365855
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/19/2019 20:30	WG1365855
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 15:33	WG1366289
Toluene	U		0.412	0.500	1	10/19/2019 20:30	WG1365855
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/19/2019 20:30	WG1365855
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/19/2019 20:30	WG1365855
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/19/2019 20:30	WG1365855
1,1,2-Trichloroethane	U		0.186	0.500	1	10/19/2019 20:30	WG1365855
Trichloroethene	U		0.153	0.500	1	10/21/2019 15:33	WG1366289
Trichlorofluoromethane	U		0.130	2.50	1	10/19/2019 20:30	WG1365855
1,2,3-Trichloropropane	U		0.247	2.50	1	10/19/2019 20:30	WG1365855
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/19/2019 20:30	WG1365855
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/19/2019 20:30	WG1365855
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/19/2019 20:30	WG1365855
Vinyl acetate	U		0.645	5.00	1	10/19/2019 20:30	WG1365855
Vinyl chloride	1.09		0.118	0.500	1	10/19/2019 20:30	WG1365855
Xylenes, Total	U		0.316	1.50	1	10/19/2019 20:30	WG1365855
(S) Toluene-d8	112			80.0-120		10/19/2019 20:30	WG1365855
(S) Toluene-d8	113			80.0-120		10/21/2019 15:33	WG1366289
(S) 4-Bromofluorobenzene	111			77.0-126		10/19/2019 20:30	WG1365855
(S) 4-Bromofluorobenzene	94.9			77.0-126		10/21/2019 15:33	WG1366289

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	97.1			70.0-130		10/19/2019 20:30	WG1365855
(S) 1,2-Dichloroethane-d4	97.0			70.0-130		10/21/2019 15:33	WG1366289

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	786000		2710	20000	1	10/17/2019 16:38	WG1364211

Sample Narrative:

L1148900-08 WG1364211: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	10700		51.9	1000	1	10/11/2019 22:00	WG1361340
Nitrate	U		22.7	100	1	10/11/2019 22:00	WG1361340
Sulfate	88000		77.4	5000	1	10/11/2019 22:00	WG1361340

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	8930		102	1000	1	10/14/2019 04:49	WG1362294

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	11200		300	2000	20	10/17/2019 00:37	WG1363727
Manganese	3010		5.00	100	20	10/17/2019 00:37	WG1363727

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	558		0.287	0.678	1	10/14/2019 16:32	WG1362474
Ethane	U		0.296	1.29	1	10/14/2019 16:32	WG1362474
Ethene	U		0.422	1.27	1	10/14/2019 16:32	WG1362474

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.91	J	1.05	25.0	1	10/19/2019 20:50	WG1365855
Acrylonitrile	U		0.873	5.00	1	10/19/2019 20:50	WG1365855
Benzene	U		0.0896	0.500	1	10/19/2019 20:50	WG1365855
Bromobenzene	U		0.133	0.500	1	10/19/2019 20:50	WG1365855
Bromodichloromethane	U		0.0800	0.500	1	10/19/2019 20:50	WG1365855
Bromochloromethane	U		0.145	0.500	1	10/19/2019 20:50	WG1365855
Bromoform	U		0.186	0.500	1	10/19/2019 20:50	WG1365855
Bromomethane	U		0.157	2.50	1	10/19/2019 20:50	WG1365855
n-Butylbenzene	U		0.143	0.500	1	10/19/2019 20:50	WG1365855
sec-Butylbenzene	U		0.134	0.500	1	10/19/2019 20:50	WG1365855
tert-Butylbenzene	U		0.183	0.500	1	10/19/2019 20:50	WG1365855
Carbon disulfide	U		0.101	0.500	1	10/19/2019 20:50	WG1365855
Carbon tetrachloride	U		0.159	0.500	1	10/19/2019 20:50	WG1365855
Chlorobenzene	U		0.140	0.500	1	10/19/2019 20:50	WG1365855
Chlorodibromomethane	U		0.128	0.500	1	10/19/2019 20:50	WG1365855
Chloroethane	U		0.141	2.50	1	10/19/2019 20:50	WG1365855
Chloroform	U		0.0860	0.500	1	10/19/2019 20:50	WG1365855
Chloromethane	U		0.153	1.25	1	10/19/2019 20:50	WG1365855
2-Chlorotoluene	U		0.111	0.500	1	10/19/2019 20:50	WG1365855
4-Chlorotoluene	U		0.0972	0.500	1	10/19/2019 20:50	WG1365855

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/19/2019 20:50	WG1365855
1,2-Dibromoethane	U		0.193	0.500	1	10/19/2019 20:50	WG1365855
Dibromomethane	U		0.117	0.500	1	10/19/2019 20:50	WG1365855
1,2-Dichlorobenzene	U		0.101	0.500	1	10/19/2019 20:50	WG1365855
1,3-Dichlorobenzene	U		0.130	0.500	1	10/19/2019 20:50	WG1365855
1,4-Dichlorobenzene	U		0.121	0.500	1	10/19/2019 20:50	WG1365855
Dichlorodifluoromethane	U		0.127	2.50	1	10/19/2019 20:50	WG1365855
1,1-Dichloroethane	U		0.114	0.500	1	10/19/2019 20:50	WG1365855
1,2-Dichloroethane	U		0.108	0.500	1	10/19/2019 20:50	WG1365855
1,1-Dichloroethene	U		0.188	0.500	1	10/19/2019 20:50	WG1365855
cis-1,2-Dichloroethene	0.148	U	0.0933	0.500	1	10/21/2019 16:18	WG1366289
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/19/2019 20:50	WG1365855
1,2-Dichloropropane	U		0.190	0.500	1	10/19/2019 20:50	WG1365855
1,1-Dichloropropene	U		0.128	0.500	1	10/19/2019 20:50	WG1365855
1,3-Dichloropropane	U		0.147	1.00	1	10/19/2019 20:50	WG1365855
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/19/2019 20:50	WG1365855
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/19/2019 20:50	WG1365855
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/19/2019 20:50	WG1365855
2,2-Dichloropropane	U		0.0929	0.500	1	10/19/2019 20:50	WG1365855
Di-isopropyl ether	U		0.0924	0.500	1	10/19/2019 20:50	WG1365855
Ethylbenzene	U		0.158	0.500	1	10/19/2019 20:50	WG1365855
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/19/2019 20:50	WG1365855
2-Hexanone	U		0.757	5.00	1	10/19/2019 20:50	WG1365855
n-Hexane	U		0.305	5.00	1	10/19/2019 20:50	WG1365855
Iodomethane	U		0.377	10.0	1	10/19/2019 20:50	WG1365855
Isopropylbenzene	0.352	U	0.126	0.500	1	10/19/2019 20:50	WG1365855
p-Isopropyltoluene	U		0.138	0.500	1	10/19/2019 20:50	WG1365855
2-Butanone (MEK)	U		1.28	5.00	1	10/19/2019 20:50	WG1365855
Methylene Chloride	U		1.07	2.50	1	10/19/2019 20:50	WG1365855
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/19/2019 20:50	WG1365855
Methyl tert-butyl ether	U		0.102	0.500	1	10/19/2019 20:50	WG1365855
Naphthalene	U		0.174	2.50	1	10/21/2019 16:18	WG1366289
n-Propylbenzene	U		0.162	0.500	1	10/19/2019 20:50	WG1365855
Styrene	U		0.117	0.500	1	10/19/2019 20:50	WG1365855
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/19/2019 20:50	WG1365855
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/19/2019 20:50	WG1365855
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/19/2019 20:50	WG1365855
Tetrachloroethene	U		0.199	0.500	1	10/19/2019 20:50	WG1365855
Toluene	U		0.412	0.500	1	10/19/2019 20:50	WG1365855
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/19/2019 20:50	WG1365855
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/19/2019 20:50	WG1365855
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/19/2019 20:50	WG1365855
1,1,2-Trichloroethane	U		0.186	0.500	1	10/19/2019 20:50	WG1365855
Trichloroethene	U		0.153	0.500	1	10/21/2019 16:18	WG1366289
Trichlorofluoromethane	U		0.130	2.50	1	10/19/2019 20:50	WG1365855
1,2,3-Trichloropropane	U		0.247	2.50	1	10/19/2019 20:50	WG1365855
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/19/2019 20:50	WG1365855
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/19/2019 20:50	WG1365855
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/19/2019 20:50	WG1365855
Vinyl acetate	U		0.645	5.00	1	10/19/2019 20:50	WG1365855
Vinyl chloride	U		0.118	0.500	1	10/19/2019 20:50	WG1365855
Xylenes, Total	U		0.316	1.50	1	10/19/2019 20:50	WG1365855
(S) Toluene-d8	111			80.0-120		10/19/2019 20:50	WG1365855
(S) Toluene-d8	112			80.0-120		10/21/2019 16:18	WG1366289
(S) 4-Bromofluorobenzene	111			77.0-126		10/19/2019 20:50	WG1365855
(S) 4-Bromofluorobenzene	93.8			77.0-126		10/21/2019 16:18	WG1366289

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	96.6			70.0-130		10/19/2019 20:50	WG1365855
(S) 1,2-Dichloroethane-d4	94.3			70.0-130		10/21/2019 16:18	WG1366289

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	226000		2710	20000	1	10/17/2019 16:44	WG1364211

Sample Narrative:

L1148900-09 WG1364211: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	18600		51.9	1000	1	10/11/2019 22:18	WG1361340
Nitrate	U		22.7	100	1	10/11/2019 22:18	WG1361340
Sulfate	26400		77.4	5000	1	10/11/2019 22:18	WG1361340

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	4980	<u>B</u>	102	1000	1	10/14/2019 05:09	WG1362294

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	10700		300	2000	20	10/17/2019 00:40	WG1363727
Manganese	2630		5.00	100	20	10/17/2019 00:40	WG1363727

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	289		0.287	0.678	1	10/14/2019 16:35	WG1362474
Ethane	U		0.296	1.29	1	10/14/2019 16:35	WG1362474
Ethene	U		0.422	1.27	1	10/14/2019 16:35	WG1362474

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.20	<u>J</u>	1.05	25.0	1	10/19/2019 21:10	WG1365855
Acrylonitrile	U		0.873	5.00	1	10/19/2019 21:10	WG1365855
Benzene	U		0.0896	0.500	1	10/19/2019 21:10	WG1365855
Bromobenzene	U		0.133	0.500	1	10/19/2019 21:10	WG1365855
Bromodichloromethane	U		0.0800	0.500	1	10/19/2019 21:10	WG1365855
Bromochloromethane	U		0.145	0.500	1	10/19/2019 21:10	WG1365855
Bromoform	U		0.186	0.500	1	10/19/2019 21:10	WG1365855
Bromomethane	U		0.157	2.50	1	10/19/2019 21:10	WG1365855
n-Butylbenzene	U		0.143	0.500	1	10/19/2019 21:10	WG1365855
sec-Butylbenzene	U		0.134	0.500	1	10/19/2019 21:10	WG1365855
tert-Butylbenzene	U		0.183	0.500	1	10/19/2019 21:10	WG1365855
Carbon disulfide	U		0.101	0.500	1	10/19/2019 21:10	WG1365855
Carbon tetrachloride	U		0.159	0.500	1	10/19/2019 21:10	WG1365855
Chlorobenzene	U		0.140	0.500	1	10/19/2019 21:10	WG1365855
Chlorodibromomethane	U		0.128	0.500	1	10/19/2019 21:10	WG1365855
Chloroethane	U		0.141	2.50	1	10/19/2019 21:10	WG1365855
Chloroform	U		0.0860	0.500	1	10/19/2019 21:10	WG1365855
Chloromethane	U		0.153	1.25	1	10/19/2019 21:10	WG1365855
2-Chlorotoluene	U		0.111	0.500	1	10/19/2019 21:10	WG1365855
4-Chlorotoluene	U		0.0972	0.500	1	10/19/2019 21:10	WG1365855

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/19/2019 21:10	WG1365855
1,2-Dibromoethane	U		0.193	0.500	1	10/19/2019 21:10	WG1365855
Dibromomethane	U		0.117	0.500	1	10/19/2019 21:10	WG1365855
1,2-Dichlorobenzene	U		0.101	0.500	1	10/19/2019 21:10	WG1365855
1,3-Dichlorobenzene	U		0.130	0.500	1	10/19/2019 21:10	WG1365855
1,4-Dichlorobenzene	U		0.121	0.500	1	10/19/2019 21:10	WG1365855
Dichlorodifluoromethane	U		0.127	2.50	1	10/19/2019 21:10	WG1365855
1,1-Dichloroethane	U		0.114	0.500	1	10/19/2019 21:10	WG1365855
1,2-Dichloroethane	U		0.108	0.500	1	10/19/2019 21:10	WG1365855
1,1-Dichloroethene	U		0.188	0.500	1	10/19/2019 21:10	WG1365855
cis-1,2-Dichloroethene	12.6		0.0933	0.500	1	10/19/2019 21:10	WG1365855
trans-1,2-Dichloroethene	0.159	U	0.152	0.500	1	10/19/2019 21:10	WG1365855
1,2-Dichloropropane	U		0.190	0.500	1	10/19/2019 21:10	WG1365855
1,1-Dichloropropene	U		0.128	0.500	1	10/19/2019 21:10	WG1365855
1,3-Dichloropropane	U		0.147	1.00	1	10/19/2019 21:10	WG1365855
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/19/2019 21:10	WG1365855
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/19/2019 21:10	WG1365855
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/19/2019 21:10	WG1365855
2,2-Dichloropropane	U		0.0929	0.500	1	10/19/2019 21:10	WG1365855
Di-isopropyl ether	U		0.0924	0.500	1	10/19/2019 21:10	WG1365855
Ethylbenzene	U		0.158	0.500	1	10/19/2019 21:10	WG1365855
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/19/2019 21:10	WG1365855
2-Hexanone	U		0.757	5.00	1	10/19/2019 21:10	WG1365855
n-Hexane	U		0.305	5.00	1	10/19/2019 21:10	WG1365855
Iodomethane	U		0.377	10.0	1	10/19/2019 21:10	WG1365855
Isopropylbenzene	U		0.126	0.500	1	10/19/2019 21:10	WG1365855
p-Isopropyltoluene	U		0.138	0.500	1	10/19/2019 21:10	WG1365855
2-Butanone (MEK)	U		1.28	5.00	1	10/19/2019 21:10	WG1365855
Methylene Chloride	U		1.07	2.50	1	10/19/2019 21:10	WG1365855
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/19/2019 21:10	WG1365855
Methyl tert-butyl ether	U		0.102	0.500	1	10/19/2019 21:10	WG1365855
Naphthalene	U		0.174	2.50	1	10/19/2019 21:10	WG1365855
n-Propylbenzene	U		0.162	0.500	1	10/19/2019 21:10	WG1365855
Styrene	U		0.117	0.500	1	10/19/2019 21:10	WG1365855
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/19/2019 21:10	WG1365855
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/19/2019 21:10	WG1365855
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/19/2019 21:10	WG1365855
Tetrachloroethene	0.876		0.199	0.500	1	10/19/2019 21:10	WG1365855
Toluene	U		0.412	0.500	1	10/19/2019 21:10	WG1365855
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/19/2019 21:10	WG1365855
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/19/2019 21:10	WG1365855
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/19/2019 21:10	WG1365855
1,1,2-Trichloroethane	U		0.186	0.500	1	10/19/2019 21:10	WG1365855
Trichloroethene	7.54		0.153	0.500	1	10/19/2019 21:10	WG1365855
Trichlorofluoromethane	U		0.130	2.50	1	10/19/2019 21:10	WG1365855
1,2,3-Trichloropropane	U		0.247	2.50	1	10/19/2019 21:10	WG1365855
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/19/2019 21:10	WG1365855
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/19/2019 21:10	WG1365855
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/19/2019 21:10	WG1365855
Vinyl acetate	U		0.645	5.00	1	10/19/2019 21:10	WG1365855
Vinyl chloride	U		0.118	0.500	1	10/19/2019 21:10	WG1365855
Xylenes, Total	U		0.316	1.50	1	10/19/2019 21:10	WG1365855
(S) Toluene-d8	115			80.0-120		10/19/2019 21:10	WG1365855
(S) 4-Bromofluorobenzene	112			77.0-126		10/19/2019 21:10	WG1365855
(S) 1,2-Dichloroethane-d4	98.4			70.0-130		10/19/2019 21:10	WG1365855

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		1.05	25.0	1	10/19/2019 16:05	WG1365855
Acrylonitrile	U		0.873	5.00	1	10/19/2019 16:05	WG1365855
Benzene	U		0.0896	0.500	1	10/19/2019 16:05	WG1365855
Bromobenzene	U		0.133	0.500	1	10/19/2019 16:05	WG1365855
Bromodichloromethane	U		0.0800	0.500	1	10/19/2019 16:05	WG1365855
Bromochloromethane	U		0.145	0.500	1	10/19/2019 16:05	WG1365855
Bromoform	U		0.186	0.500	1	10/19/2019 16:05	WG1365855
Bromomethane	U		0.157	2.50	1	10/19/2019 16:05	WG1365855
n-Butylbenzene	U		0.143	0.500	1	10/19/2019 16:05	WG1365855
sec-Butylbenzene	U		0.134	0.500	1	10/19/2019 16:05	WG1365855
tert-Butylbenzene	U		0.183	0.500	1	10/19/2019 16:05	WG1365855
Carbon disulfide	U		0.101	0.500	1	10/19/2019 16:05	WG1365855
Carbon tetrachloride	U		0.159	0.500	1	10/19/2019 16:05	WG1365855
Chlorobenzene	U		0.140	0.500	1	10/19/2019 16:05	WG1365855
Chlorodibromomethane	U		0.128	0.500	1	10/19/2019 16:05	WG1365855
Chloroethane	U		0.141	2.50	1	10/19/2019 16:05	WG1365855
Chloroform	U		0.0860	0.500	1	10/19/2019 16:05	WG1365855
Chloromethane	U		0.153	1.25	1	10/19/2019 16:05	WG1365855
2-Chlorotoluene	U		0.111	0.500	1	10/19/2019 16:05	WG1365855
4-Chlorotoluene	U		0.0972	0.500	1	10/19/2019 16:05	WG1365855
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/19/2019 16:05	WG1365855
1,2-Dibromoethane	U		0.193	0.500	1	10/19/2019 16:05	WG1365855
Dibromomethane	U		0.117	0.500	1	10/19/2019 16:05	WG1365855
1,2-Dichlorobenzene	U		0.101	0.500	1	10/19/2019 16:05	WG1365855
1,3-Dichlorobenzene	U		0.130	0.500	1	10/19/2019 16:05	WG1365855
1,4-Dichlorobenzene	U		0.121	0.500	1	10/19/2019 16:05	WG1365855
Dichlorodifluoromethane	U		0.127	2.50	1	10/19/2019 16:05	WG1365855
1,1-Dichloroethane	U		0.114	0.500	1	10/19/2019 16:05	WG1365855
1,2-Dichloroethane	U		0.108	0.500	1	10/19/2019 16:05	WG1365855
1,1-Dichloroethene	U		0.188	0.500	1	10/19/2019 16:05	WG1365855
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/19/2019 16:05	WG1365855
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/19/2019 16:05	WG1365855
1,2-Dichloropropane	U		0.190	0.500	1	10/19/2019 16:05	WG1365855
1,1-Dichloropropene	U		0.128	0.500	1	10/19/2019 16:05	WG1365855
1,3-Dichloropropane	U		0.147	1.00	1	10/19/2019 16:05	WG1365855
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/19/2019 16:05	WG1365855
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/19/2019 16:05	WG1365855
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/19/2019 16:05	WG1365855
2,2-Dichloropropane	U		0.0929	0.500	1	10/19/2019 16:05	WG1365855
Di-isopropyl ether	U		0.0924	0.500	1	10/19/2019 16:05	WG1365855
Ethylbenzene	U		0.158	0.500	1	10/19/2019 16:05	WG1365855
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/19/2019 16:05	WG1365855
2-Hexanone	U		0.757	5.00	1	10/19/2019 16:05	WG1365855
n-Hexane	U		0.305	5.00	1	10/19/2019 16:05	WG1365855
Iodomethane	U		0.377	10.0	1	10/19/2019 16:05	WG1365855
Isopropylbenzene	U		0.126	0.500	1	10/19/2019 16:05	WG1365855
p-Isopropyltoluene	U		0.138	0.500	1	10/19/2019 16:05	WG1365855
2-Butanone (MEK)	U		1.28	5.00	1	10/19/2019 16:05	WG1365855
Methylene Chloride	U		1.07	2.50	1	10/19/2019 16:05	WG1365855
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/19/2019 16:05	WG1365855
Methyl tert-butyl ether	U		0.102	0.500	1	10/19/2019 16:05	WG1365855
Naphthalene	U		0.174	2.50	1	10/19/2019 16:05	WG1365855
n-Propylbenzene	U		0.162	0.500	1	10/19/2019 16:05	WG1365855
Styrene	U		0.117	0.500	1	10/19/2019 16:05	WG1365855
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/19/2019 16:05	WG1365855
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/19/2019 16:05	WG1365855

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/19/2019 16:05	WG1365855
Tetrachloroethene	U		0.199	0.500	1	10/19/2019 16:05	WG1365855
Toluene	U		0.412	0.500	1	10/19/2019 16:05	WG1365855
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/19/2019 16:05	WG1365855
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/19/2019 16:05	WG1365855
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/19/2019 16:05	WG1365855
1,1,2-Trichloroethane	U		0.186	0.500	1	10/19/2019 16:05	WG1365855
Trichloroethene	U		0.153	0.500	1	10/19/2019 16:05	WG1365855
Trichlorofluoromethane	U		0.130	2.50	1	10/19/2019 16:05	WG1365855
1,2,3-Trichloropropane	U		0.247	2.50	1	10/19/2019 16:05	WG1365855
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/19/2019 16:05	WG1365855
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/19/2019 16:05	WG1365855
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/19/2019 16:05	WG1365855
Vinyl acetate	U		0.645	5.00	1	10/19/2019 16:05	WG1365855
Vinyl chloride	U		0.118	0.500	1	10/19/2019 16:05	WG1365855
Xylenes, Total	U		0.316	1.50	1	10/19/2019 16:05	WG1365855
(S) Toluene-d8	113			80.0-120		10/19/2019 16:05	WG1365855
(S) 4-Bromofluorobenzene	113			77.0-126		10/19/2019 16:05	WG1365855
(S) 1,2-Dichloroethane-d4	98.1			70.0-130		10/19/2019 16:05	WG1365855

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3462293-1 10/18/19 00:00

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	5440	↓	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1148902-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1148902-01 10/18/19 00:35 • (DUP) R3462293-2 10/18/19 00:41

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	364000	362000	1	0.303		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

L1148902-16 Original Sample (OS) • Duplicate (DUP)

(OS) L1148902-16 10/18/19 02:38 • (DUP) R3462293-4 10/18/19 02:45

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	257000	265000	1	2.93		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3462293-3 10/18/19 01:09

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	99800	99.8	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3462246-1 10/17/19 15:27

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	5510	↓	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1148878-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1148878-01 10/17/19 16:23 • (DUP) R3462246-3 10/17/19 16:30

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	570000	572000	1	0.322		20

Sample Narrative:

OS: Endpoint pH 4.5 HEADSPACE

DUP: Endpoint pH 4.5

L1149219-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1149219-04 10/17/19 18:27 • (DUP) R3462246-6 10/17/19 18:34

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	351000	353000	1	0.456		20

Sample Narrative:

OS: Endpoint pH 4.5 HEADSPACE

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3462246-5 10/17/19 16:51

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	101000	101	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3460365-1 10/11/19 09:54

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Chloride	U		51.9	1000
Nitrate	U		22.7	100
Sulfate	U		77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1148852-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1148852-05 10/11/19 17:36 • (DUP) R3460365-3 10/11/19 17:53

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	ND	213	1	0.000		15
Nitrate	ND	0.000	1	0.000		15
Sulfate	ND	0.000	1	0.000		15

L1148902-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1148902-01 10/11/19 22:53 • (DUP) R3460365-6 10/11/19 23:11

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	37500	37300	1	0.490		15
Nitrate	170	168	1	1.54		15
Sulfate	8290	8280	1	0.0821		15

Laboratory Control Sample (LCS)

(LCS) R3460365-2 10/11/19 10:11

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Chloride	40000	38700	96.7	80.0-120	
Nitrate	8000	7920	99.0	80.0-120	
Sulfate	40000	39300	98.4	80.0-120	



L1148854-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1148854-01 10/11/19 18:11 • (MS) R3460365-4 10/11/19 18:29 • (MSD) R3460365-5 10/11/19 18:46

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	343000	375000	376000	65.5	65.7	1	80.0-120	EV	EV	0.0306	15
Nitrate	5000	ND	4860	4950	97.3	99.0	1	80.0-120			1.77	15
Sulfate	50000	ND	52100	51900	98.3	98.1	1	80.0-120			0.235	15

L1148902-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1148902-02 10/11/19 23:28 • (MS) R3460365-7 10/11/19 23:46

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	25000	73000	96.1	1	80.0-120	
Nitrate	5000	U	4850	97.0	1	80.0-120	
Sulfate	50000	1490	50100	97.2	1	80.0-120	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3461010-1 10/13/19 17:37

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	662	↓	102	1000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1148464-41 Original Sample (OS) • Duplicate (DUP)

(OS) L1148464-41 10/13/19 19:54 • (DUP) R3461010-3 10/13/19 20:12

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	ND	640	1	11.4	↓	20

L1148844-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1148844-06 10/14/19 00:29 • (DUP) R3461010-6 10/14/19 00:50

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	27900	28400	1	1.67		20

Laboratory Control Sample (LCS)

(LCS) R3461010-2 10/13/19 18:20

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC (Total Organic Carbon)	75000	77100	103	85.0-115	

L1148844-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1148844-04 10/13/19 23:08 • (MS) R3461010-4 10/13/19 23:29 • (MSD) R3461010-5 10/13/19 23:50

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	4760	56900	55100	104	101	1	80.0-120			3.30	20

L1148900-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1148900-04 10/14/19 03:05 • (MS) R3461010-7 10/14/19 03:26 • (MSD) R3461010-8 10/14/19 03:49

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	5310	57700	57900	105	105	1	80.0-120			0.380	20



Method Blank (MB)

(MB) R3461834-1 10/16/19 22:15

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Iron	U		15.0	100
Manganese	0.691	J	0.250	5.00

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3461834-2 10/16/19 22:18 • (LCSD) R3461834-3 10/16/19 22:21

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Iron	5000	4820	4870	96.5	97.4	80.0-120			1.00	20
Manganese	50.0	48.6	48.7	97.3	97.3	80.0-120			0.0807	20

5 Sr

6 Qc

L1148780-22 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1148780-22 10/16/19 22:25 • (MS) R3461834-5 10/16/19 22:31 • (MSD) R3461834-6 10/16/19 22:35

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Iron	5000	ND	4660	5000	93.2	100	1	75.0-125			6.96	20
Manganese	50.0	20.3	65.8	69.2	91.1	97.9	1	75.0-125			5.01	20

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3460900-1 10/14/19 15:05

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1148844-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1148844-02 10/14/19 15:17 • (DUP) R3460900-2 10/14/19 16:06

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	5560	5470	1	1.51		20
Ethane	141	138	1	2.40		20
Ethene	17.6	17.1	1	3.01		20

L1149259-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1149259-01 10/14/19 16:43 • (DUP) R3460900-3 10/14/19 16:48

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	2030	2050	1	1.19		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3460900-4 10/14/19 16:59 • (LCSD) R3460900-5 10/14/19 17:05

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	76.9	73.6	113	109	85.0-115			4.36	20
Ethane	129	134	130	104	101	85.0-115			2.75	20
Ethene	127	140	136	110	107	85.0-115			2.68	20



Method Blank (MB)

(MB) R3462928-3 10/19/19 12:46

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3462928-3 10/19/19 12:46

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	112			80.0-120
(S) 4-Bromofluorobenzene	109			77.0-126
(S) 1,2-Dichloroethane-d4	96.0			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3462928-1 10/19/19 11:45

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Acetone	125	140	112	19.0-160	
Acrylonitrile	125	141	113	55.0-149	
Benzene	25.0	23.7	94.8	70.0-123	
Bromobenzene	25.0	20.6	82.4	73.0-121	
Bromodichloromethane	25.0	24.0	96.0	75.0-120	
Bromochloromethane	25.0	27.3	109	76.0-122	
Bromoform	25.0	29.5	118	68.0-132	
Bromomethane	25.0	25.4	102	10.0-160	
n-Butylbenzene	25.0	22.2	88.8	73.0-125	
sec-Butylbenzene	25.0	23.1	92.4	75.0-125	
tert-Butylbenzene	25.0	25.0	100	76.0-124	
Carbon disulfide	25.0	23.8	95.2	61.0-128	
Carbon tetrachloride	25.0	28.4	114	68.0-126	
Chlorobenzene	25.0	27.2	109	80.0-121	
Chlorodibromomethane	25.0	29.5	118	77.0-125	
Chloroethane	25.0	25.7	103	47.0-150	
Chloroform	25.0	22.5	90.0	73.0-120	
Chloromethane	25.0	25.5	102	41.0-142	
2-Chlorotoluene	25.0	22.2	88.8	76.0-123	
4-Chlorotoluene	25.0	22.2	88.8	75.0-122	
1,2-Dibromo-3-Chloropropane	25.0	25.2	101	58.0-134	
1,2-Dibromoethane	25.0	26.1	104	80.0-122	
Dibromomethane	25.0	26.1	104	80.0-120	
1,2-Dichlorobenzene	25.0	24.9	99.6	79.0-121	
1,3-Dichlorobenzene	25.0	24.5	98.0	79.0-120	
1,4-Dichlorobenzene	25.0	22.7	90.8	79.0-120	
Dichlorodifluoromethane	25.0	25.7	103	51.0-149	
1,1-Dichloroethane	25.0	24.6	98.4	70.0-126	
1,2-Dichloroethane	25.0	23.5	94.0	70.0-128	
1,1-Dichloroethene	25.0	26.1	104	71.0-124	
cis-1,2-Dichloroethene	25.0	25.4	102	73.0-120	
trans-1,2-Dichloroethene	25.0	24.6	98.4	73.0-120	
1,2-Dichloropropane	25.0	24.9	99.6	77.0-125	
1,1-Dichloropropene	25.0	24.8	99.2	74.0-126	
1,3-Dichloropropane	25.0	25.7	103	80.0-120	
cis-1,3-Dichloropropene	25.0	24.9	99.6	80.0-123	
trans-1,3-Dichloropropene	25.0	26.3	105	78.0-124	
trans-1,4-Dichloro-2-butene	25.0	23.5	94.0	33.0-144	
2,2-Dichloropropane	25.0	25.8	103	58.0-130	
Di-isopropyl ether	25.0	26.2	105	58.0-138	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3462928-1 10/19/19 11:45

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Ethylbenzene	25.0	26.0	104	79.0-123	
Hexachloro-1,3-butadiene	25.0	23.6	94.4	54.0-138	
2-Hexanone	125	141	113	67.0-149	
n-Hexane	25.0	26.6	106	57.0-133	
Iodomethane	125	139	111	33.0-147	
Isopropylbenzene	25.0	28.4	114	76.0-127	
p-Isopropyltoluene	25.0	24.2	96.8	76.0-125	
2-Butanone (MEK)	125	139	111	44.0-160	
Methylene Chloride	25.0	23.6	94.4	67.0-120	
4-Methyl-2-pentanone (MIBK)	125	147	118	68.0-142	
Methyl tert-butyl ether	25.0	25.5	102	68.0-125	
Naphthalene	25.0	23.7	94.8	54.0-135	
n-Propylbenzene	25.0	22.8	91.2	77.0-124	
Styrene	25.0	28.1	112	73.0-130	
1,1,1,2-Tetrachloroethane	25.0	29.7	119	75.0-125	
1,1,2,2-Tetrachloroethane	25.0	22.7	90.8	65.0-130	
1,1,2-Trichlorotrifluoroethane	25.0	28.0	112	69.0-132	
Tetrachloroethene	25.0	28.6	114	72.0-132	
Toluene	25.0	25.6	102	79.0-120	
1,2,3-Trichlorobenzene	25.0	23.1	92.4	50.0-138	
1,2,4-Trichlorobenzene	25.0	23.0	92.0	57.0-137	
1,1,1-Trichloroethane	25.0	26.0	104	73.0-124	
1,1,2-Trichloroethane	25.0	26.7	107	80.0-120	
Trichloroethene	25.0	27.0	108	78.0-124	
Trichlorofluoromethane	25.0	27.4	110	59.0-147	
1,2,3-Trichloropropane	25.0	22.8	91.2	73.0-130	
1,2,4-Trimethylbenzene	25.0	22.8	91.2	76.0-121	
1,2,3-Trimethylbenzene	25.0	21.9	87.6	77.0-120	
1,3,5-Trimethylbenzene	25.0	23.4	93.6	76.0-122	
Vinyl acetate	125	149	119	11.0-160	
Vinyl chloride	25.0	26.6	106	67.0-131	
Xylenes, Total	75.0	81.4	109	79.0-123	
(S) Toluene-d8			112	80.0-120	
(S) 4-Bromofluorobenzene			109	77.0-126	
(S) 1,2-Dichloroethane-d4			106	70.0-130	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3463319-2 10/21/19 10:16

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
cis-1,2-Dichloroethene	U		0.0933	0.500
Ethylbenzene	U		0.158	0.500
Naphthalene	0.191	↓	0.174	2.50
n-Propylbenzene	U		0.162	0.500
Tetrachloroethene	U		0.199	0.500
Trichloroethene	U		0.153	0.500
(S) Toluene-d8	113			80.0-120
(S) 4-Bromofluorobenzene	90.0			77.0-126
(S) 1,2-Dichloroethane-d4	94.7			70.0-130

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS)

(LCS) R3463319-1 10/21/19 09:35

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
cis-1,2-Dichloroethene	25.0	21.8	87.2	73.0-120	
Ethylbenzene	25.0	22.0	88.0	79.0-123	
Naphthalene	25.0	13.9	55.6	54.0-135	
n-Propylbenzene	25.0	30.5	122	77.0-124	
Tetrachloroethene	25.0	22.4	89.6	72.0-132	
Trichloroethene	25.0	22.6	90.4	78.0-124	
(S) Toluene-d8			107	80.0-120	
(S) 4-Bromofluorobenzene			93.1	77.0-126	
(S) 1,2-Dichloroethane-d4			101	70.0-130	



Method Blank (MB)

(MB) R3463386-2 10/20/19 20:35

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3463386-2 10/20/19 20:35

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	0.266	U	0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	8.25	U	0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	1.03	U	0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	0.416	U	0.164	0.500
1,2,4-Trichlorobenzene	0.361	U	0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	95.5			80.0-120
(S) 4-Bromofluorobenzene	93.4			77.0-126
(S) 1,2-Dichloroethane-d4	81.4			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3463386-1 10/20/19 19:55

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Acetone	125	96.7	77.4	19.0-160	
Acrylonitrile	125	101	80.8	55.0-149	
Benzene	25.0	23.8	95.2	70.0-123	
Bromobenzene	25.0	26.2	105	73.0-121	
Bromodichloromethane	25.0	23.0	92.0	75.0-120	
Bromochloromethane	25.0	25.2	101	76.0-122	
Bromoform	25.0	23.6	94.4	68.0-132	
Bromomethane	25.0	24.1	96.4	10.0-160	
n-Butylbenzene	25.0	28.7	115	73.0-125	
sec-Butylbenzene	25.0	27.3	109	75.0-125	
tert-Butylbenzene	25.0	25.9	104	76.0-124	
Carbon disulfide	25.0	23.9	95.6	61.0-128	
Carbon tetrachloride	25.0	22.2	88.8	68.0-126	
Chlorobenzene	25.0	24.8	99.2	80.0-121	
Chlorodibromomethane	25.0	24.5	98.0	77.0-125	
Chloroethane	25.0	23.7	94.8	47.0-150	
Chloroform	25.0	23.4	93.6	73.0-120	
Chloromethane	25.0	22.3	89.2	41.0-142	
2-Chlorotoluene	25.0	25.7	103	76.0-123	
4-Chlorotoluene	25.0	25.1	100	75.0-122	
1,2-Dibromo-3-Chloropropane	25.0	21.5	86.0	58.0-134	
1,2-Dibromoethane	25.0	24.0	96.0	80.0-122	
Dibromomethane	25.0	23.7	94.8	80.0-120	
1,2-Dichlorobenzene	25.0	28.6	114	79.0-121	
1,3-Dichlorobenzene	25.0	29.0	116	79.0-120	
1,4-Dichlorobenzene	25.0	28.1	112	79.0-120	
Dichlorodifluoromethane	25.0	26.5	106	51.0-149	
1,1-Dichloroethane	25.0	22.5	90.0	70.0-126	
1,2-Dichloroethane	25.0	21.1	84.4	70.0-128	
1,1-Dichloroethene	25.0	27.4	110	71.0-124	
cis-1,2-Dichloroethene	25.0	25.2	101	73.0-120	
trans-1,2-Dichloroethene	25.0	24.1	96.4	73.0-120	
1,2-Dichloropropane	25.0	22.3	89.2	77.0-125	
1,1-Dichloropropene	25.0	24.5	98.0	74.0-126	
1,3-Dichloropropane	25.0	25.1	100	80.0-120	
cis-1,3-Dichloropropene	25.0	23.3	93.2	80.0-123	
trans-1,3-Dichloropropene	25.0	23.7	94.8	78.0-124	
trans-1,4-Dichloro-2-butene	25.0	17.4	69.6	33.0-144	
2,2-Dichloropropane	25.0	20.8	83.2	58.0-130	
Di-isopropyl ether	25.0	21.8	87.2	58.0-138	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3463386-1 10/20/19 19:55

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Ethylbenzene	25.0	24.0	96.0	79.0-123	
Hexachloro-1,3-butadiene	25.0	37.4	150	54.0-138	J4
2-Hexanone	125	101	80.8	67.0-149	
n-Hexane	25.0	21.4	85.6	57.0-133	
Iodomethane	125	102	81.6	33.0-147	
Isopropylbenzene	25.0	22.9	91.6	76.0-127	
p-Isopropyltoluene	25.0	28.4	114	76.0-125	
2-Butanone (MEK)	125	87.2	69.8	44.0-160	
Methylene Chloride	25.0	23.6	94.4	67.0-120	
4-Methyl-2-pentanone (MIBK)	125	92.0	73.6	68.0-142	
Methyl tert-butyl ether	25.0	22.1	88.4	68.0-125	
Naphthalene	25.0	20.5	82.0	54.0-135	
n-Propylbenzene	25.0	24.3	97.2	77.0-124	
Styrene	25.0	24.7	98.8	73.0-130	
1,1,1,2-Tetrachloroethane	25.0	24.2	96.8	75.0-125	
1,1,2,2-Tetrachloroethane	25.0	22.5	90.0	65.0-130	
1,1,2-Trichlorotrifluoroethane	25.0	22.9	91.6	69.0-132	
Tetrachloroethene	25.0	25.4	102	72.0-132	
Toluene	25.0	24.0	96.0	79.0-120	
1,2,3-Trichlorobenzene	25.0	27.8	111	50.0-138	
1,2,4-Trichlorobenzene	25.0	31.4	126	57.0-137	
1,1,1-Trichloroethane	25.0	22.1	88.4	73.0-124	
1,1,2-Trichloroethane	25.0	23.3	93.2	80.0-120	
Trichloroethene	25.0	24.2	96.8	78.0-124	
Trichlorofluoromethane	25.0	25.9	104	59.0-147	
1,2,3-Trichloropropane	25.0	22.7	90.8	73.0-130	
1,2,4-Trimethylbenzene	25.0	25.1	100	76.0-121	
1,2,3-Trimethylbenzene	25.0	26.0	104	77.0-120	
1,3,5-Trimethylbenzene	25.0	24.9	99.6	76.0-122	
Vinyl acetate	125	105	84.0	11.0-160	
Vinyl chloride	25.0	26.9	108	67.0-131	
Xylenes, Total	75.0	73.3	97.7	79.0-123	
(S) Toluene-d8			93.7	80.0-120	
(S) 4-Bromofluorobenzene			90.1	77.0-126	
(S) 1,2-Dichloroethane-d4			84.9	70.0-130	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



L1148900-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1148900-03 10/20/19 23:18 • (MS) R3463386-3 10/21/19 00:16 • (MSD) R3463386-4 10/21/19 00:36

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acetone	125	U	77.0	85.5	61.6	68.4	1	10.0-160			10.5	35
Acrylonitrile	125	U	95.0	104	76.0	83.2	1	21.0-160			9.05	32
Benzene	25.0	U	21.6	22.5	86.4	90.0	1	17.0-158			4.08	27
Bromobenzene	25.0	U	23.9	25.8	95.6	103	1	30.0-149			7.65	28
Bromodichloromethane	25.0	U	21.0	21.9	84.0	87.6	1	31.0-150			4.20	27
Bromochloromethane	25.0	U	22.4	22.8	89.6	91.2	1	38.0-142			1.77	26
Bromoform	25.0	U	21.6	24.3	86.4	97.2	1	29.0-150			11.8	29
Bromomethane	25.0	U	18.9	19.9	75.6	79.6	1	10.0-160			5.15	38
n-Butylbenzene	25.0	U	26.1	27.5	104	110	1	31.0-150			5.22	30
sec-Butylbenzene	25.0	U	24.5	26.3	98.0	105	1	33.0-155			7.09	29
tert-Butylbenzene	25.0	U	23.6	25.1	94.4	100	1	34.0-153			6.16	28
Carbon disulfide	25.0	U	20.2	21.1	80.8	84.4	1	10.0-156			4.36	28
Carbon tetrachloride	25.0	U	20.5	21.3	82.0	85.2	1	23.0-159			3.83	28
Chlorobenzene	25.0	U	22.5	24.3	90.0	97.2	1	33.0-152			7.69	27
Chlorodibromomethane	25.0	U	22.8	24.8	91.2	99.2	1	37.0-149			8.40	27
Chloroethane	25.0	U	21.5	21.9	86.0	87.6	1	10.0-160			1.84	30
Chloroform	25.0	U	21.1	21.8	84.4	87.2	1	29.0-154			3.26	28
Chloromethane	25.0	U	19.6	20.0	78.4	80.0	1	10.0-160			2.02	29
2-Chlorotoluene	25.0	U	23.6	25.1	94.4	100	1	32.0-153			6.16	28
4-Chlorotoluene	25.0	U	22.7	24.3	90.8	97.2	1	32.0-150			6.81	28
1,2-Dibromo-3-Chloropropane	25.0	U	19.4	22.6	77.6	90.4	1	22.0-151			15.2	34
1,2-Dibromoethane	25.0	U	21.7	23.2	86.8	92.8	1	34.0-147			6.68	27
Dibromomethane	25.0	U	21.7	22.3	86.8	89.2	1	30.0-151			2.73	27
1,2-Dichlorobenzene	25.0	U	25.6	28.2	102	113	1	34.0-149			9.67	28
1,3-Dichlorobenzene	25.0	U	26.0	28.0	104	112	1	36.0-146			7.41	27
1,4-Dichlorobenzene	25.0	U	26.0	27.4	104	110	1	35.0-142			5.24	27
Dichlorodifluoromethane	25.0	U	23.8	24.1	95.2	96.4	1	10.0-160			1.25	29
1,1-Dichloroethane	25.0	U	20.4	20.8	81.6	83.2	1	25.0-158			1.94	27
1,2-Dichloroethane	25.0	U	19.3	20.3	77.2	81.2	1	29.0-151			5.05	27
1,1-Dichloroethene	25.0	U	24.6	25.9	98.4	104	1	11.0-160			5.15	29
cis-1,2-Dichloroethene	25.0	U	22.6	23.6	90.4	94.4	1	10.0-160			4.33	27
trans-1,2-Dichloroethene	25.0	U	21.8	22.8	87.2	91.2	1	17.0-153			4.48	27
1,2-Dichloropropane	25.0	0.253	20.7	21.4	81.8	84.6	1	30.0-156			3.33	27
1,1-Dichloropropene	25.0	U	22.2	22.8	88.8	91.2	1	25.0-158			2.67	27
1,3-Dichloropropane	25.0	U	22.9	25.2	91.6	101	1	38.0-147			9.56	27
cis-1,3-Dichloropropene	25.0	U	20.3	20.7	81.2	82.8	1	34.0-149			1.95	28
trans-1,3-Dichloropropene	25.0	U	21.3	22.8	85.2	91.2	1	32.0-149			6.80	28
trans-1,4-Dichloro-2-butene	25.0	U	14.8	15.7	59.2	62.8	1	10.0-157			5.90	37
2,2-Dichloropropane	25.0	U	17.6	16.6	70.4	66.4	1	24.0-152			5.85	29
Di-isopropyl ether	25.0	U	20.0	20.9	80.0	83.6	1	21.0-160			4.40	28

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



L1148900-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1148900-03 10/20/19 23:18 • (MS) R3463386-3 10/21/19 00:16 • (MSD) R3463386-4 10/21/19 00:36

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Ethylbenzene	25.0	U	22.4	24.1	89.6	96.4	1	30.0-155			7.31	27
Hexachloro-1,3-butadiene	25.0	U	32.9	36.6	132	146	1	20.0-154			10.6	34
2-Hexanone	125	U	92.3	106	73.8	84.8	1	21.0-160			13.8	29
n-Hexane	25.0	U	20.0	20.5	80.0	82.0	1	10.0-153			2.47	28
Iodomethane	125	U	83.1	78.2	66.5	62.6	1	10.0-160			6.08	40
Isopropylbenzene	25.0	U	20.7	22.4	82.8	89.6	1	28.0-157			7.89	27
p-Isopropyltoluene	25.0	U	25.7	27.5	103	110	1	30.0-154			6.77	29
2-Butanone (MEK)	125	U	79.6	86.9	63.7	69.5	1	10.0-160			8.77	32
Methylene Chloride	25.0	U	21.4	22.6	85.6	90.4	1	23.0-144			5.45	28
4-Methyl-2-pentanone (MIBK)	125	U	86.2	98.4	69.0	78.7	1	29.0-160			13.2	29
Methyl tert-butyl ether	25.0	U	20.0	21.0	80.0	84.0	1	28.0-150			4.88	29
Naphthalene	25.0	0.886	18.0	21.3	68.5	81.7	1	12.0-156			16.8	35
n-Propylbenzene	25.0	U	22.3	23.6	89.2	94.4	1	31.0-154			5.66	28
Styrene	25.0	U	22.4	24.5	89.6	98.0	1	33.0-155			8.96	28
1,1,1,2-Tetrachloroethane	25.0	U	22.2	24.5	88.8	98.0	1	36.0-151			9.85	29
1,1,2,2-Tetrachloroethane	25.0	U	21.1	24.6	84.4	98.4	1	33.0-150			15.3	28
1,1,2-Trichlorotrifluoroethane	25.0	U	22.6	22.7	90.4	90.8	1	23.0-160			0.442	30
Tetrachloroethene	25.0	U	23.6	25.0	94.4	100	1	10.0-160			5.76	27
Toluene	25.0	U	22.2	23.7	88.8	94.8	1	26.0-154			6.54	28
1,2,3-Trichlorobenzene	25.0	U	24.8	28.4	99.2	114	1	17.0-150			13.5	36
1,2,4-Trichlorobenzene	25.0	U	28.0	31.7	112	127	1	24.0-150			12.4	33
1,1,1-Trichloroethane	25.0	U	20.3	20.9	81.2	83.6	1	23.0-160			2.91	28
1,1,2-Trichloroethane	25.0	U	22.0	24.0	88.0	96.0	1	35.0-147			8.70	27
Trichloroethene	25.0	0.167	21.3	22.4	84.5	88.9	1	10.0-160			5.03	25
Trichlorofluoromethane	25.0	U	24.2	24.5	96.8	98.0	1	17.0-160			1.23	31
1,2,3-Trichloropropane	25.0	U	22.1	25.0	88.4	100	1	34.0-151			12.3	29
1,2,4-Trimethylbenzene	25.0	U	23.3	24.5	93.2	98.0	1	26.0-154			5.02	27
1,2,3-Trimethylbenzene	25.0	U	24.1	25.8	96.4	103	1	32.0-149			6.81	28
1,3,5-Trimethylbenzene	25.0	U	22.8	24.0	91.2	96.0	1	28.0-153			5.13	27
Vinyl acetate	125	U	109	117	87.2	93.6	1	12.0-160			7.08	31
Vinyl chloride	25.0	U	23.2	23.9	92.8	95.6	1	10.0-160			2.97	27
Xylenes, Total	75.0	U	66.5	71.6	88.7	95.5	1	29.0-154			7.39	28
(S) Toluene-d8					94.5	99.2		80.0-120				
(S) 4-Bromofluorobenzene					92.1	95.1		77.0-126				
(S) 1,2-Dichloroethane-d4					81.8	79.6		70.0-130				

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration method criteria.
J4	The associated batch QC was outside the established quality control range for accuracy.
V	The sample concentration is too high to evaluate accurate spike recoveries.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

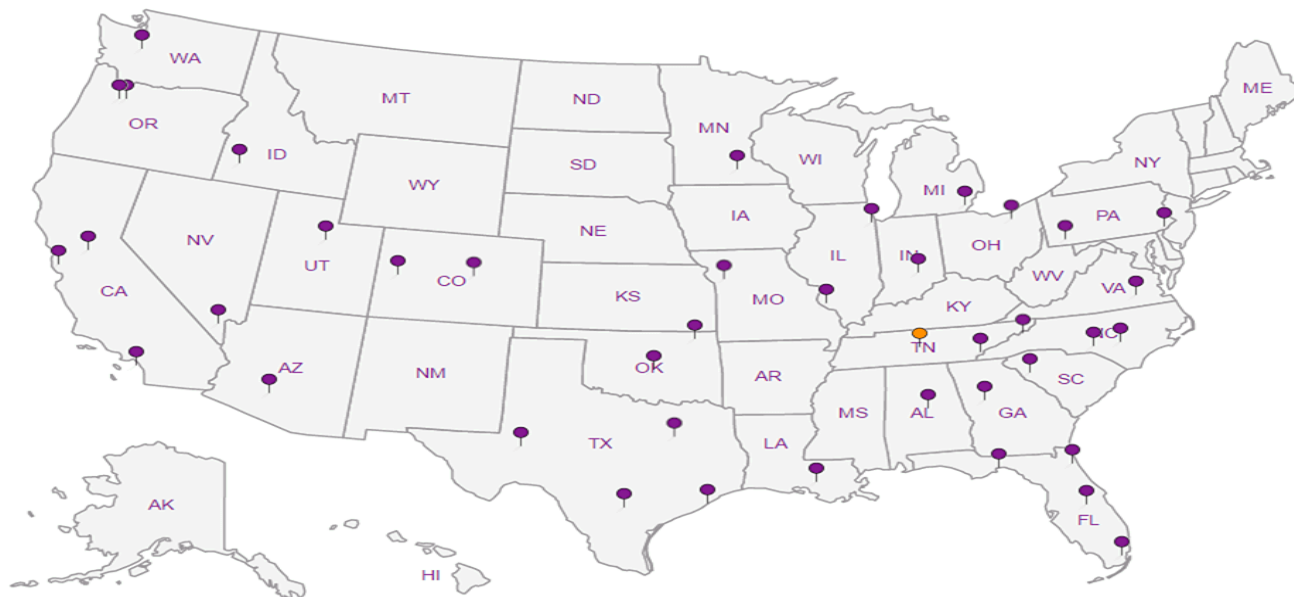
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

PES-Seattle
 Billing Information: PES-Seattle
 Pres Chk

Report to: Bill Haldeman/Brian O'neal
 Email To: on file

Project Description: American Liven
 City/State: Seattle, WA
 Collected:

Phone: on file
 Client Project #: 1413.001.02.501E
 Lab Project #: PESENVSWA-ALP
 Fax: 1413.001.05.601

Collected by (print): Ben Hecht
 Site/Facility ID #: American Liven
 P.O. #

Collected by (signature): [Signature]
 Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day
 Date Results Needed: STAT
 No. of Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	**NO3, SO4, Chloride** 48 hour hold	NWTPHGX	VOCs (V8260LLC)	Total Fe Mn 6020 L2	TOC	Alkalinity	EEM (RSK175LL)
MW-314-101019	Grab	GW	72	10-10-19	0835	9	X	X	X	X	X	X	X
SCL-MW 105-101019		GW	25'		0950	3	X	X	X	X	X	X	X
MW-8-101019		GW	16		10:30	5	X	X	X	X	X	X	X
MW-311-101019		GW	68'		1120	9	X	X	X	X	X	X	X
SCS-2-101019		GW	20		1135	3	X	X	X	X	X	X	X
MW108-101019		GW	45		1245	9	X	X	X	X	X	X	X
MW-313-101019		GW	26.5		14.15	9	X	X	X	X	X	X	X
MW-310-101019		GW	20		1345	9	X	X	X	X	X	X	X
MW 119-101019		GW	40		1535	9	X	X	X	X	X	X	X
TRIP-101019	-	GW	-		1600	1	X	X	X	X	X	X	X

* Matrix: SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks: pH _____ Temp _____
 Flow _____ Other _____

Samples returned via: UPS FedEx Courier
 Tracking #: FedEx 1203 5774 6561

Sample Receipt Checklist

COC Seal Present/Intact: Y N
 COC Signed/Accurate: Y N
 Bottles arrive intact: Y N
 Correct bottles used: Y N
 Sufficient volume sent: Y N
 If Applicable
 VOA Zero Headspace: Y N
 Preservation Correct/Checked: Y N

Relinquished by: (Signature) [Signature] Date: 10-10-19 Time: 1645
 Received by: (Signature) Trip Blank Received: Yes/No HCL/MeOH TBR

Relinquished by: (Signature) Date: Time: Received by: (Signature) Temp: 12.0°C Bottles Received: 65
 If preservation required by Login: Date/Time

Relinquished by: (Signature) Date: Time: Received for lab by: (Signature) Date: 10/11/19 Time: 8:45
 Hold: Condition: NCF / OK

Chain of Custody Page ___ of ___

Pace Analytical
 National Center for Testing & Innovation

12065 Lebanon Rd
 Mount Juliet, TN 37122
 Phone: 615-758-5858
 Phone: 800-767-5859
 Fax: 615-758-5859



L# L1148960
C195

Acctnum: PESENVSWA
 Template:
 Prelogin:
 TSR: Brian Ford
 PB:
 Shipped Via:
 Remarks Sample # (lab only)

Remarks	Sample # (lab only)
No Gx	-01
	02
QA/QC	03
	04
	05
	06
	07
	08
	09
	10

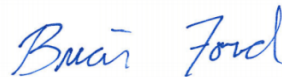
RAD SCREEN: < 0.5 mR/hr

PES Environmental, Inc.- WA

Sample Delivery Group: L1149387
Samples Received: 10/12/2019
Project Number: 1413.001.02.501E
Description: American Linen

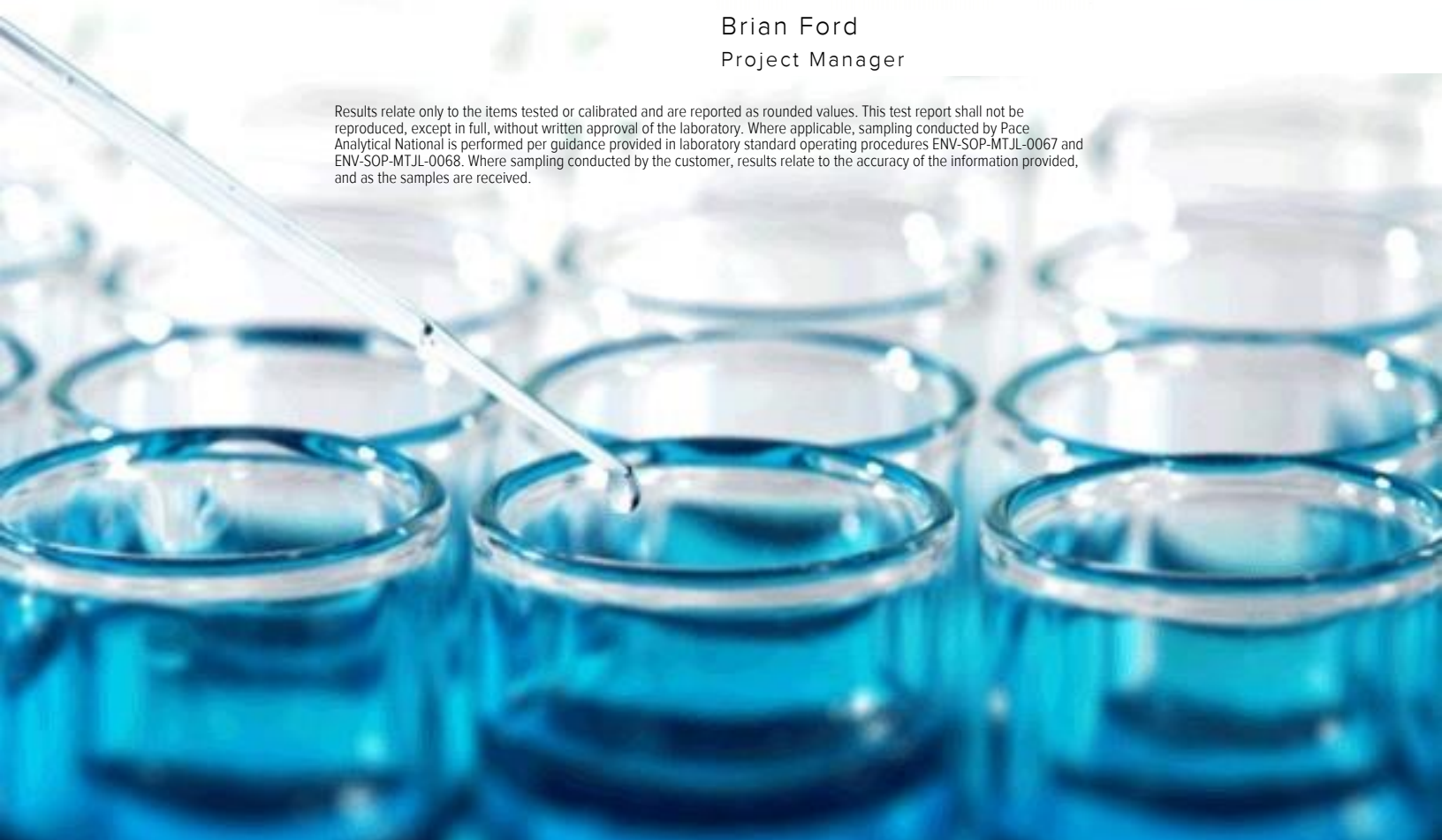
Report To: Brian O'Neal/Bill Haldeman
1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





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SAMPLE SUMMARY



MW-916-101119 L1149387-01 GW

Collected by
KZ/BH/HC Collected date/time
10/11/19 08:00 Received date/time
10/12/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365100	2.5	10/19/19 16:55	10/19/19 16:55	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1361957	1	10/12/19 19:01	10/12/19 19:01	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364227	1	10/16/19 19:57	10/16/19 19:57	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364591	1	10/18/19 10:15	10/18/19 13:17	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1363432	10	10/16/19 11:54	10/16/19 11:54	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 08:47	10/21/19 08:47	BMB	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

SMW-3-101119 L1149387-02 GW

Collected by
KZ/BH/HC Collected date/time
10/11/19 09:45 Received date/time
10/12/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 09:06	10/21/19 09:06	BMB	Mt. Juliet, TN

MW128-101119 L1149387-03 GW

Collected by
KZ/BH/HC Collected date/time
10/11/19 10:45 Received date/time
10/12/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365100	2.5	10/19/19 17:05	10/19/19 17:05	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1361957	1	10/12/19 19:18	10/12/19 19:18	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364227	1	10/16/19 20:15	10/16/19 20:15	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364591	1	10/18/19 10:15	10/18/19 13:20	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1363429	10	10/16/19 14:53	10/16/19 14:53	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1363432	1	10/16/19 12:05	10/16/19 12:05	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 09:26	10/21/19 09:26	BMB	Mt. Juliet, TN

MW124-101119 L1149387-04 GW

Collected by
KZ/BH/HC Collected date/time
10/11/19 11:11 Received date/time
10/12/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365100	1	10/19/19 17:13	10/19/19 17:13	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1361957	1	10/12/19 19:34	10/12/19 19:34	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364227	1	10/16/19 20:32	10/16/19 20:32	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364591	1	10/18/19 10:15	10/18/19 13:24	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1363461	1	10/16/19 16:01	10/16/19 16:01	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1363432	1	10/16/19 13:29	10/16/19 13:29	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 09:46	10/21/19 09:46	BMB	Mt. Juliet, TN

MW-307-101119 L1149387-05 GW

Collected by
KZ/BH/HC Collected date/time
10/11/19 11:35 Received date/time
10/12/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365100	1	10/19/19 17:21	10/19/19 17:21	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1361957	1	10/12/19 19:51	10/12/19 19:51	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364227	1	10/16/19 20:50	10/16/19 20:50	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364591	1	10/18/19 10:15	10/18/19 13:27	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1363461	1	10/16/19 16:25	10/16/19 16:25	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1363432	1	10/16/19 13:00	10/16/19 13:00	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 10:05	10/21/19 10:05	BMB	Mt. Juliet, TN

SAMPLE SUMMARY



MW-214-101119 L1149387-06 GW

Collected by
KZ/BH/HC
Collected date/time
10/11/19 12:15
Received date/time
10/12/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 10:25	10/21/19 10:25	BMB	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

MW-312-101119 L1149387-07 GW

Collected by
KZ/BH/HC
Collected date/time
10/11/19 13:50
Received date/time
10/12/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365100	2.5	10/19/19 17:30	10/19/19 17:30	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1361957	1	10/12/19 20:07	10/12/19 20:07	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364227	1	10/16/19 21:13	10/16/19 21:13	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364591	1	10/18/19 10:15	10/18/19 13:30	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1363432	1	10/16/19 13:02	10/16/19 13:02	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 10:45	10/21/19 10:45	BMB	Mt. Juliet, TN

MW-308-101119 L1149387-08 GW

Collected by
KZ/BH/HC
Collected date/time
10/11/19 14:55
Received date/time
10/12/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365100	2.5	10/19/19 17:37	10/19/19 17:37	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1361957	1	10/12/19 20:23	10/12/19 20:23	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364227	1	10/16/19 21:34	10/16/19 21:34	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364591	1	10/18/19 10:15	10/18/19 13:34	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1363432	1	10/16/19 13:05	10/16/19 13:05	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 11:04	10/21/19 11:04	BMB	Mt. Juliet, TN

EQ-101119 L1149387-09 GW

Collected by
KZ/BH/HC
Collected date/time
10/11/19 14:40
Received date/time
10/12/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365100	1	10/19/19 17:53	10/19/19 17:53	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1361957	1	10/12/19 21:29	10/12/19 21:29	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364227	1	10/16/19 23:27	10/16/19 23:27	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364591	1	10/18/19 10:15	10/18/19 13:37	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1363461	1	10/16/19 16:49	10/16/19 16:49	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1363432	1	10/16/19 13:07	10/16/19 13:07	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 11:24	10/21/19 11:24	BMB	Mt. Juliet, TN

TRIP-101119 L1149387-10 GW

Collected by
KZ/BH/HC
Collected date/time
10/11/19 16:00
Received date/time
10/12/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1363461	1	10/16/19 13:22	10/16/19 13:22	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 08:27	10/21/19 08:27	BMB	Mt. Juliet, TN



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

Sample Delivery Group (SDG) Narrative

VOC pH outside of method requirement.

<u>Lab Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L1149387-04	MW124-101119	8260C
L1149387-05	MW-307-101119	8260C
L1149387-07	MW-312-101119	8260C

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	828000		6780	50000	2.5	10/19/2019 16:55	WG1365100

Sample Narrative:

L1149387-01 WG1365100: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	21400		51.9	1000	1	10/12/2019 19:01	WG1361957
Nitrate	U		22.7	100	1	10/12/2019 19:01	WG1361957
Sulfate	14000		77.4	5000	1	10/12/2019 19:01	WG1361957

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	4420		102	1000	1	10/16/2019 19:57	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	8740		15.0	100	1	10/18/2019 13:17	WG1364591
Manganese	218		0.250	5.00	1	10/18/2019 13:17	WG1364591

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	10100		2.87	6.78	10	10/16/2019 11:54	WG1363432
Ethane	U		2.96	12.9	10	10/16/2019 11:54	WG1363432
Ethene	U		4.22	12.7	10	10/16/2019 11:54	WG1363432

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U	JO	1.05	25.0	1	10/21/2019 08:47	WG1366365
Acrylonitrile	U	JO	0.873	5.00	1	10/21/2019 08:47	WG1366365
Benzene	1.34		0.0896	0.500	1	10/21/2019 08:47	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 08:47	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 08:47	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 08:47	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 08:47	WG1366365
Bromomethane	U	JO	0.157	2.50	1	10/21/2019 08:47	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 08:47	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 08:47	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 08:47	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 08:47	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 08:47	WG1366365
Chlorobenzene	U		0.140	0.500	1	10/21/2019 08:47	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 08:47	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 08:47	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 08:47	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 08:47	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 08:47	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 08:47	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/11/19 08:00

L1149387

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 08:47	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 08:47	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 08:47	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 08:47	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 08:47	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 08:47	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 08:47	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 08:47	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 08:47	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 08:47	WG1366365
cis-1,2-Dichloroethene	0.841		0.0933	0.500	1	10/21/2019 08:47	WG1366365
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 08:47	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 08:47	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 08:47	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 08:47	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 08:47	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 08:47	WG1366365
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/21/2019 08:47	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 08:47	WG1366365
Di-isopropyl ether	0.137	J	0.0924	0.500	1	10/21/2019 08:47	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 08:47	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 08:47	WG1366365
2-Hexanone	U	JO	0.757	5.00	1	10/21/2019 08:47	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 08:47	WG1366365
Iodomethane	U	JO	0.377	10.0	1	10/21/2019 08:47	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 08:47	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 08:47	WG1366365
2-Butanone (MEK)	U	JO	1.28	5.00	1	10/21/2019 08:47	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 08:47	WG1366365
4-Methyl-2-pentanone (MIBK)	U	JO	0.823	5.00	1	10/21/2019 08:47	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 08:47	WG1366365
Naphthalene	U	JO	0.174	2.50	1	10/21/2019 08:47	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 08:47	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 08:47	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 08:47	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 08:47	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 08:47	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 08:47	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 08:47	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 08:47	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 08:47	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 08:47	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 08:47	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 08:47	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 08:47	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 08:47	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 08:47	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 08:47	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 08:47	WG1366365
Vinyl acetate	U	JO	0.645	5.00	1	10/21/2019 08:47	WG1366365
Vinyl chloride	24.1		0.118	0.500	1	10/21/2019 08:47	WG1366365
Xylenes, Total	U		0.316	1.50	1	10/21/2019 08:47	WG1366365
(S) Toluene-d8	95.6			80.0-120		10/21/2019 08:47	WG1366365
(S) 4-Bromofluorobenzene	88.4			77.0-126		10/21/2019 08:47	WG1366365
(S) 1,2-Dichloroethane-d4	83.8			70.0-130		10/21/2019 08:47	WG1366365

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U	<u>JO</u>	1.05	25.0	1	10/21/2019 09:06	WG1366365
Acrylonitrile	U	<u>JO</u>	0.873	5.00	1	10/21/2019 09:06	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 09:06	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 09:06	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 09:06	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 09:06	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 09:06	WG1366365
Bromomethane	U	<u>JO</u>	0.157	2.50	1	10/21/2019 09:06	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 09:06	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 09:06	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 09:06	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 09:06	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 09:06	WG1366365
Chlorobenzene	U		0.140	0.500	1	10/21/2019 09:06	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 09:06	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 09:06	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 09:06	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 09:06	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 09:06	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 09:06	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 09:06	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 09:06	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 09:06	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 09:06	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 09:06	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 09:06	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 09:06	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 09:06	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 09:06	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 09:06	WG1366365
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/21/2019 09:06	WG1366365
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 09:06	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 09:06	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 09:06	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 09:06	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 09:06	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 09:06	WG1366365
trans-1,4-Dichloro-2-butene	U	<u>JO</u>	0.257	5.00	1	10/21/2019 09:06	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 09:06	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 09:06	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 09:06	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 09:06	WG1366365
2-Hexanone	U	<u>JO</u>	0.757	5.00	1	10/21/2019 09:06	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 09:06	WG1366365
Iodomethane	U	<u>JO</u>	0.377	10.0	1	10/21/2019 09:06	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 09:06	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 09:06	WG1366365
2-Butanone (MEK)	U	<u>JO</u>	1.28	5.00	1	10/21/2019 09:06	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 09:06	WG1366365
4-Methyl-2-pentanone (MIBK)	U	<u>JO</u>	0.823	5.00	1	10/21/2019 09:06	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 09:06	WG1366365
Naphthalene	U	<u>JO</u>	0.174	2.50	1	10/21/2019 09:06	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 09:06	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 09:06	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 09:06	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 09:06	WG1366365

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 09:06	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 09:06	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 09:06	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 09:06	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 09:06	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 09:06	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 09:06	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 09:06	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 09:06	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 09:06	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 09:06	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 09:06	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 09:06	WG1366365
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/21/2019 09:06	WG1366365
Vinyl chloride	U		0.118	0.500	1	10/21/2019 09:06	WG1366365
Xylenes, Total	U		0.316	1.50	1	10/21/2019 09:06	WG1366365
(S) Toluene-d8	98.3			80.0-120		10/21/2019 09:06	WG1366365
(S) 4-Bromofluorobenzene	91.1			77.0-126		10/21/2019 09:06	WG1366365
(S) 1,2-Dichloroethane-d4	82.2			70.0-130		10/21/2019 09:06	WG1366365

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	746000		6780	50000	2.5	10/19/2019 17:05	WG1365100

Sample Narrative:

L1149387-03 WG1365100: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	22600		51.9	1000	1	10/12/2019 19:18	WG1361957
Nitrate	U		22.7	100	1	10/12/2019 19:18	WG1361957
Sulfate	20900		77.4	5000	1	10/12/2019 19:18	WG1361957

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	4200		102	1000	1	10/16/2019 20:15	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	7950		15.0	100	1	10/18/2019 13:20	WG1364591
Manganese	207		0.250	5.00	1	10/18/2019 13:20	WG1364591

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	13100		2.87	6.78	10	10/16/2019 14:53	WG1363429
Ethane	8.49		0.296	1.29	1	10/16/2019 12:05	WG1363432
Ethene	23.5		0.422	1.27	1	10/16/2019 12:05	WG1363432

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		1.05	25.0	1	10/21/2019 09:26	WG1366365
Acrylonitrile	U	<u>JO</u>	0.873	5.00	1	10/21/2019 09:26	WG1366365
Benzene	0.984		0.0896	0.500	1	10/21/2019 09:26	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 09:26	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 09:26	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 09:26	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 09:26	WG1366365
Bromomethane	U	<u>JO</u>	0.157	2.50	1	10/21/2019 09:26	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 09:26	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 09:26	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 09:26	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 09:26	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 09:26	WG1366365
Chlorobenzene	U		0.140	0.500	1	10/21/2019 09:26	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 09:26	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 09:26	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 09:26	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 09:26	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 09:26	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 09:26	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/11/19 10:45

L1149387

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 09:26	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 09:26	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 09:26	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 09:26	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 09:26	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 09:26	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 09:26	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 09:26	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 09:26	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 09:26	WG1366365
cis-1,2-Dichloroethene	0.619		0.0933	0.500	1	10/21/2019 09:26	WG1366365
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 09:26	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 09:26	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 09:26	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 09:26	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 09:26	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 09:26	WG1366365
trans-1,4-Dichloro-2-butene	U	<u>JO</u>	0.257	5.00	1	10/21/2019 09:26	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 09:26	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 09:26	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 09:26	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 09:26	WG1366365
2-Hexanone	U	<u>JO</u>	0.757	5.00	1	10/21/2019 09:26	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 09:26	WG1366365
Iodomethane	U	<u>JO</u>	0.377	10.0	1	10/21/2019 09:26	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 09:26	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 09:26	WG1366365
2-Butanone (MEK)	U	<u>JO</u>	1.28	5.00	1	10/21/2019 09:26	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 09:26	WG1366365
4-Methyl-2-pentanone (MIBK)	U	<u>JO</u>	0.823	5.00	1	10/21/2019 09:26	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 09:26	WG1366365
Naphthalene	U	<u>JO</u>	0.174	2.50	1	10/21/2019 09:26	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 09:26	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 09:26	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 09:26	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 09:26	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 09:26	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 09:26	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 09:26	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 09:26	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 09:26	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 09:26	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 09:26	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 09:26	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 09:26	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 09:26	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 09:26	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 09:26	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 09:26	WG1366365
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/21/2019 09:26	WG1366365
Vinyl chloride	13.3		0.118	0.500	1	10/21/2019 09:26	WG1366365
Xylenes, Total	U		0.316	1.50	1	10/21/2019 09:26	WG1366365
(S) Toluene-d8	95.1			80.0-120		10/21/2019 09:26	WG1366365
(S) 4-Bromofluorobenzene	90.7			77.0-126		10/21/2019 09:26	WG1366365
(S) 1,2-Dichloroethane-d4	81.2			70.0-130		10/21/2019 09:26	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	152000		2710	20000	1	10/19/2019 17:13	WG1365100

Sample Narrative:

L1149387-04 WG1365100: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	6260		51.9	1000	1	10/12/2019 19:34	WG1361957
Nitrate	U		22.7	100	1	10/12/2019 19:34	WG1361957
Sulfate	5920	B	77.4	5000	1	10/12/2019 19:34	WG1361957

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3780	B	102	1000	1	10/16/2019 20:32	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	2240		15.0	100	1	10/18/2019 13:24	WG1364591
Manganese	301		0.250	5.00	1	10/18/2019 13:24	WG1364591

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/16/2019 16:01	WG1363461
(S) a,a,a-Trifluorotoluene(FID)	108			78.0-120		10/16/2019 16:01	WG1363461

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	12.3		0.287	0.678	1	10/16/2019 13:29	WG1363432
Ethane	U		0.296	1.29	1	10/16/2019 13:29	WG1363432
Ethene	U		0.422	1.27	1	10/16/2019 13:29	WG1363432

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	9.24	J JO	1.05	25.0	1	10/21/2019 09:46	WG1366365
Acrylonitrile	U	JO	0.873	5.00	1	10/21/2019 09:46	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 09:46	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 09:46	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 09:46	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 09:46	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 09:46	WG1366365
Bromomethane	U	JO	0.157	2.50	1	10/21/2019 09:46	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 09:46	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 09:46	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 09:46	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 09:46	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 09:46	WG1366365

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Collected date/time: 10/11/19 11:11

L1149387

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/21/2019 09:46	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 09:46	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 09:46	WG1366365
Chloroform	1.06		0.0860	0.500	1	10/21/2019 09:46	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 09:46	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 09:46	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 09:46	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 09:46	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 09:46	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 09:46	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 09:46	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 09:46	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 09:46	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 09:46	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 09:46	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 09:46	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 09:46	WG1366365
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/21/2019 09:46	WG1366365
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 09:46	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 09:46	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 09:46	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 09:46	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 09:46	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 09:46	WG1366365
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/21/2019 09:46	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 09:46	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 09:46	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 09:46	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 09:46	WG1366365
2-Hexanone	U	JO	0.757	5.00	1	10/21/2019 09:46	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 09:46	WG1366365
Iodomethane	U	JO	0.377	10.0	1	10/21/2019 09:46	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 09:46	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 09:46	WG1366365
2-Butanone (MEK)	U	JO	1.28	5.00	1	10/21/2019 09:46	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 09:46	WG1366365
4-Methyl-2-pentanone (MIBK)	U	JO	0.823	5.00	1	10/21/2019 09:46	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 09:46	WG1366365
Naphthalene	U	JO	0.174	2.50	1	10/21/2019 09:46	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 09:46	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 09:46	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 09:46	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 09:46	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 09:46	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 09:46	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 09:46	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 09:46	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 09:46	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 09:46	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 09:46	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 09:46	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 09:46	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 09:46	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 09:46	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 09:46	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 09:46	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/21/2019 09:46	WG1366365
Vinyl chloride	U		0.118	0.500	1	10/21/2019 09:46	WG1366365
Xylenes, Total	U		0.316	1.50	1	10/21/2019 09:46	WG1366365
<i>(S) Toluene-d8</i>	97.9			80.0-120		10/21/2019 09:46	WG1366365
<i>(S) 4-Bromofluorobenzene</i>	91.6			77.0-126		10/21/2019 09:46	WG1366365
<i>(S) 1,2-Dichloroethane-d4</i>	84.9			70.0-130		10/21/2019 09:46	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	276000		2710	20000	1	10/19/2019 17:21	WG1365100

Sample Narrative:

L1149387-05 WG1365100: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	14600		51.9	1000	1	10/12/2019 19:51	WG1361957
Nitrate	U		22.7	100	1	10/12/2019 19:51	WG1361957
Sulfate	69100		77.4	5000	1	10/12/2019 19:51	WG1361957

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	4120	<u>B</u>	102	1000	1	10/16/2019 20:50	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	1030		15.0	100	1	10/18/2019 13:27	WG1364591
Manganese	149		0.250	5.00	1	10/18/2019 13:27	WG1364591

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/16/2019 16:25	WG1363461
(S) a,a,a-Trifluorotoluene(FID)	108			78.0-120		10/16/2019 16:25	WG1363461

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	26.6		0.287	0.678	1	10/16/2019 13:00	WG1363432
Ethane	13.0		0.296	1.29	1	10/16/2019 13:00	WG1363432
Ethene	7.90		0.422	1.27	1	10/16/2019 13:00	WG1363432

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	1.17	<u>J JO</u>	1.05	25.0	1	10/21/2019 10:05	WG1366365
Acrylonitrile	U	<u>JO</u>	0.873	5.00	1	10/21/2019 10:05	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 10:05	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 10:05	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 10:05	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 10:05	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 10:05	WG1366365
Bromomethane	U	<u>JO</u>	0.157	2.50	1	10/21/2019 10:05	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 10:05	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 10:05	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 10:05	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 10:05	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 10:05	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/21/2019 10:05	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 10:05	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 10:05	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 10:05	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 10:05	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 10:05	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 10:05	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 10:05	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 10:05	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 10:05	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 10:05	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 10:05	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 10:05	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 10:05	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 10:05	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 10:05	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 10:05	WG1366365
cis-1,2-Dichloroethene	0.935		0.0933	0.500	1	10/21/2019 10:05	WG1366365
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 10:05	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 10:05	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 10:05	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 10:05	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 10:05	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 10:05	WG1366365
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/21/2019 10:05	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 10:05	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 10:05	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 10:05	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 10:05	WG1366365
2-Hexanone	U	JO	0.757	5.00	1	10/21/2019 10:05	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 10:05	WG1366365
Iodomethane	U	JO	0.377	10.0	1	10/21/2019 10:05	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 10:05	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 10:05	WG1366365
2-Butanone (MEK)	U	JO	1.28	5.00	1	10/21/2019 10:05	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 10:05	WG1366365
4-Methyl-2-pentanone (MIBK)	U	JO	0.823	5.00	1	10/21/2019 10:05	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 10:05	WG1366365
Naphthalene	U	JO	0.174	2.50	1	10/21/2019 10:05	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 10:05	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 10:05	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 10:05	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 10:05	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 10:05	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 10:05	WG1366365
Toluene	1.05		0.412	0.500	1	10/21/2019 10:05	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 10:05	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 10:05	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 10:05	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 10:05	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 10:05	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 10:05	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 10:05	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 10:05	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 10:05	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 10:05	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/21/2019 10:05	WG1366365
Vinyl chloride	0.289	<u>J</u>	0.118	0.500	1	10/21/2019 10:05	WG1366365
Xylenes, Total	U		0.316	1.50	1	10/21/2019 10:05	WG1366365
<i>(S) Toluene-d8</i>	96.6			80.0-120		10/21/2019 10:05	WG1366365
<i>(S) 4-Bromofluorobenzene</i>	89.9			77.0-126		10/21/2019 10:05	WG1366365
<i>(S) 1,2-Dichloroethane-d4</i>	83.1			70.0-130		10/21/2019 10:05	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U	<u>JO</u>	1.05	25.0	1	10/21/2019 10:25	WG1366365
Acrylonitrile	U	<u>JO</u>	0.873	5.00	1	10/21/2019 10:25	WG1366365
Benzene	1.95		0.0896	0.500	1	10/21/2019 10:25	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 10:25	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 10:25	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 10:25	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 10:25	WG1366365
Bromomethane	U	<u>JO</u>	0.157	2.50	1	10/21/2019 10:25	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 10:25	WG1366365
sec-Butylbenzene	0.384	<u>J</u>	0.134	0.500	1	10/21/2019 10:25	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 10:25	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 10:25	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 10:25	WG1366365
Chlorobenzene	U		0.140	0.500	1	10/21/2019 10:25	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 10:25	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 10:25	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 10:25	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 10:25	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 10:25	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 10:25	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 10:25	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 10:25	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 10:25	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 10:25	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 10:25	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 10:25	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 10:25	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 10:25	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 10:25	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 10:25	WG1366365
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/21/2019 10:25	WG1366365
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 10:25	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 10:25	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 10:25	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 10:25	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 10:25	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 10:25	WG1366365
trans-1,4-Dichloro-2-butene	U	<u>JO</u>	0.257	5.00	1	10/21/2019 10:25	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 10:25	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 10:25	WG1366365
Ethylbenzene	0.355	<u>J</u>	0.158	0.500	1	10/21/2019 10:25	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 10:25	WG1366365
2-Hexanone	U	<u>JO</u>	0.757	5.00	1	10/21/2019 10:25	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 10:25	WG1366365
Iodomethane	U	<u>JO</u>	0.377	10.0	1	10/21/2019 10:25	WG1366365
Isopropylbenzene	1.11		0.126	0.500	1	10/21/2019 10:25	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 10:25	WG1366365
2-Butanone (MEK)	U	<u>JO</u>	1.28	5.00	1	10/21/2019 10:25	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 10:25	WG1366365
4-Methyl-2-pentanone (MIBK)	U	<u>JO</u>	0.823	5.00	1	10/21/2019 10:25	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 10:25	WG1366365
Naphthalene	4.32	<u>JO</u>	0.174	2.50	1	10/21/2019 10:25	WG1366365
n-Propylbenzene	0.521		0.162	0.500	1	10/21/2019 10:25	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 10:25	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 10:25	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 10:25	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 10:25	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 10:25	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 10:25	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 10:25	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 10:25	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 10:25	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 10:25	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 10:25	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 10:25	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 10:25	WG1366365
1,2,4-Trimethylbenzene	0.174	<u>J</u>	0.123	0.500	1	10/21/2019 10:25	WG1366365
1,2,3-Trimethylbenzene	2.69		0.0739	0.500	1	10/21/2019 10:25	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 10:25	WG1366365
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/21/2019 10:25	WG1366365
Vinyl chloride	U		0.118	0.500	1	10/21/2019 10:25	WG1366365
Xylenes, Total	U		0.316	1.50	1	10/21/2019 10:25	WG1366365
(S) Toluene-d8	94.1			80.0-120		10/21/2019 10:25	WG1366365
(S) 4-Bromofluorobenzene	91.6			77.0-126		10/21/2019 10:25	WG1366365
(S) 1,2-Dichloroethane-d4	84.4			70.0-130		10/21/2019 10:25	WG1366365

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	1220000		6780	50000	2.5	10/19/2019 17:30	WG1365100

Sample Narrative:

L1149387-07 WG1365100: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	10900		51.9	1000	1	10/12/2019 20:07	WG1361957
Nitrate	U		22.7	100	1	10/12/2019 20:07	WG1361957
Sulfate	5710	<u>B</u>	77.4	5000	1	10/12/2019 20:07	WG1361957

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	14700		102	1000	1	10/16/2019 21:13	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	5180		15.0	100	1	10/18/2019 13:30	WG1364591
Manganese	845		0.250	5.00	1	10/18/2019 13:30	WG1364591

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	768		0.287	0.678	1	10/16/2019 13:02	WG1363432
Ethane	U		0.296	1.29	1	10/16/2019 13:02	WG1363432
Ethene	U		0.422	1.27	1	10/16/2019 13:02	WG1363432

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.53	<u>J JO</u>	1.05	25.0	1	10/21/2019 10:45	WG1366365
Acrylonitrile	U	<u>JO</u>	0.873	5.00	1	10/21/2019 10:45	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 10:45	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 10:45	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 10:45	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 10:45	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 10:45	WG1366365
Bromomethane	U	<u>JO</u>	0.157	2.50	1	10/21/2019 10:45	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 10:45	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 10:45	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 10:45	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 10:45	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 10:45	WG1366365
Chlorobenzene	U		0.140	0.500	1	10/21/2019 10:45	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 10:45	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 10:45	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 10:45	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 10:45	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 10:45	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 10:45	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/11/19 13:50

L1149387

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 10:45	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 10:45	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 10:45	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 10:45	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 10:45	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 10:45	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 10:45	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 10:45	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 10:45	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 10:45	WG1366365
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/21/2019 10:45	WG1366365
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 10:45	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 10:45	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 10:45	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 10:45	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 10:45	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 10:45	WG1366365
trans-1,4-Dichloro-2-butene	U	<u>JO</u>	0.257	5.00	1	10/21/2019 10:45	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 10:45	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 10:45	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 10:45	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 10:45	WG1366365
2-Hexanone	U	<u>JO</u>	0.757	5.00	1	10/21/2019 10:45	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 10:45	WG1366365
Iodomethane	U	<u>JO</u>	0.377	10.0	1	10/21/2019 10:45	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 10:45	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 10:45	WG1366365
2-Butanone (MEK)	U	<u>JO</u>	1.28	5.00	1	10/21/2019 10:45	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 10:45	WG1366365
4-Methyl-2-pentanone (MIBK)	U	<u>JO</u>	0.823	5.00	1	10/21/2019 10:45	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 10:45	WG1366365
Naphthalene	U	<u>JO</u>	0.174	2.50	1	10/21/2019 10:45	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 10:45	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 10:45	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 10:45	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 10:45	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 10:45	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 10:45	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 10:45	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 10:45	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 10:45	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 10:45	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 10:45	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 10:45	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 10:45	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 10:45	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 10:45	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 10:45	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 10:45	WG1366365
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/21/2019 10:45	WG1366365
Vinyl chloride	U		0.118	0.500	1	10/21/2019 10:45	WG1366365
Xylenes, Total	U		0.316	1.50	1	10/21/2019 10:45	WG1366365
(S) Toluene-d8	98.6			80.0-120		10/21/2019 10:45	WG1366365
(S) 4-Bromofluorobenzene	94.4			77.0-126		10/21/2019 10:45	WG1366365
(S) 1,2-Dichloroethane-d4	86.6			70.0-130		10/21/2019 10:45	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	901000		6780	50000	2.5	10/19/2019 17:37	WG1365100

Sample Narrative:

L1149387-08 WG1365100: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	15400		51.9	1000	1	10/12/2019 20:23	WG1361957
Nitrate	U		22.7	100	1	10/12/2019 20:23	WG1361957
Sulfate	95400		77.4	5000	1	10/12/2019 20:23	WG1361957

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	6970		102	1000	1	10/16/2019 21:34	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	16900		15.0	100	1	10/18/2019 13:34	WG1364591
Manganese	2950		0.250	5.00	1	10/18/2019 13:34	WG1364591

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	2070		0.287	0.678	1	10/16/2019 13:05	WG1363432
Ethane	19.7		0.296	1.29	1	10/16/2019 13:05	WG1363432
Ethene	U		0.422	1.27	1	10/16/2019 13:05	WG1363432

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.27	J JO	1.05	25.0	1	10/21/2019 11:04	WG1366365
Acrylonitrile	U	JO	0.873	5.00	1	10/21/2019 11:04	WG1366365
Benzene	12.5		0.0896	0.500	1	10/21/2019 11:04	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 11:04	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 11:04	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 11:04	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 11:04	WG1366365
Bromomethane	U	JO	0.157	2.50	1	10/21/2019 11:04	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 11:04	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 11:04	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 11:04	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 11:04	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 11:04	WG1366365
Chlorobenzene	U		0.140	0.500	1	10/21/2019 11:04	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 11:04	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 11:04	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 11:04	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 11:04	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 11:04	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 11:04	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/11/19 14:55

L1149387

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 11:04	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 11:04	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 11:04	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 11:04	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 11:04	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 11:04	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 11:04	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 11:04	WG1366365
1,2-Dichloroethane	0.133	U	0.108	0.500	1	10/21/2019 11:04	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 11:04	WG1366365
cis-1,2-Dichloroethene	38.9		0.0933	0.500	1	10/21/2019 11:04	WG1366365
trans-1,2-Dichloroethene	0.492	U	0.152	0.500	1	10/21/2019 11:04	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 11:04	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 11:04	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 11:04	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 11:04	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 11:04	WG1366365
trans-1,4-Dichloro-2-butene	U	U	0.257	5.00	1	10/21/2019 11:04	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 11:04	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 11:04	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 11:04	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 11:04	WG1366365
2-Hexanone	U	U	0.757	5.00	1	10/21/2019 11:04	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 11:04	WG1366365
Iodomethane	U	U	0.377	10.0	1	10/21/2019 11:04	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 11:04	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 11:04	WG1366365
2-Butanone (MEK)	U	U	1.28	5.00	1	10/21/2019 11:04	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 11:04	WG1366365
4-Methyl-2-pentanone (MIBK)	U	U	0.823	5.00	1	10/21/2019 11:04	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 11:04	WG1366365
Naphthalene	U	U	0.174	2.50	1	10/21/2019 11:04	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 11:04	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 11:04	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 11:04	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 11:04	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 11:04	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 11:04	WG1366365
Toluene	4.38		0.412	0.500	1	10/21/2019 11:04	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 11:04	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 11:04	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 11:04	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 11:04	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 11:04	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 11:04	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 11:04	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 11:04	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 11:04	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 11:04	WG1366365
Vinyl acetate	U	U	0.645	5.00	1	10/21/2019 11:04	WG1366365
Vinyl chloride	20.3		0.118	0.500	1	10/21/2019 11:04	WG1366365
Xylenes, Total	U		0.316	1.50	1	10/21/2019 11:04	WG1366365
(S) Toluene-d8	95.8			80.0-120		10/21/2019 11:04	WG1366365
(S) 4-Bromofluorobenzene	91.9			77.0-126		10/21/2019 11:04	WG1366365
(S) 1,2-Dichloroethane-d4	85.9			70.0-130		10/21/2019 11:04	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	5750	<u>B J</u>	2710	20000	1	10/19/2019 17:53	WG1365100

Sample Narrative:

L1149387-09 WG1365100: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	222	<u>B J P1</u>	51.9	1000	1	10/12/2019 21:29	WG1361957
Nitrate	U	<u>P1</u>	22.7	100	1	10/12/2019 21:29	WG1361957
Sulfate	U		77.4	5000	1	10/12/2019 21:29	WG1361957

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	279	<u>B J</u>	102	1000	1	10/16/2019 23:27	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	32.9	<u>J</u>	15.0	100	1	10/18/2019 13:37	WG1364591
Manganese	2.37	<u>B J</u>	0.250	5.00	1	10/18/2019 13:37	WG1364591

Volatile Organic Compounds (GC) by Method NWTPHGX

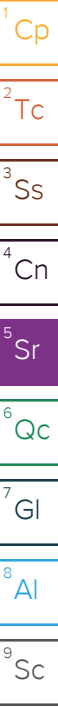
Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/16/2019 16:49	WG1363461
(S) a,a,a-Trifluorotoluene(FID)	108			78.0-120		10/16/2019 16:49	WG1363461

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	24.2		0.287	0.678	1	10/16/2019 13:07	WG1363432
Ethane	U		0.296	1.29	1	10/16/2019 13:07	WG1363432
Ethene	U		0.422	1.27	1	10/16/2019 13:07	WG1363432

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U	<u>JO</u>	1.05	25.0	1	10/21/2019 11:24	WG1366365
Acrylonitrile	U	<u>JO</u>	0.873	5.00	1	10/21/2019 11:24	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 11:24	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 11:24	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 11:24	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 11:24	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 11:24	WG1366365
Bromomethane	U	<u>JO</u>	0.157	2.50	1	10/21/2019 11:24	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 11:24	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 11:24	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 11:24	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 11:24	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 11:24	WG1366365





Collected date/time: 10/11/19 14:40

L1149387

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/21/2019 11:24	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 11:24	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 11:24	WG1366365
Chloroform	0.200	J	0.0860	0.500	1	10/21/2019 11:24	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 11:24	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 11:24	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 11:24	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 11:24	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 11:24	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 11:24	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 11:24	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 11:24	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 11:24	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 11:24	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 11:24	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 11:24	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 11:24	WG1366365
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/21/2019 11:24	WG1366365
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 11:24	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 11:24	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 11:24	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 11:24	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 11:24	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 11:24	WG1366365
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/21/2019 11:24	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 11:24	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 11:24	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 11:24	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 11:24	WG1366365
2-Hexanone	U	JO	0.757	5.00	1	10/21/2019 11:24	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 11:24	WG1366365
Iodomethane	U	JO	0.377	10.0	1	10/21/2019 11:24	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 11:24	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 11:24	WG1366365
2-Butanone (MEK)	U	JO	1.28	5.00	1	10/21/2019 11:24	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 11:24	WG1366365
4-Methyl-2-pentanone (MIBK)	U	JO	0.823	5.00	1	10/21/2019 11:24	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 11:24	WG1366365
Naphthalene	U	JO	0.174	2.50	1	10/21/2019 11:24	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 11:24	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 11:24	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 11:24	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 11:24	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 11:24	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 11:24	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 11:24	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 11:24	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 11:24	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 11:24	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 11:24	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 11:24	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 11:24	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 11:24	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 11:24	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 11:24	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 11:24	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/11/19 14:40

L1149387

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/21/2019 11:24	WG1366365
Vinyl chloride	U		0.118	0.500	1	10/21/2019 11:24	WG1366365
Xylenes, Total	U		0.316	1.50	1	10/21/2019 11:24	WG1366365
(S) Toluene-d8	98.4			80.0-120		10/21/2019 11:24	WG1366365
(S) 4-Bromofluorobenzene	96.1			77.0-126		10/21/2019 11:24	WG1366365
(S) 1,2-Dichloroethane-d4	82.6			70.0-130		10/21/2019 11:24	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/11/19 16:00

L1149387

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/16/2019 13:22	WG1363461
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		10/16/2019 13:22	WG1363461

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U	<u>JO</u>	1.05	25.0	1	10/21/2019 08:27	WG1366365
Acrylonitrile	U	<u>JO</u>	0.873	5.00	1	10/21/2019 08:27	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 08:27	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 08:27	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 08:27	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 08:27	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 08:27	WG1366365
Bromomethane	U	<u>JO</u>	0.157	2.50	1	10/21/2019 08:27	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 08:27	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 08:27	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 08:27	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 08:27	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 08:27	WG1366365
Chlorobenzene	U		0.140	0.500	1	10/21/2019 08:27	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 08:27	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 08:27	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 08:27	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 08:27	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 08:27	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 08:27	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 08:27	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 08:27	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 08:27	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 08:27	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 08:27	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 08:27	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 08:27	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 08:27	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 08:27	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 08:27	WG1366365
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/21/2019 08:27	WG1366365
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 08:27	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 08:27	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 08:27	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 08:27	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 08:27	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 08:27	WG1366365
trans-1,4-Dichloro-2-butene	U	<u>JO</u>	0.257	5.00	1	10/21/2019 08:27	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 08:27	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 08:27	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 08:27	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 08:27	WG1366365
2-Hexanone	U	<u>JO</u>	0.757	5.00	1	10/21/2019 08:27	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 08:27	WG1366365
Iodomethane	U	<u>JO</u>	0.377	10.0	1	10/21/2019 08:27	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 08:27	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 08:27	WG1366365
2-Butanone (MEK)	U	<u>JO</u>	1.28	5.00	1	10/21/2019 08:27	WG1366365



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methylene Chloride	U		1.07	2.50	1	10/21/2019 08:27	WG1366365
4-Methyl-2-pentanone (MIBK)	U	<u>JO</u>	0.823	5.00	1	10/21/2019 08:27	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 08:27	WG1366365
Naphthalene	U	<u>JO</u>	0.174	2.50	1	10/21/2019 08:27	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 08:27	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 08:27	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 08:27	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 08:27	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 08:27	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 08:27	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 08:27	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 08:27	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 08:27	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 08:27	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 08:27	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 08:27	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 08:27	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 08:27	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 08:27	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 08:27	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 08:27	WG1366365
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/21/2019 08:27	WG1366365
Vinyl chloride	U		0.118	0.500	1	10/21/2019 08:27	WG1366365
Xylenes, Total	U		0.316	1.50	1	10/21/2019 08:27	WG1366365
(S) Toluene-d8	95.6			80.0-120		10/21/2019 08:27	WG1366365
(S) 4-Bromofluorobenzene	92.7			77.0-126		10/21/2019 08:27	WG1366365
(S) 1,2-Dichloroethane-d4	83.6			70.0-130		10/21/2019 08:27	WG1366365

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3462775-1 10/19/19 11:13

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	4330	J	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1147285-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1147285-01 10/19/19 12:25 • (DUP) R3462775-3 10/19/19 12:34

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	100000	93700	1	6.64		20

Sample Narrative:

OS: Endpoint pH 4.5 HEADSPACE

DUP: Endpoint pH 4.5

L1149401-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1149401-01 10/19/19 18:01 • (DUP) R3462775-6 10/19/19 18:10

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	1060000	1080000	1	1.63		20

Sample Narrative:

OS: Endpoint pH 4.5

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3462775-5 10/19/19 13:33

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	98300	98.3	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3460615-1 10/12/19 12:19

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	79.3	↓	51.9	1000
Nitrate	U		22.7	100
Sulfate	1390	↓	77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1147951-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1147951-01 10/12/19 15:29 • (DUP) R3460615-3 10/12/19 15:44

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	5450	5430	1	0.384		15
Nitrate	396	379	1	4.44		15

L1149387-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1149387-09 10/12/19 21:29 • (DUP) R3460615-6 10/12/19 21:45

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	222	109	1	68.4	J P1	15
Nitrate	U	41.0	1	200	J P1	15
Sulfate	U	0.000	1	0.000		15

Laboratory Control Sample (LCS)

(LCS) R3460615-2 10/12/19 12:35

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Chloride	40000	39300	98.2	80.0-120	
Nitrate	8000	7950	99.4	80.0-120	
Sulfate	40000	39900	99.8	80.0-120	

L1147951-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1147951-02 10/12/19 16:01 • (MS) R3460615-4 10/12/19 16:17 • (MSD) R3460615-5 10/12/19 16:34

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Chloride	50000	10700	60800	60700	100	100	1	80.0-120			0.0780	15
Nitrate	5000	416	5580	5580	103	103	1	80.0-120			0.147	15



L1147951-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1147951-02 10/12/19 16:01 • (MS) R3460615-4 10/12/19 16:17 • (MSD) R3460615-5 10/12/19 16:34

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits
Sulfate	50000	16100	65100	65000	97.9	97.8	1	80.0-120			0.0477	15

L1149387-09 Original Sample (OS) • Matrix Spike (MS)

(OS) L1149387-09 10/12/19 21:29 • (MS) R3460615-7 10/12/19 22:02

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	222	50000	99.5	1	80.0-120	
Nitrate	5000	U	5110	102	1	80.0-120	
Sulfate	50000	U	49700	99.5	1	80.0-120	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3462022-1 10/16/19 18:09

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	416	↓	102	1000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1149387-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1149387-08 10/16/19 21:34 • (DUP) R3462022-3 10/16/19 21:57

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC	6970	7050	1	1.08		20

L1149591-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1149591-06 10/17/19 08:46 • (DUP) R3462022-9 10/17/19 09:03

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC	489	421	1	15.1	↓	20

Laboratory Control Sample (LCS)

(LCS) R3462022-2 10/16/19 18:52

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC	75000	69000	92.0	85.0-115	

L1149591-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1149591-04 10/17/19 00:20 • (MS) R3462022-4 10/17/19 00:42 • (MSD) R3462022-5 10/17/19 01:04

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC	50000	5870	53200	54900	94.7	98.1	1	80.0-120			3.11	20

L1149851-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1149851-03 10/17/19 03:58 • (MS) R3462022-7 10/17/19 04:19 • (MSD) R3462022-8 10/17/19 04:40

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC	50000	2950	50000	49700	94.1	93.5	1	80.0-120			0.542	20



Method Blank (MB)

(MB) R3462523-1 10/18/19 12:28

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Iron	U		15.0	100
Manganese	1.01	J	0.250	5.00

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3462523-2 10/18/19 12:31 • (LCSD) R3462523-3 10/18/19 12:35

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Iron	5000	5180	5330	104	107	80.0-120			2.87	20
Manganese	50.0	51.0	52.4	102	105	80.0-120			2.72	20

5 Sr

6 Qc

L1149342-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1149342-02 10/18/19 12:38 • (MS) R3462523-5 10/18/19 12:44 • (MSD) R3462523-6 10/18/19 12:48

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Iron	5000	178	5450	5500	105	107	1	75.0-125			1.05	20
Manganese	50.0	44.5	95.2	95.9	101	103	1	75.0-125			0.734	20

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3461647-3 10/16/19 12:32

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS)

(LCS) R3461647-2 10/16/19 11:32

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5400	98.2	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			80.7	78.0-120	

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3461663-1 10/16/19 13:45

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Methane	U		0.287	0.678

1 Cp

2 Tc

3 Ss

4 Cn

L1149196-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1149196-01 10/16/19 13:57 • (DUP) R3461663-2 10/16/19 14:21

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	535	528	1	1.34		20

5 Sr

6 Qc

L1149342-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1149342-08 10/16/19 14:38 • (DUP) R3461663-3 10/16/19 15:28

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	384	387	1	0.623		20

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3461663-4 10/16/19 15:39 • (LCSD) R3461663-5 10/16/19 15:42

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Methane	67.8	73.4	76.5	108	113	85.0-115			4.17	20



Method Blank (MB)

(MB) R3461591-1 10/16/19 10:37

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1149371-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1149371-06 10/16/19 11:29 • (DUP) R3461591-2 10/16/19 12:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	1080	1130	1	4.95		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

L1149387-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1149387-04 10/16/19 13:29 • (DUP) R3461591-3 10/16/19 13:32

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	12.3	12.9	1	4.67		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3461591-4 10/16/19 13:35 • (LCSD) R3461591-5 10/16/19 13:39

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	75.3	76.3	111	112	85.0-115			1.34	20
Ethane	129	133	129	103	100	85.0-115			2.40	20
Ethene	127	138	135	109	106	85.0-115			2.67	20



Method Blank (MB)

(MB) R3463753-2 10/21/19 08:08

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3463753-2 10/21/19 08:08

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	98.9			80.0-120
(S) 4-Bromofluorobenzene	92.7			77.0-126
(S) 1,2-Dichloroethane-d4	83.6			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3463753-1 10/21/19 06:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Acetone	125	88.2	70.6	19.0-160	
Acrylonitrile	125	94.1	75.3	55.0-149	
Benzene	25.0	22.6	90.4	70.0-123	
Bromobenzene	25.0	24.4	97.6	73.0-121	
Bromodichloromethane	25.0	22.1	88.4	75.0-120	
Bromochloromethane	25.0	24.0	96.0	76.0-122	
Bromoform	25.0	22.6	90.4	68.0-132	
Bromomethane	25.0	19.1	76.4	10.0-160	
n-Butylbenzene	25.0	26.5	106	73.0-125	
sec-Butylbenzene	25.0	25.4	102	75.0-125	
tert-Butylbenzene	25.0	24.3	97.2	76.0-124	
Carbon disulfide	25.0	22.4	89.6	61.0-128	
Carbon tetrachloride	25.0	21.3	85.2	68.0-126	
Chlorobenzene	25.0	24.3	97.2	80.0-121	
Chlorodibromomethane	25.0	23.7	94.8	77.0-125	
Chloroethane	25.0	23.4	93.6	47.0-150	
Chloroform	25.0	22.0	88.0	73.0-120	
Chloromethane	25.0	20.1	80.4	41.0-142	
2-Chlorotoluene	25.0	24.2	96.8	76.0-123	
4-Chlorotoluene	25.0	23.4	93.6	75.0-122	
1,2-Dibromo-3-Chloropropane	25.0	20.3	81.2	58.0-134	
1,2-Dibromoethane	25.0	23.5	94.0	80.0-122	
Dibromomethane	25.0	22.3	89.2	80.0-120	
1,2-Dichlorobenzene	25.0	26.3	105	79.0-121	
1,3-Dichlorobenzene	25.0	26.7	107	79.0-120	
1,4-Dichlorobenzene	25.0	26.5	106	79.0-120	
Dichlorodifluoromethane	25.0	25.4	102	51.0-149	
1,1-Dichloroethane	25.0	21.3	85.2	70.0-126	
1,2-Dichloroethane	25.0	20.1	80.4	70.0-128	
1,1-Dichloroethene	25.0	25.6	102	71.0-124	
cis-1,2-Dichloroethene	25.0	24.1	96.4	73.0-120	
trans-1,2-Dichloroethene	25.0	23.2	92.8	73.0-120	
1,2-Dichloropropane	25.0	21.0	84.0	77.0-125	
1,1-Dichloropropene	25.0	23.7	94.8	74.0-126	
1,3-Dichloropropane	25.0	24.3	97.2	80.0-120	
cis-1,3-Dichloropropene	25.0	22.0	88.0	80.0-123	
trans-1,3-Dichloropropene	25.0	22.8	91.2	78.0-124	
trans-1,4-Dichloro-2-butene	25.0	14.8	59.2	33.0-144	
2,2-Dichloropropane	25.0	20.1	80.4	58.0-130	
Di-isopropyl ether	25.0	20.6	82.4	58.0-138	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3463753-1 10/21/19 06:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Ethylbenzene	25.0	23.6	94.4	79.0-123	
Hexachloro-1,3-butadiene	25.0	33.8	135	54.0-138	
2-Hexanone	125	98.0	78.4	67.0-149	
n-Hexane	25.0	20.8	83.2	57.0-133	
Iodomethane	125	98.7	79.0	33.0-147	
Isopropylbenzene	25.0	22.2	88.8	76.0-127	
p-Isopropyltoluene	25.0	26.5	106	76.0-125	
2-Butanone (MEK)	125	81.5	65.2	44.0-160	
Methylene Chloride	25.0	22.7	90.8	67.0-120	
4-Methyl-2-pentanone (MIBK)	125	87.8	70.2	68.0-142	
Methyl tert-butyl ether	25.0	20.5	82.0	68.0-125	
Naphthalene	25.0	19.2	76.8	54.0-135	
n-Propylbenzene	25.0	22.8	91.2	77.0-124	
Styrene	25.0	24.4	97.6	73.0-130	
1,1,1,2-Tetrachloroethane	25.0	23.8	95.2	75.0-125	
1,1,2,2-Tetrachloroethane	25.0	20.3	81.2	65.0-130	
1,1,2-Trichlorotrifluoroethane	25.0	23.1	92.4	69.0-132	
Tetrachloroethene	25.0	25.2	101	72.0-132	
Toluene	25.0	23.7	94.8	79.0-120	
1,2,3-Trichlorobenzene	25.0	26.4	106	50.0-138	
1,2,4-Trichlorobenzene	25.0	28.9	116	57.0-137	
1,1,1-Trichloroethane	25.0	20.9	83.6	73.0-124	
1,1,2-Trichloroethane	25.0	23.4	93.6	80.0-120	
Trichloroethene	25.0	23.0	92.0	78.0-124	
Trichlorofluoromethane	25.0	25.7	103	59.0-147	
1,2,3-Trichloropropane	25.0	21.3	85.2	73.0-130	
1,2,4-Trimethylbenzene	25.0	24.0	96.0	76.0-121	
1,2,3-Trimethylbenzene	25.0	24.5	98.0	77.0-120	
1,3,5-Trimethylbenzene	25.0	23.3	93.2	76.0-122	
Vinyl acetate	125	92.6	74.1	11.0-160	
Vinyl chloride	25.0	25.2	101	67.0-131	
Xylenes, Total	75.0	71.6	95.5	79.0-123	
<i>(S) Toluene-d8</i>			98.4	80.0-120	
<i>(S) 4-Bromofluorobenzene</i>			96.6	77.0-126	
<i>(S) 1,2-Dichloroethane-d4</i>			81.0	70.0-130	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier Description

B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration method criteria.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

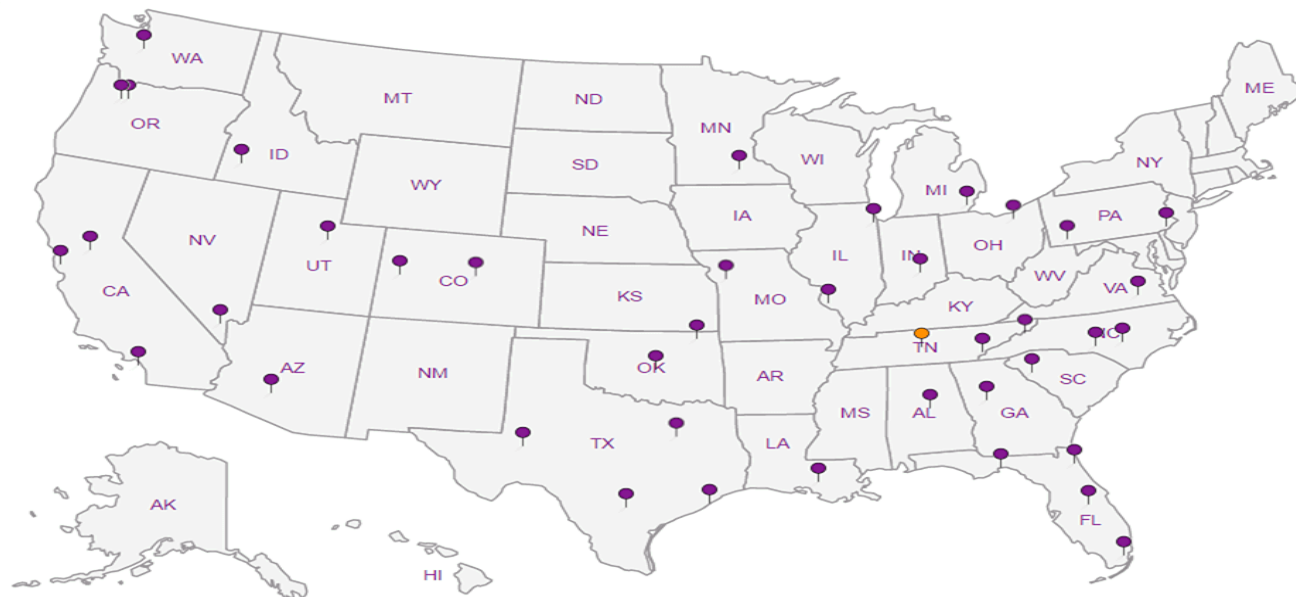
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

PES-Seattle

Billing Information:
PES-Seattle

Pres Chk

Chain of Custody Page ___ of ___

Report to:
Bill Haldeman/Brian O'neal

Email To:
on file

Project Description: *American Linen*

City/State: Seattle, WA
Collected:

Phone: on file
Fax:

Client Project #
1413, 001.02.501E

Lab Project #
PESENVSWA-ALP

Collected by (print):
K. Zygas/B. Hecht/H. Cohen

Site/Facility ID #:
AMERICAN LINEN

P.O. #

Collected by (signature):
[Signature]

Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Quote #
Date Results Needed

Immediately Packed on Ice N Y

No. of Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
MW-916-101119	Grab	GW	65	10/11/19	0800	9
SMW-3-101119		GW	15		0945	3
MW128-101119		GW	65		1045	9
MW124-101119		GW	115		1111	11
MW-307-101119		GW	80		1135	12
MW-214-101119		GW	14		1215	3
MW-312-101119		GW	20		1350	9
MW-308-101119		GW	40		1455	9
EQ-101119	Grab	GW	—	10/11/19	1440	12
TRIP-101119	—	GW	—	10/11/19	1600	2

NO3, SO4, Chloride 48 hour hold

Analysis / Container / Preservative						
NWTPHGX	VOCs (V8260LLC)	Total Fe Mn 6020	TOC	Alkalinity	EEM (RSK175LL)	

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



L # *1149367*
J118
Acctnum: PESENVSWA
Template:
Prelogin:
TSR: Brian Ford
PB:
Shipped Via:

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:
pH _____ Temp _____
Flow _____ Other _____
Samples returned via:
UPS FedEx Courier
Tracking # *1145 2227 4141*

Sample Receipt Checklist
 COC Seal Present/Intact: Y N
 COC Signed/Accurate: Y N
 Bottles arrive intact: Y N
 Correct bottles used: Y N
 Sufficient volume sent: Y N
 If Applicable
 VOA Zero Headspace: Y N
 Preservation Correctly Checked: Y N

Relinquished by: (Signature) *[Signature]*
Date: *10-11-19*
Time: *1600*

Received by: (Signature)
Date: _____
Time: _____

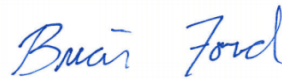
Trip Blank Received: Yes / No
HCL / MeOH
TBR
Temp: °C
Bottles Received: *5.63, 1.3, 7.6, 7.6*

RAD SCREEN: <0.5 mR/hr
If preservation required by Login: Date/Time
Date: *10/12/19* Time: *8:46*
Condition: NCF / *OK*

PES Environmental, Inc.- WA

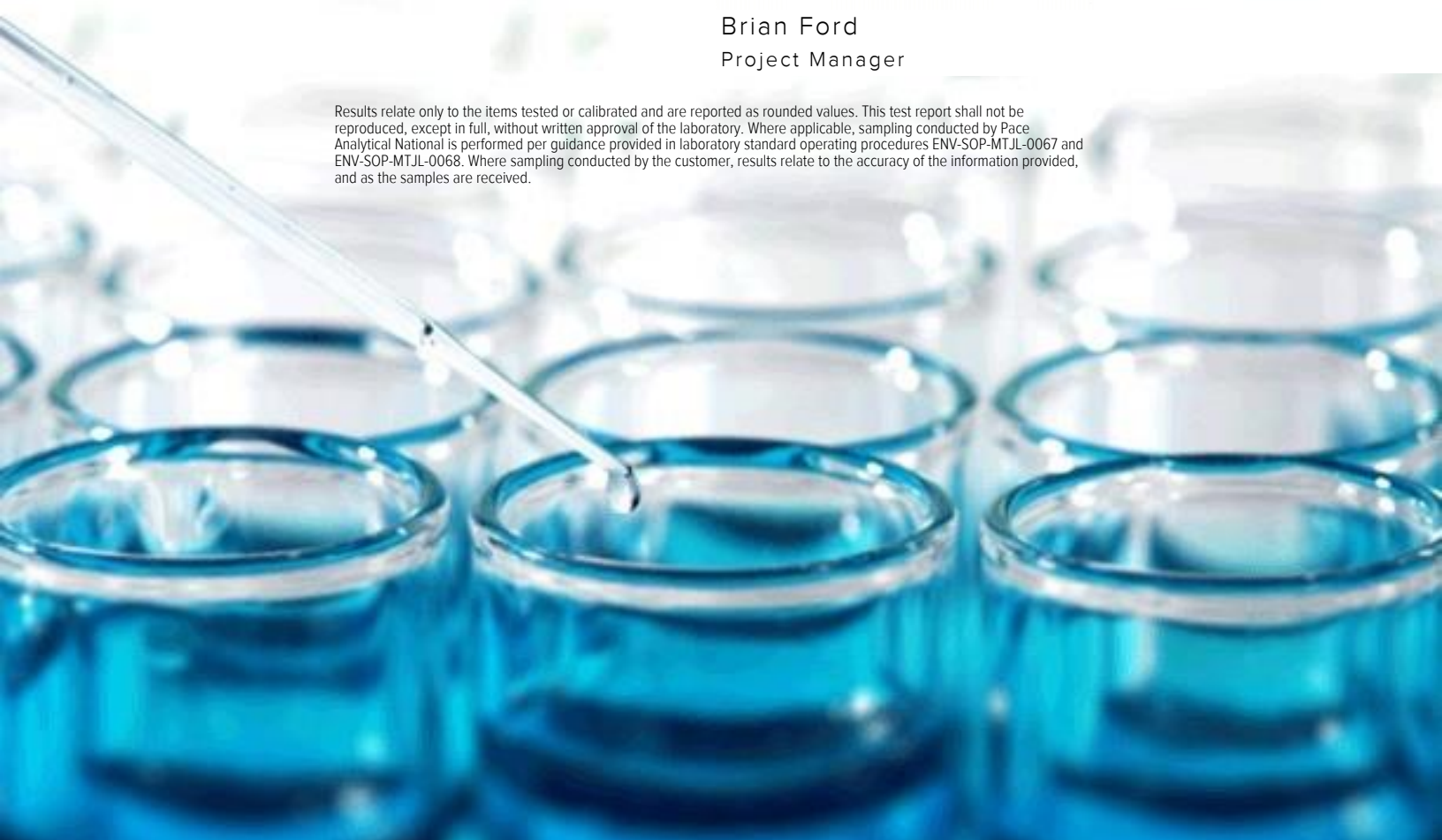
Sample Delivery Group: L1149851
Samples Received: 10/15/2019
Project Number: 1413.001.02.501E
Description:
Site: AMERICAN LINEN
Report To: Brian O'Neal/Bill Haldeman
1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Entire Report Reviewed By:












Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





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SAMPLE SUMMARY

MW-190-101419 L1149851-01 GW

Collected by
KZ/HC/BH
Collected date/time
10/14/19 09:10
Received date/time
10/15/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365104	1	10/18/19 11:14	10/18/19 11:14	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363086	1	10/15/19 22:42	10/15/19 22:42	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364227	1	10/17/19 03:19	10/17/19 03:19	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364629	1	10/20/19 13:40	10/21/19 11:10	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1364938	1	10/18/19 04:37	10/18/19 04:37	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1363432	1	10/16/19 13:10	10/16/19 13:10	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 11:44	10/21/19 11:44	BMB	Mt. Juliet, TN

1
Cp

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Tc

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Ss

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Cn

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Sr

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Qc

7
Gl

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Al

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Sc

MW-146-101419 L1149851-02 GW

Collected by
KZ/HC/BH
Collected date/time
10/14/19 10:15
Received date/time
10/15/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365104	1	10/18/19 11:22	10/18/19 11:22	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363086	1	10/15/19 22:56	10/15/19 22:56	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364227	1	10/17/19 03:41	10/17/19 03:41	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364629	1	10/20/19 13:40	10/21/19 11:25	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1364938	1	10/18/19 05:01	10/18/19 05:01	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1363432	1	10/16/19 13:15	10/16/19 13:15	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 12:03	10/21/19 12:03	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1367719	100	10/23/19 01:49	10/23/19 01:49	TJJ	Mt. Juliet, TN

MW-309-101419 L1149851-03 GW

Collected by
KZ/HC/BH
Collected date/time
10/14/19 10:35
Received date/time
10/15/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365104	1	10/18/19 11:37	10/18/19 11:37	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363086	1	10/15/19 23:54	10/15/19 23:54	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364227	1	10/17/19 03:58	10/17/19 03:58	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364629	1	10/20/19 13:40	10/21/19 11:29	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1363432	1	10/16/19 13:25	10/16/19 13:25	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 12:23	10/21/19 12:23	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1367719	1	10/23/19 02:10	10/23/19 02:10	TJJ	Mt. Juliet, TN

MW-189-101419 L1149851-04 GW

Collected by
KZ/HC/BH
Collected date/time
10/14/19 11:30
Received date/time
10/15/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365104	1	10/18/19 11:44	10/18/19 11:44	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363086	1	10/16/19 00:08	10/16/19 00:08	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364227	1	10/17/19 04:56	10/17/19 04:56	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364629	1	10/20/19 13:40	10/21/19 11:32	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1364938	1	10/18/19 05:24	10/18/19 05:24	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1363432	1	10/16/19 13:27	10/16/19 13:27	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 12:43	10/21/19 12:43	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1367719	1	10/23/19 02:30	10/23/19 02:30	TJJ	Mt. Juliet, TN

SAMPLE SUMMARY



MW-154-101419 L1149851-05 GW

Collected by
KZ/HC/BH
Collected date/time
10/14/19 12:05
Received date/time
10/15/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365104	1	10/18/19 11:52	10/18/19 11:52	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363086	1	10/16/19 00:23	10/16/19 00:23	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364227	1	10/17/19 05:16	10/17/19 05:16	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364629	1	10/20/19 13:40	10/21/19 11:58	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1364938	1	10/18/19 05:48	10/18/19 05:48	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1364418	1	10/17/19 11:11	10/17/19 11:11	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 13:02	10/21/19 13:02	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1367719	1	10/23/19 02:50	10/23/19 02:50	TJJ	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

MW-122-101419 L1149851-06 GW

Collected by
KZ/HC/BH
Collected date/time
10/14/19 12:05
Received date/time
10/15/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365104	1	10/18/19 11:59	10/18/19 11:59	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363090	1	10/15/19 16:07	10/15/19 16:07	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364227	1	10/17/19 05:34	10/17/19 05:34	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364629	1	10/20/19 13:40	10/21/19 12:02	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1364418	1	10/17/19 11:14	10/17/19 11:14	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 13:22	10/21/19 13:22	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1367719	1	10/23/19 03:11	10/23/19 03:11	TJJ	Mt. Juliet, TN

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Qc

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MW-111-101419 L1149851-07 GW

Collected by
KZ/HC/BH
Collected date/time
10/14/19 13:25
Received date/time
10/15/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365104	1	10/18/19 12:06	10/18/19 12:06	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363090	1	10/15/19 16:33	10/15/19 16:33	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364227	1	10/17/19 05:51	10/17/19 05:51	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364629	1	10/20/19 13:40	10/21/19 12:05	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1364418	1	10/17/19 11:17	10/17/19 11:17	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 13:41	10/21/19 13:41	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1367719	1	10/23/19 03:31	10/23/19 03:31	TJJ	Mt. Juliet, TN

MW-147-101419 L1149851-08 GW

Collected by
KZ/HC/BH
Collected date/time
10/14/19 13:55
Received date/time
10/15/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365104	1	10/18/19 12:13	10/18/19 12:13	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363090	1	10/15/19 17:38	10/15/19 17:38	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364260	5	10/17/19 16:35	10/17/19 16:35	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364629	1	10/20/19 13:40	10/21/19 12:09	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1364938	1	10/18/19 06:12	10/18/19 06:12	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1364418	1	10/17/19 11:26	10/17/19 11:26	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1365165	10	10/18/19 13:08	10/18/19 13:08	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 14:01	10/21/19 14:01	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1367719	25	10/23/19 03:51	10/23/19 03:51	TJJ	Mt. Juliet, TN

SAMPLE SUMMARY



MW-161-101419 L1149851-09 GW

Collected by
KZ/HC/BH
Collected date/time
10/14/19 14:28
Received date/time
10/15/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365104	1	10/18/19 12:20	10/18/19 12:20	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363090	1	10/15/19 17:51	10/15/19 17:51	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364260	1	10/17/19 16:53	10/17/19 16:53	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364629	1	10/20/19 13:40	10/21/19 12:13	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1367521	1	10/23/19 02:14	10/23/19 02:14	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1364418	1	10/17/19 13:20	10/17/19 13:20	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 14:21	10/21/19 14:21	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1367719	1	10/23/19 04:11	10/23/19 04:11	TJJ	Mt. Juliet, TN

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Cp

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MW-103-101419 L1149851-10 GW

Collected by
KZ/HC/BH
Collected date/time
10/14/19 14:55
Received date/time
10/15/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365104	1	10/18/19 12:27	10/18/19 12:27	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363090	1	10/15/19 18:04	10/15/19 18:04	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364260	1	10/17/19 17:20	10/17/19 17:20	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364629	1	10/20/19 13:40	10/21/19 12:16	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1364418	1	10/17/19 13:23	10/17/19 13:23	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 14:40	10/21/19 14:40	BMB	Mt. Juliet, TN

TB-101419 L1149851-11 GW

Collected by
KZ/HC/BH
Collected date/time
10/14/19 15:30
Received date/time
10/15/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1364938	1	10/18/19 01:02	10/18/19 01:02	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1368672	1	10/24/19 16:33	10/24/19 16:33	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1369459	1	10/25/19 11:05	10/25/19 11:05	JAH	Mt. Juliet, TN



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	172000		2710	20000	1	10/18/2019 11:14	WG1365104

Sample Narrative:

L1149851-01 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	12800		51.9	1000	1	10/15/2019 22:42	WG1363086
Nitrate	U		22.7	100	1	10/15/2019 22:42	WG1363086
Sulfate	20300		77.4	5000	1	10/15/2019 22:42	WG1363086

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	10300		102	1000	1	10/17/2019 03:19	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	1850		15.0	100	1	10/21/2019 11:10	WG1364629
Manganese	406		0.250	5.00	1	10/21/2019 11:10	WG1364629

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/18/2019 04:37	WG1364938
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		10/18/2019 04:37	WG1364938

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	428		0.287	0.678	1	10/16/2019 13:10	WG1363432
Ethane	6.87		0.296	1.29	1	10/16/2019 13:10	WG1363432
Ethene	U		0.422	1.27	1	10/16/2019 13:10	WG1363432

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U	JO	1.05	25.0	1	10/21/2019 11:44	WG1366365
Acrylonitrile	U	JO	0.873	5.00	1	10/21/2019 11:44	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 11:44	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 11:44	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 11:44	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 11:44	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 11:44	WG1366365
Bromomethane	U	JO	0.157	2.50	1	10/21/2019 11:44	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 11:44	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 11:44	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 11:44	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 11:44	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 11:44	WG1366365

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/21/2019 11:44	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 11:44	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 11:44	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 11:44	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 11:44	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 11:44	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 11:44	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 11:44	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 11:44	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 11:44	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 11:44	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 11:44	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 11:44	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 11:44	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 11:44	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 11:44	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 11:44	WG1366365
cis-1,2-Dichloroethene	7.78		0.0933	0.500	1	10/21/2019 11:44	WG1366365
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 11:44	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 11:44	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 11:44	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 11:44	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 11:44	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 11:44	WG1366365
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/21/2019 11:44	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 11:44	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 11:44	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 11:44	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 11:44	WG1366365
2-Hexanone	U	JO	0.757	5.00	1	10/21/2019 11:44	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 11:44	WG1366365
Iodomethane	U	JO	0.377	10.0	1	10/21/2019 11:44	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 11:44	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 11:44	WG1366365
2-Butanone (MEK)	U	JO	1.28	5.00	1	10/21/2019 11:44	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 11:44	WG1366365
4-Methyl-2-pentanone (MIBK)	U	JO	0.823	5.00	1	10/21/2019 11:44	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 11:44	WG1366365
Naphthalene	U	JO	0.174	2.50	1	10/21/2019 11:44	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 11:44	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 11:44	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 11:44	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 11:44	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 11:44	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 11:44	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 11:44	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 11:44	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 11:44	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 11:44	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 11:44	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 11:44	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 11:44	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 11:44	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 11:44	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 11:44	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 11:44	WG1366365

1 Cp

2 Tc

3 Ss

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/21/2019 11:44	WG1366365
Vinyl chloride	0.994		0.118	0.500	1	10/21/2019 11:44	WG1366365
Xylenes, Total	U		0.316	1.50	1	10/21/2019 11:44	WG1366365
<i>(S) Toluene-d8</i>	96.6			80.0-120		10/21/2019 11:44	WG1366365
<i>(S) 4-Bromofluorobenzene</i>	94.2			77.0-126		10/21/2019 11:44	WG1366365
<i>(S) 1,2-Dichloroethane-d4</i>	85.9			70.0-130		10/21/2019 11:44	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	338000		2710	20000	1	10/18/2019 11:22	WG1365104

Sample Narrative:

L1149851-02 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	23300		51.9	1000	1	10/15/2019 22:56	WG1363086
Nitrate	U		22.7	100	1	10/15/2019 22:56	WG1363086
Sulfate	20600		77.4	5000	1	10/15/2019 22:56	WG1363086

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3630	<u>B</u>	102	1000	1	10/17/2019 03:41	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	2910		15.0	100	1	10/21/2019 11:25	WG1364629
Manganese	898		0.250	5.00	1	10/21/2019 11:25	WG1364629

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	1310		31.6	100	1	10/18/2019 05:01	WG1364938
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		10/18/2019 05:01	WG1364938

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	6190		0.287	0.678	1	10/16/2019 13:15	WG1363432
Ethane	U		0.296	1.29	1	10/16/2019 13:15	WG1363432
Ethene	394		0.422	1.27	1	10/16/2019 13:15	WG1363432

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U	<u>JO</u>	1.05	25.0	1	10/21/2019 12:03	WG1366365
Acrylonitrile	U	<u>JO</u>	0.873	5.00	1	10/21/2019 12:03	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 12:03	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 12:03	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 12:03	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 12:03	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 12:03	WG1366365
Bromomethane	U	<u>JO</u>	0.157	2.50	1	10/21/2019 12:03	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 12:03	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 12:03	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 12:03	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 12:03	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 12:03	WG1366365

1 Cp

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/21/2019 12:03	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 12:03	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 12:03	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 12:03	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 12:03	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 12:03	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 12:03	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 12:03	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 12:03	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 12:03	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 12:03	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 12:03	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 12:03	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 12:03	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 12:03	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 12:03	WG1366365
1,1-Dichloroethene	2.83		0.188	0.500	1	10/21/2019 12:03	WG1366365
cis-1,2-Dichloroethene	1350		9.33	50.0	100	10/23/2019 01:49	WG1367719
trans-1,2-Dichloroethene	7.85		0.152	0.500	1	10/21/2019 12:03	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 12:03	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 12:03	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 12:03	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 12:03	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 12:03	WG1366365
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/21/2019 12:03	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 12:03	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 12:03	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 12:03	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 12:03	WG1366365
2-Hexanone	U	JO	0.757	5.00	1	10/21/2019 12:03	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 12:03	WG1366365
Iodomethane	U	JO	0.377	10.0	1	10/21/2019 12:03	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 12:03	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 12:03	WG1366365
2-Butanone (MEK)	U	JO	1.28	5.00	1	10/21/2019 12:03	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 12:03	WG1366365
4-Methyl-2-pentanone (MIBK)	U	JO	0.823	5.00	1	10/21/2019 12:03	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 12:03	WG1366365
Naphthalene	U	JO	0.174	2.50	1	10/21/2019 12:03	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 12:03	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 12:03	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 12:03	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 12:03	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 12:03	WG1366365
Tetrachloroethene	2.03		0.199	0.500	1	10/21/2019 12:03	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 12:03	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 12:03	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 12:03	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 12:03	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 12:03	WG1366365
Trichloroethene	6.77		0.153	0.500	1	10/21/2019 12:03	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 12:03	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 12:03	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 12:03	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 12:03	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 12:03	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/21/2019 12:03	WG1366365
Vinyl chloride	2830		11.8	50.0	100	10/23/2019 01:49	WG1367719
Xylenes, Total	U		0.316	1.50	1	10/21/2019 12:03	WG1366365
(S) Toluene-d8	94.4			80.0-120		10/21/2019 12:03	WG1366365
(S) Toluene-d8	96.6			80.0-120		10/23/2019 01:49	WG1367719
(S) 4-Bromofluorobenzene	92.3			77.0-126		10/21/2019 12:03	WG1366365
(S) 4-Bromofluorobenzene	107			77.0-126		10/23/2019 01:49	WG1367719
(S) 1,2-Dichloroethane-d4	81.9			70.0-130		10/21/2019 12:03	WG1366365
(S) 1,2-Dichloroethane-d4	103			70.0-130		10/23/2019 01:49	WG1367719

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	228000		2710	20000	1	10/18/2019 11:37	WG1365104

Sample Narrative:

L1149851-03 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	15100		51.9	1000	1	10/15/2019 23:54	WG1363086
Nitrate	U		22.7	100	1	10/15/2019 23:54	WG1363086
Sulfate	86500		77.4	5000	1	10/15/2019 23:54	WG1363086

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	2950	<u>B</u>	102	1000	1	10/17/2019 03:58	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	511		15.0	100	1	10/21/2019 11:29	WG1364629
Manganese	435		0.250	5.00	1	10/21/2019 11:29	WG1364629

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	105		0.287	0.678	1	10/16/2019 13:25	WG1363432
Ethane	U		0.296	1.29	1	10/16/2019 13:25	WG1363432
Ethene	U		0.422	1.27	1	10/16/2019 13:25	WG1363432

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		1.05	25.0	1	10/21/2019 12:23	WG1366365
Acrylonitrile	U	<u>JO</u>	0.873	5.00	1	10/21/2019 12:23	WG1366365
Benzene	0.295	<u>J</u>	0.0896	0.500	1	10/21/2019 12:23	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 12:23	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 12:23	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 12:23	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 12:23	WG1366365
Bromomethane	U	<u>JO</u>	0.157	2.50	1	10/21/2019 12:23	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 12:23	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 12:23	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 12:23	WG1366365
Carbon disulfide	5.84		0.101	0.500	1	10/21/2019 12:23	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 12:23	WG1366365
Chlorobenzene	U		0.140	0.500	1	10/21/2019 12:23	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 12:23	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 12:23	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 12:23	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 12:23	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 12:23	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 12:23	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 12:23	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 12:23	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 12:23	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 12:23	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 12:23	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 12:23	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 12:23	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 12:23	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 12:23	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 12:23	WG1366365
cis-1,2-Dichloroethene	1.47		0.0933	0.500	1	10/23/2019 02:10	WG1367719
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 12:23	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 12:23	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 12:23	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 12:23	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 12:23	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 12:23	WG1366365
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/21/2019 12:23	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 12:23	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 12:23	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 12:23	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 12:23	WG1366365
2-Hexanone	U	JO	0.757	5.00	1	10/21/2019 12:23	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 12:23	WG1366365
Iodomethane	U	JO	0.377	10.0	1	10/21/2019 12:23	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 12:23	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 12:23	WG1366365
2-Butanone (MEK)	U	JO	1.28	5.00	1	10/21/2019 12:23	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 12:23	WG1366365
4-Methyl-2-pentanone (MIBK)	U	JO	0.823	5.00	1	10/21/2019 12:23	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 12:23	WG1366365
Naphthalene	U	JO	0.174	2.50	1	10/21/2019 12:23	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 12:23	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 12:23	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 12:23	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 12:23	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 12:23	WG1366365
Tetrachloroethene	1.11		0.199	0.500	1	10/21/2019 12:23	WG1366365
Toluene	2.01		0.412	0.500	1	10/21/2019 12:23	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 12:23	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 12:23	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 12:23	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 12:23	WG1366365
Trichloroethene	0.497	J	0.153	0.500	1	10/21/2019 12:23	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 12:23	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 12:23	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 12:23	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 12:23	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 12:23	WG1366365
Vinyl acetate	U	JO	0.645	5.00	1	10/21/2019 12:23	WG1366365
Vinyl chloride	6.37		0.118	0.500	1	10/23/2019 02:10	WG1367719
Xylenes, Total	U		0.316	1.50	1	10/21/2019 12:23	WG1366365
(S) Toluene-d8	99.9			80.0-120		10/21/2019 12:23	WG1366365
(S) Toluene-d8	96.5			80.0-120		10/23/2019 02:10	WG1367719
(S) 4-Bromofluorobenzene	95.2			77.0-126		10/21/2019 12:23	WG1366365
(S) 4-Bromofluorobenzene	102			77.0-126		10/23/2019 02:10	WG1367719

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	84.3			70.0-130		10/21/2019 12:23	WG1366365
(S) 1,2-Dichloroethane-d4	98.3			70.0-130		10/23/2019 02:10	WG1367719

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	197000		2710	20000	1	10/18/2019 11:44	WG1365104

Sample Narrative:

L1149851-04 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	17100		51.9	1000	1	10/16/2019 00:08	WG1363086
Nitrate	U		22.7	100	1	10/16/2019 00:08	WG1363086
Sulfate	37200		77.4	5000	1	10/16/2019 00:08	WG1363086

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3780	<u>B</u>	102	1000	1	10/17/2019 04:56	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	1330		15.0	100	1	10/21/2019 11:32	WG1364629
Manganese	838		0.250	5.00	1	10/21/2019 11:32	WG1364629

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/18/2019 05:24	WG1364938
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		10/18/2019 05:24	WG1364938

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	203		0.287	0.678	1	10/16/2019 13:27	WG1363432
Ethane	U		0.296	1.29	1	10/16/2019 13:27	WG1363432
Ethene	69.9		0.422	1.27	1	10/16/2019 13:27	WG1363432

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U	<u>JO</u>	1.05	25.0	1	10/21/2019 12:43	WG1366365
Acrylonitrile	U	<u>JO</u>	0.873	5.00	1	10/21/2019 12:43	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 12:43	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 12:43	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 12:43	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 12:43	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 12:43	WG1366365
Bromomethane	U	<u>JO</u>	0.157	2.50	1	10/21/2019 12:43	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 12:43	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 12:43	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 12:43	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 12:43	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 12:43	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/14/19 11:30

L1149851

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/21/2019 12:43	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 12:43	WG1366365
Chloroethane	0.362	J	0.141	2.50	1	10/21/2019 12:43	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 12:43	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 12:43	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 12:43	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 12:43	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 12:43	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 12:43	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 12:43	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 12:43	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 12:43	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 12:43	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 12:43	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 12:43	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 12:43	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 12:43	WG1366365
cis-1,2-Dichloroethene	2.23		0.0933	0.500	1	10/23/2019 02:30	WG1367719
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 12:43	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 12:43	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 12:43	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 12:43	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 12:43	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 12:43	WG1366365
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/21/2019 12:43	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 12:43	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 12:43	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 12:43	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 12:43	WG1366365
2-Hexanone	U	JO	0.757	5.00	1	10/21/2019 12:43	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 12:43	WG1366365
Iodomethane	U	JO	0.377	10.0	1	10/21/2019 12:43	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 12:43	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 12:43	WG1366365
2-Butanone (MEK)	U	JO	1.28	5.00	1	10/21/2019 12:43	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 12:43	WG1366365
4-Methyl-2-pentanone (MIBK)	U	JO	0.823	5.00	1	10/21/2019 12:43	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 12:43	WG1366365
Naphthalene	U	JO	0.174	2.50	1	10/21/2019 12:43	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 12:43	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 12:43	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 12:43	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 12:43	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 12:43	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 12:43	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 12:43	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 12:43	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 12:43	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 12:43	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 12:43	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 12:43	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 12:43	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 12:43	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 12:43	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 12:43	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 12:43	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/21/2019 12:43	WG1366365
Vinyl chloride	18.2		0.118	0.500	1	10/23/2019 02:30	WG1367719
Xylenes, Total	U		0.316	1.50	1	10/21/2019 12:43	WG1366365
(S) Toluene-d8	96.3			80.0-120		10/21/2019 12:43	WG1366365
(S) Toluene-d8	95.3			80.0-120		10/23/2019 02:30	WG1367719
(S) 4-Bromofluorobenzene	91.4			77.0-126		10/21/2019 12:43	WG1366365
(S) 4-Bromofluorobenzene	102			77.0-126		10/23/2019 02:30	WG1367719
(S) 1,2-Dichloroethane-d4	83.1			70.0-130		10/21/2019 12:43	WG1366365
(S) 1,2-Dichloroethane-d4	98.2			70.0-130		10/23/2019 02:30	WG1367719

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	186000		2710	20000	1	10/18/2019 11:52	WG1365104

Sample Narrative:

L1149851-05 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	18400		51.9	1000	1	10/16/2019 00:23	WG1363086
Nitrate	1580		22.7	100	1	10/16/2019 00:23	WG1363086
Sulfate	87800		77.4	5000	1	10/16/2019 00:23	WG1363086

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1920	<u>B</u>	102	1000	1	10/17/2019 05:16	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	173		15.0	100	1	10/21/2019 11:58	WG1364629
Manganese	129		0.250	5.00	1	10/21/2019 11:58	WG1364629

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/18/2019 05:48	WG1364938
(S) a,a,a-Trifluorotoluene(FID)	109			78.0-120		10/18/2019 05:48	WG1364938

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	U		0.287	0.678	1	10/17/2019 11:11	WG1364418
Ethane	U		0.296	1.29	1	10/17/2019 11:11	WG1364418
Ethene	U		0.422	1.27	1	10/17/2019 11:11	WG1364418

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U	<u>JO</u>	1.05	25.0	1	10/21/2019 13:02	WG1366365
Acrylonitrile	U	<u>JO</u>	0.873	5.00	1	10/21/2019 13:02	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 13:02	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 13:02	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 13:02	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 13:02	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 13:02	WG1366365
Bromomethane	U	<u>JO</u>	0.157	2.50	1	10/21/2019 13:02	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 13:02	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 13:02	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 13:02	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 13:02	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 13:02	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/21/2019 13:02	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 13:02	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 13:02	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 13:02	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 13:02	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 13:02	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 13:02	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 13:02	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 13:02	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 13:02	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 13:02	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 13:02	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 13:02	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 13:02	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 13:02	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 13:02	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 13:02	WG1366365
cis-1,2-Dichloroethene	1.40		0.0933	0.500	1	10/23/2019 02:50	WG1367719
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 13:02	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 13:02	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 13:02	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 13:02	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 13:02	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 13:02	WG1366365
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/21/2019 13:02	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 13:02	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 13:02	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 13:02	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 13:02	WG1366365
2-Hexanone	U	JO	0.757	5.00	1	10/21/2019 13:02	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 13:02	WG1366365
Iodomethane	U	JO	0.377	10.0	1	10/21/2019 13:02	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 13:02	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 13:02	WG1366365
2-Butanone (MEK)	U	JO	1.28	5.00	1	10/21/2019 13:02	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 13:02	WG1366365
4-Methyl-2-pentanone (MIBK)	U	JO	0.823	5.00	1	10/21/2019 13:02	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 13:02	WG1366365
Naphthalene	U	JO	0.174	2.50	1	10/21/2019 13:02	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 13:02	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 13:02	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 13:02	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 13:02	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 13:02	WG1366365
Tetrachloroethene	4.99		0.199	0.500	1	10/21/2019 13:02	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 13:02	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 13:02	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 13:02	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 13:02	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 13:02	WG1366365
Trichloroethene	0.445	J	0.153	0.500	1	10/21/2019 13:02	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 13:02	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 13:02	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 13:02	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 13:02	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 13:02	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/21/2019 13:02	WG1366365
Vinyl chloride	U		0.118	0.500	1	10/23/2019 02:50	WG1367719
Xylenes, Total	U		0.316	1.50	1	10/21/2019 13:02	WG1366365
(S) Toluene-d8	95.1			80.0-120		10/21/2019 13:02	WG1366365
(S) Toluene-d8	97.5			80.0-120		10/23/2019 02:50	WG1367719
(S) 4-Bromofluorobenzene	91.0			77.0-126		10/21/2019 13:02	WG1366365
(S) 4-Bromofluorobenzene	105			77.0-126		10/23/2019 02:50	WG1367719
(S) 1,2-Dichloroethane-d4	83.6			70.0-130		10/21/2019 13:02	WG1366365
(S) 1,2-Dichloroethane-d4	103			70.0-130		10/23/2019 02:50	WG1367719

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	182000		2710	20000	1	10/18/2019 11:59	WG1365104

Sample Narrative:

L1149851-06 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	7800		51.9	1000	1	10/15/2019 16:07	WG1363090
Nitrate	58.4	J	22.7	100	1	10/15/2019 16:07	WG1363090
Sulfate	5820		77.4	5000	1	10/15/2019 16:07	WG1363090

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	1190	B	102	1000	1	10/17/2019 05:34	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	348		15.0	100	1	10/21/2019 12:02	WG1364629
Manganese	212		0.250	5.00	1	10/21/2019 12:02	WG1364629

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	U		0.287	0.678	1	10/17/2019 11:14	WG1364418
Ethane	U		0.296	1.29	1	10/17/2019 11:14	WG1364418
Ethene	U		0.422	1.27	1	10/17/2019 11:14	WG1364418

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U	JO	1.05	25.0	1	10/21/2019 13:22	WG1366365
Acrylonitrile	U	JO	0.873	5.00	1	10/21/2019 13:22	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 13:22	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 13:22	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 13:22	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 13:22	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 13:22	WG1366365
Bromomethane	U	JO	0.157	2.50	1	10/21/2019 13:22	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 13:22	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 13:22	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 13:22	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 13:22	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 13:22	WG1366365
Chlorobenzene	U		0.140	0.500	1	10/21/2019 13:22	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 13:22	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 13:22	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 13:22	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 13:22	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 13:22	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 13:22	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 13:22	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 13:22	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 13:22	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 13:22	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 13:22	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 13:22	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 13:22	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 13:22	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 13:22	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 13:22	WG1366365
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/23/2019 03:11	WG1367719
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 13:22	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 13:22	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 13:22	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 13:22	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 13:22	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 13:22	WG1366365
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/21/2019 13:22	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 13:22	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 13:22	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 13:22	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 13:22	WG1366365
2-Hexanone	U	JO	0.757	5.00	1	10/21/2019 13:22	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 13:22	WG1366365
Iodomethane	U	JO	0.377	10.0	1	10/21/2019 13:22	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 13:22	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 13:22	WG1366365
2-Butanone (MEK)	U	JO	1.28	5.00	1	10/21/2019 13:22	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 13:22	WG1366365
4-Methyl-2-pentanone (MIBK)	U	JO	0.823	5.00	1	10/21/2019 13:22	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 13:22	WG1366365
Naphthalene	U	JO	0.174	2.50	1	10/21/2019 13:22	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 13:22	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 13:22	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 13:22	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 13:22	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 13:22	WG1366365
Tetrachloroethene	0.223	J	0.199	0.500	1	10/21/2019 13:22	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 13:22	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 13:22	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 13:22	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 13:22	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 13:22	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 13:22	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 13:22	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 13:22	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 13:22	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 13:22	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 13:22	WG1366365
Vinyl acetate	U	JO	0.645	5.00	1	10/21/2019 13:22	WG1366365
Vinyl chloride	U		0.118	0.500	1	10/23/2019 03:11	WG1367719
Xylenes, Total	U		0.316	1.50	1	10/21/2019 13:22	WG1366365
(S) Toluene-d8	99.6			80.0-120		10/21/2019 13:22	WG1366365
(S) Toluene-d8	95.7			80.0-120		10/23/2019 03:11	WG1367719
(S) 4-Bromofluorobenzene	93.7			77.0-126		10/21/2019 13:22	WG1366365
(S) 4-Bromofluorobenzene	108			77.0-126		10/23/2019 03:11	WG1367719

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	83.3			70.0-130		10/21/2019 13:22	WG1366365
(S) 1,2-Dichloroethane-d4	102			70.0-130		10/23/2019 03:11	WG1367719

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	222000		2710	20000	1	10/18/2019 12:06	WG1365104

Sample Narrative:

L1149851-07 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	29100		51.9	1000	1	10/15/2019 16:33	WG1363090
Nitrate	U		22.7	100	1	10/15/2019 16:33	WG1363090
Sulfate	7700		77.4	5000	1	10/15/2019 16:33	WG1363090

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	1970	<u>B</u>	102	1000	1	10/17/2019 05:51	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	159		15.0	100	1	10/21/2019 12:05	WG1364629
Manganese	229		0.250	5.00	1	10/21/2019 12:05	WG1364629

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	324		0.287	0.678	1	10/17/2019 11:17	WG1364418
Ethane	20.9		0.296	1.29	1	10/17/2019 11:17	WG1364418
Ethene	20.1		0.422	1.27	1	10/17/2019 11:17	WG1364418

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.25	<u>J JO</u>	1.05	25.0	1	10/21/2019 13:41	WG1366365
Acrylonitrile	U	<u>JO</u>	0.873	5.00	1	10/21/2019 13:41	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 13:41	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 13:41	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 13:41	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 13:41	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 13:41	WG1366365
Bromomethane	U	<u>JO</u>	0.157	2.50	1	10/21/2019 13:41	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 13:41	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 13:41	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 13:41	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 13:41	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 13:41	WG1366365
Chlorobenzene	U		0.140	0.500	1	10/21/2019 13:41	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 13:41	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 13:41	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 13:41	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 13:41	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 13:41	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 13:41	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/14/19 13:25

L1149851

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 13:41	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 13:41	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 13:41	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 13:41	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 13:41	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 13:41	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 13:41	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 13:41	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 13:41	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 13:41	WG1366365
cis-1,2-Dichloroethene	0.413	<u>J</u>	0.0933	0.500	1	10/23/2019 03:31	WG1367719
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 13:41	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 13:41	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 13:41	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 13:41	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 13:41	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 13:41	WG1366365
trans-1,4-Dichloro-2-butene	U	<u>JO</u>	0.257	5.00	1	10/21/2019 13:41	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 13:41	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 13:41	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 13:41	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 13:41	WG1366365
2-Hexanone	U	<u>JO</u>	0.757	5.00	1	10/21/2019 13:41	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 13:41	WG1366365
Iodomethane	U	<u>JO</u>	0.377	10.0	1	10/21/2019 13:41	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 13:41	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 13:41	WG1366365
2-Butanone (MEK)	U	<u>JO</u>	1.28	5.00	1	10/21/2019 13:41	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 13:41	WG1366365
4-Methyl-2-pentanone (MIBK)	U	<u>JO</u>	0.823	5.00	1	10/21/2019 13:41	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 13:41	WG1366365
Naphthalene	U	<u>JO</u>	0.174	2.50	1	10/21/2019 13:41	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 13:41	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 13:41	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 13:41	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 13:41	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 13:41	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 13:41	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 13:41	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 13:41	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 13:41	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 13:41	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 13:41	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 13:41	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 13:41	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 13:41	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 13:41	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 13:41	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 13:41	WG1366365
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/21/2019 13:41	WG1366365
Vinyl chloride	8.63		0.118	0.500	1	10/23/2019 03:31	WG1367719
Xylenes, Total	U		0.316	1.50	1	10/21/2019 13:41	WG1366365
(S) Toluene-d8	97.1			80.0-120		10/21/2019 13:41	WG1366365
(S) Toluene-d8	94.2			80.0-120		10/23/2019 03:31	WG1367719
(S) 4-Bromofluorobenzene	90.6			77.0-126		10/21/2019 13:41	WG1366365
(S) 4-Bromofluorobenzene	101			77.0-126		10/23/2019 03:31	WG1367719

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	81.7			70.0-130		10/21/2019 13:41	WG1366365
(S) 1,2-Dichloroethane-d4	108			70.0-130		10/23/2019 03:31	WG1367719

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	339000		2710	20000	1	10/18/2019 12:13	WG1365104

Sample Narrative:

L1149851-08 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	23200		51.9	1000	1	10/15/2019 17:38	WG1363090
Nitrate	U		22.7	100	1	10/15/2019 17:38	WG1363090
Sulfate	28000		77.4	5000	1	10/15/2019 17:38	WG1363090

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	6700	<u>B</u>	510	5000	5	10/17/2019 16:35	WG1364260

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	9370		15.0	100	1	10/21/2019 12:09	WG1364629
Manganese	919		0.250	5.00	1	10/21/2019 12:09	WG1364629

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	513		31.6	100	1	10/18/2019 06:12	WG1364938
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		10/18/2019 06:12	WG1364938

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	7830		2.87	6.78	10	10/18/2019 13:08	WG1365165
Ethane	2.94		0.296	1.29	1	10/17/2019 11:26	WG1364418
Ethene	457		0.422	1.27	1	10/17/2019 11:26	WG1364418

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U	<u>JO</u>	1.05	25.0	1	10/21/2019 14:01	WG1366365
Acrylonitrile	U	<u>JO</u>	0.873	5.00	1	10/21/2019 14:01	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 14:01	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 14:01	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 14:01	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 14:01	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 14:01	WG1366365
Bromomethane	U	<u>JO</u>	0.157	2.50	1	10/21/2019 14:01	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 14:01	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 14:01	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 14:01	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 14:01	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 14:01	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/21/2019 14:01	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 14:01	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 14:01	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 14:01	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 14:01	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 14:01	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 14:01	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 14:01	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 14:01	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 14:01	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 14:01	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 14:01	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 14:01	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 14:01	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 14:01	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 14:01	WG1366365
1,1-Dichloroethene	1.92		0.188	0.500	1	10/21/2019 14:01	WG1366365
cis-1,2-Dichloroethene	597		2.33	12.5	25	10/23/2019 03:51	WG1367719
trans-1,2-Dichloroethene	2.91		0.152	0.500	1	10/21/2019 14:01	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 14:01	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 14:01	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 14:01	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 14:01	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 14:01	WG1366365
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/21/2019 14:01	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 14:01	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 14:01	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 14:01	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 14:01	WG1366365
2-Hexanone	U	JO	0.757	5.00	1	10/21/2019 14:01	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 14:01	WG1366365
Iodomethane	U	JO	0.377	10.0	1	10/21/2019 14:01	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 14:01	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 14:01	WG1366365
2-Butanone (MEK)	U	JO	1.28	5.00	1	10/21/2019 14:01	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 14:01	WG1366365
4-Methyl-2-pentanone (MIBK)	U	JO	0.823	5.00	1	10/21/2019 14:01	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 14:01	WG1366365
Naphthalene	U	JO	0.174	2.50	1	10/21/2019 14:01	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 14:01	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 14:01	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 14:01	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 14:01	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 14:01	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 14:01	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 14:01	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 14:01	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 14:01	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 14:01	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 14:01	WG1366365
Trichloroethene	3.38		0.153	0.500	1	10/21/2019 14:01	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 14:01	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 14:01	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 14:01	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 14:01	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 14:01	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/21/2019 14:01	WG1366365
Vinyl chloride	1410		2.95	12.5	25	10/23/2019 03:51	WG1367719
Xylenes, Total	U		0.316	1.50	1	10/21/2019 14:01	WG1366365
(S) Toluene-d8	98.9			80.0-120		10/21/2019 14:01	WG1366365
(S) Toluene-d8	96.4			80.0-120		10/23/2019 03:51	WG1367719
(S) 4-Bromofluorobenzene	95.6			77.0-126		10/21/2019 14:01	WG1366365
(S) 4-Bromofluorobenzene	102			77.0-126		10/23/2019 03:51	WG1367719
(S) 1,2-Dichloroethane-d4	81.8			70.0-130		10/21/2019 14:01	WG1366365
(S) 1,2-Dichloroethane-d4	102			70.0-130		10/23/2019 03:51	WG1367719

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	289000		2710	20000	1	10/18/2019 12:20	WG1365104

Sample Narrative:

L1149851-09 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	26000		51.9	1000	1	10/15/2019 17:51	WG1363090
Nitrate	U		22.7	100	1	10/15/2019 17:51	WG1363090
Sulfate	14400		77.4	5000	1	10/15/2019 17:51	WG1363090

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1280	<u>B</u>	102	1000	1	10/17/2019 16:53	WG1364260

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	1390		15.0	100	1	10/21/2019 12:13	WG1364629
Manganese	737		0.250	5.00	1	10/21/2019 12:13	WG1364629

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	54.7	<u>B, J</u>	31.6	100	1	10/23/2019 02:14	WG1367521
(S) a,a,a-Trifluorotoluene(FID)	103			78.0-120		10/23/2019 02:14	WG1367521

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	226		0.287	0.678	1	10/17/2019 13:20	WG1364418
Ethane	U		0.296	1.29	1	10/17/2019 13:20	WG1364418
Ethene	U		0.422	1.27	1	10/17/2019 13:20	WG1364418

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U	<u>JO</u>	1.05	25.0	1	10/21/2019 14:21	WG1366365
Acrylonitrile	U	<u>JO</u>	0.873	5.00	1	10/21/2019 14:21	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 14:21	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 14:21	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 14:21	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 14:21	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 14:21	WG1366365
Bromomethane	U	<u>JO</u>	0.157	2.50	1	10/21/2019 14:21	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 14:21	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 14:21	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 14:21	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 14:21	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 14:21	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/21/2019 14:21	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 14:21	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 14:21	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 14:21	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 14:21	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 14:21	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 14:21	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 14:21	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 14:21	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 14:21	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 14:21	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 14:21	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 14:21	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 14:21	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 14:21	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 14:21	WG1366365
1,1-Dichloroethene	0.451	<u>J</u>	0.188	0.500	1	10/21/2019 14:21	WG1366365
cis-1,2-Dichloroethene	1.30		0.0933	0.500	1	10/23/2019 04:11	WG1367719
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 14:21	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 14:21	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 14:21	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 14:21	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 14:21	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 14:21	WG1366365
trans-1,4-Dichloro-2-butene	U	<u>JO</u>	0.257	5.00	1	10/21/2019 14:21	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 14:21	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 14:21	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 14:21	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 14:21	WG1366365
2-Hexanone	U	<u>JO</u>	0.757	5.00	1	10/21/2019 14:21	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 14:21	WG1366365
Iodomethane	U	<u>JO</u>	0.377	10.0	1	10/21/2019 14:21	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 14:21	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 14:21	WG1366365
2-Butanone (MEK)	U	<u>JO</u>	1.28	5.00	1	10/21/2019 14:21	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 14:21	WG1366365
4-Methyl-2-pentanone (MIBK)	U	<u>JO</u>	0.823	5.00	1	10/21/2019 14:21	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 14:21	WG1366365
Naphthalene	U	<u>JO</u>	0.174	2.50	1	10/21/2019 14:21	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 14:21	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 14:21	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 14:21	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 14:21	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 14:21	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 14:21	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 14:21	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 14:21	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 14:21	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 14:21	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 14:21	WG1366365
Trichloroethene	0.978		0.153	0.500	1	10/21/2019 14:21	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 14:21	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 14:21	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 14:21	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 14:21	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 14:21	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/21/2019 14:21	WG1366365
Vinyl chloride	U		0.118	0.500	1	10/23/2019 04:11	WG1367719
Xylenes, Total	U		0.316	1.50	1	10/21/2019 14:21	WG1366365
(S) Toluene-d8	97.1			80.0-120		10/21/2019 14:21	WG1366365
(S) Toluene-d8	94.4			80.0-120		10/23/2019 04:11	WG1367719
(S) 4-Bromofluorobenzene	90.8			77.0-126		10/21/2019 14:21	WG1366365
(S) 4-Bromofluorobenzene	104			77.0-126		10/23/2019 04:11	WG1367719
(S) 1,2-Dichloroethane-d4	80.7			70.0-130		10/21/2019 14:21	WG1366365
(S) 1,2-Dichloroethane-d4	103			70.0-130		10/23/2019 04:11	WG1367719

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	302000		2710	20000	1	10/18/2019 12:27	WG1365104

Sample Narrative:

L1149851-10 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	27400		51.9	1000	1	10/15/2019 18:04	WG1363090
Nitrate	U		22.7	100	1	10/15/2019 18:04	WG1363090
Sulfate	25000		77.4	5000	1	10/15/2019 18:04	WG1363090

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	1550	<u>B</u>	102	1000	1	10/17/2019 17:20	WG1364260

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	948		15.0	100	1	10/21/2019 12:16	WG1364629
Manganese	870		0.250	5.00	1	10/21/2019 12:16	WG1364629

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	166		0.287	0.678	1	10/17/2019 13:23	WG1364418
Ethane	17.7		0.296	1.29	1	10/17/2019 13:23	WG1364418
Ethene	13.8		0.422	1.27	1	10/17/2019 13:23	WG1364418

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U	<u>JO</u>	1.05	25.0	1	10/21/2019 14:40	WG1366365
Acrylonitrile	U	<u>JO</u>	0.873	5.00	1	10/21/2019 14:40	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 14:40	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 14:40	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 14:40	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 14:40	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 14:40	WG1366365
Bromomethane	U	<u>JO</u>	0.157	2.50	1	10/21/2019 14:40	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 14:40	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 14:40	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 14:40	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 14:40	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 14:40	WG1366365
Chlorobenzene	U		0.140	0.500	1	10/21/2019 14:40	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 14:40	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 14:40	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 14:40	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 14:40	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 14:40	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 14:40	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/14/19 14:55

L1149851

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 14:40	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 14:40	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 14:40	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 14:40	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 14:40	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 14:40	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 14:40	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 14:40	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 14:40	WG1366365
1,1-Dichloroethene	1.08		0.188	0.500	1	10/21/2019 14:40	WG1366365
cis-1,2-Dichloroethene	91.7		0.0933	0.500	1	10/21/2019 14:40	WG1366365
trans-1,2-Dichloroethene	0.158	J	0.152	0.500	1	10/21/2019 14:40	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 14:40	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 14:40	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 14:40	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 14:40	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 14:40	WG1366365
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/21/2019 14:40	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 14:40	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 14:40	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 14:40	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 14:40	WG1366365
2-Hexanone	U	JO	0.757	5.00	1	10/21/2019 14:40	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 14:40	WG1366365
Iodomethane	U	JO	0.377	10.0	1	10/21/2019 14:40	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 14:40	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 14:40	WG1366365
2-Butanone (MEK)	U	JO	1.28	5.00	1	10/21/2019 14:40	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 14:40	WG1366365
4-Methyl-2-pentanone (MIBK)	U	JO	0.823	5.00	1	10/21/2019 14:40	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 14:40	WG1366365
Naphthalene	U	JO	0.174	2.50	1	10/21/2019 14:40	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 14:40	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 14:40	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 14:40	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 14:40	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 14:40	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 14:40	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 14:40	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 14:40	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 14:40	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 14:40	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 14:40	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 14:40	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 14:40	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 14:40	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 14:40	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 14:40	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 14:40	WG1366365
Vinyl acetate	U	JO	0.645	5.00	1	10/21/2019 14:40	WG1366365
Vinyl chloride	51.8		0.118	0.500	1	10/21/2019 14:40	WG1366365
Xylenes, Total	U		0.316	1.50	1	10/21/2019 14:40	WG1366365
(S) Toluene-d8	95.4			80.0-120		10/21/2019 14:40	WG1366365
(S) 4-Bromofluorobenzene	89.6			77.0-126		10/21/2019 14:40	WG1366365
(S) 1,2-Dichloroethane-d4	82.6			70.0-130		10/21/2019 14:40	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/18/2019 01:02	WG1364938
(S) a,a,a-Trifluorotoluene(FID)	108			78.0-120		10/18/2019 01:02	WG1364938

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.29	J	1.05	25.0	1	10/25/2019 11:05	WG1369459
Acrylonitrile	U		0.873	5.00	1	10/24/2019 16:33	WG1368672
Benzene	U		0.0896	0.500	1	10/24/2019 16:33	WG1368672
Bromobenzene	U		0.133	0.500	1	10/24/2019 16:33	WG1368672
Bromodichloromethane	U		0.0800	0.500	1	10/24/2019 16:33	WG1368672
Bromochloromethane	U		0.145	0.500	1	10/24/2019 16:33	WG1368672
Bromoform	U		0.186	0.500	1	10/24/2019 16:33	WG1368672
Bromomethane	U		0.157	2.50	1	10/24/2019 16:33	WG1368672
n-Butylbenzene	U		0.143	0.500	1	10/24/2019 16:33	WG1368672
sec-Butylbenzene	U		0.134	0.500	1	10/24/2019 16:33	WG1368672
tert-Butylbenzene	U		0.183	0.500	1	10/24/2019 16:33	WG1368672
Carbon disulfide	U		0.101	0.500	1	10/24/2019 16:33	WG1368672
Carbon tetrachloride	U		0.159	0.500	1	10/24/2019 16:33	WG1368672
Chlorobenzene	U		0.140	0.500	1	10/24/2019 16:33	WG1368672
Chlorodibromomethane	U		0.128	0.500	1	10/24/2019 16:33	WG1368672
Chloroethane	U	JO	0.141	2.50	1	10/24/2019 16:33	WG1368672
Chloroform	U		0.0860	0.500	1	10/24/2019 16:33	WG1368672
Chloromethane	U		0.153	1.25	1	10/24/2019 16:33	WG1368672
2-Chlorotoluene	U		0.111	0.500	1	10/24/2019 16:33	WG1368672
4-Chlorotoluene	U		0.0972	0.500	1	10/24/2019 16:33	WG1368672
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/24/2019 16:33	WG1368672
1,2-Dibromoethane	U		0.193	0.500	1	10/24/2019 16:33	WG1368672
Dibromomethane	U		0.117	0.500	1	10/24/2019 16:33	WG1368672
1,2-Dichlorobenzene	U		0.101	0.500	1	10/24/2019 16:33	WG1368672
1,3-Dichlorobenzene	U		0.130	0.500	1	10/24/2019 16:33	WG1368672
1,4-Dichlorobenzene	U		0.121	0.500	1	10/24/2019 16:33	WG1368672
Dichlorodifluoromethane	U		0.127	2.50	1	10/24/2019 16:33	WG1368672
1,1-Dichloroethane	U		0.114	0.500	1	10/24/2019 16:33	WG1368672
1,2-Dichloroethane	U		0.108	0.500	1	10/24/2019 16:33	WG1368672
1,1-Dichloroethene	U		0.188	0.500	1	10/24/2019 16:33	WG1368672
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/24/2019 16:33	WG1368672
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/24/2019 16:33	WG1368672
1,2-Dichloropropane	U		0.190	0.500	1	10/24/2019 16:33	WG1368672
1,1-Dichloropropene	U		0.128	0.500	1	10/24/2019 16:33	WG1368672
1,3-Dichloropropane	U		0.147	1.00	1	10/24/2019 16:33	WG1368672
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/24/2019 16:33	WG1368672
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/24/2019 16:33	WG1368672
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/24/2019 16:33	WG1368672
2,2-Dichloropropane	U		0.0929	0.500	1	10/24/2019 16:33	WG1368672
Di-isopropyl ether	U		0.0924	0.500	1	10/24/2019 16:33	WG1368672
Ethylbenzene	U		0.158	0.500	1	10/24/2019 16:33	WG1368672
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/24/2019 16:33	WG1368672
2-Hexanone	U		0.757	5.00	1	10/24/2019 16:33	WG1368672
n-Hexane	U		0.305	5.00	1	10/24/2019 16:33	WG1368672
Iodomethane	U		0.377	10.0	1	10/24/2019 16:33	WG1368672
Isopropylbenzene	U		0.126	0.500	1	10/24/2019 16:33	WG1368672
p-Isopropyltoluene	U		0.138	0.500	1	10/24/2019 16:33	WG1368672
2-Butanone (MEK)	U		1.28	5.00	1	10/24/2019 16:33	WG1368672



Collected date/time: 10/14/19 15:30

L1149851

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methylene Chloride	U		1.07	2.50	1	10/24/2019 16:33	WG1368672
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/24/2019 16:33	WG1368672
Methyl tert-butyl ether	U		0.102	0.500	1	10/24/2019 16:33	WG1368672
Naphthalene	U		0.174	2.50	1	10/24/2019 16:33	WG1368672
n-Propylbenzene	U		0.162	0.500	1	10/24/2019 16:33	WG1368672
Styrene	U		0.117	0.500	1	10/24/2019 16:33	WG1368672
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/24/2019 16:33	WG1368672
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/24/2019 16:33	WG1368672
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/24/2019 16:33	WG1368672
Tetrachloroethene	U		0.199	0.500	1	10/24/2019 16:33	WG1368672
Toluene	U		0.412	0.500	1	10/24/2019 16:33	WG1368672
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/24/2019 16:33	WG1368672
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/24/2019 16:33	WG1368672
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/24/2019 16:33	WG1368672
1,1,2-Trichloroethane	U		0.186	0.500	1	10/24/2019 16:33	WG1368672
Trichloroethene	U		0.153	0.500	1	10/24/2019 16:33	WG1368672
Trichlorofluoromethane	U		0.130	2.50	1	10/24/2019 16:33	WG1368672
1,2,3-Trichloropropane	U		0.247	2.50	1	10/24/2019 16:33	WG1368672
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/24/2019 16:33	WG1368672
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/24/2019 16:33	WG1368672
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/24/2019 16:33	WG1368672
Vinyl acetate	U	<u>J4</u>	0.645	5.00	1	10/24/2019 16:33	WG1368672
Vinyl chloride	U		0.118	0.500	1	10/24/2019 16:33	WG1368672
Xylenes, Total	U		0.316	1.50	1	10/24/2019 16:33	WG1368672
(S) Toluene-d8	105			80.0-120		10/24/2019 16:33	WG1368672
(S) Toluene-d8	97.2			80.0-120		10/25/2019 11:05	WG1369459
(S) 4-Bromofluorobenzene	99.0			77.0-126		10/24/2019 16:33	WG1368672
(S) 4-Bromofluorobenzene	106			77.0-126		10/25/2019 11:05	WG1369459
(S) 1,2-Dichloroethane-d4	100			70.0-130		10/24/2019 16:33	WG1368672
(S) 1,2-Dichloroethane-d4	98.7			70.0-130		10/25/2019 11:05	WG1369459

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3462708-1 10/18/19 10:07

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	3710	↓	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1147295-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1147295-01 10/18/19 10:17 • (DUP) R3462708-2 10/18/19 10:27

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	168000	168000	1	0.177		20

Sample Narrative:

OS: Endpoint pH 4.5 HEADSPACE

DUP: Endpoint pH 4.5

L1149977-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1149977-02 10/18/19 12:40 • (DUP) R3462708-4 10/18/19 12:54

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	41000	40700	1	0.520		20

Sample Narrative:

OS: Endpoint pH 4.5 HEADSPACE

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3462708-3 10/18/19 11:28

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	99200	99.2	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3461441-1 10/15/19 14:23

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	U		51.9	1000
Nitrate	U		22.7	100
Sulfate	U		77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1149795-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1149795-01 10/15/19 16:27 • (DUP) R3461441-3 10/15/19 16:42

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	22700	22600	1	0.451		15
Nitrate	ND	0.000	1	0.000		15
Sulfate	56400	56500	1	0.179		15

L1149841-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1149841-01 10/15/19 22:13 • (DUP) R3461441-6 10/15/19 22:28

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	14000	13900	1	0.362		15
Nitrate	137	133	1	2.88		15
Sulfate	184000	184000	1	0.128	E	15

Laboratory Control Sample (LCS)

(LCS) R3461441-2 10/15/19 14:37

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Chloride	40000	39400	98.5	80.0-120	
Nitrate	8000	8120	101	80.0-120	
Sulfate	40000	40700	102	80.0-120	



L1149811-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1149811-01 10/15/19 16:56 • (MS) R3461441-4 10/15/19 17:11 • (MSD) R3461441-5 10/15/19 17:25

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	236000	274000	275000	76.0	76.6	1	80.0-120	<u>EV</u>	<u>EV</u>	0.106	15
Nitrate	5000	1280	6260	6360	99.6	102	1	80.0-120			1.62	15
Sulfate	50000	15400	65900	65700	101	101	1	80.0-120			0.364	15

L1149851-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1149851-02 10/15/19 22:56 • (MS) R3461441-7 10/15/19 23:11

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	23300	72800	99.1	1	80.0-120	
Nitrate	5000	U	4920	98.3	1	80.0-120	
Sulfate	50000	20600	70400	99.6	1	80.0-120	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3461431-1 10/15/19 09:38

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	61.6	↓	51.9	1000
Nitrate	U		22.7	100
Sulfate	107	↓	77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1149872-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1149872-02 10/15/19 15:14 • (DUP) R3461431-3 10/15/19 15:28

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	45800	46100	1	0.661		15
Nitrate	7420	7470	1	0.687		15
Sulfate	23000	23100	1	0.167		15

L1149851-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1149851-06 10/15/19 16:07 • (DUP) R3461431-5 10/15/19 16:20

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	7800	7500	1	3.90		15
Nitrate	58.4	55.7	1	4.73	↓	15
Sulfate	5820	5840	1	0.295		15

Laboratory Control Sample (LCS)

(LCS) R3461431-2 10/15/19 09:51

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Chloride	40000	38700	96.7	80.0-120	
Nitrate	8000	8030	100	80.0-120	
Sulfate	40000	38900	97.3	80.0-120	



[L1149851-06,07,08,09,10](#)

L1149872-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1149872-02 10/15/19 15:14 • (MS) R3461431-4 10/15/19 15:41

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	45800	92500	93.3	1	80.0-120	
Nitrate	5000	7420	12000	91.3	1	80.0-120	E
Sulfate	50000	23000	71100	96.2	1	80.0-120	

L1149851-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1149851-07 10/15/19 16:33 • (MS) R3461431-6 10/15/19 17:12 • (MSD) R3461431-7 10/15/19 17:25

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	29100	76400	76200	94.7	94.1	1	80.0-120			0.345	15
Nitrate	5000	U	4960	4970	99.3	99.4	1	80.0-120			0.111	15
Sulfate	50000	7700	56500	56100	97.5	96.9	1	80.0-120			0.571	15

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3462022-1 10/16/19 18:09

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	416	↓	102	1000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1149387-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1149387-08 10/16/19 21:34 • (DUP) R3462022-3 10/16/19 21:57

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC	6970	7050	1	1.08		20

L1149591-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1149591-06 10/17/19 08:46 • (DUP) R3462022-9 10/17/19 09:03

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC	489	421	1	15.1	↓	20

Laboratory Control Sample (LCS)

(LCS) R3462022-2 10/16/19 18:52

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC	75000	69000	92.0	85.0-115	

L1149591-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1149591-04 10/17/19 00:20 • (MS) R3462022-4 10/17/19 00:42 • (MSD) R3462022-5 10/17/19 01:04

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC	50000	5870	53200	54900	94.7	98.1	1	80.0-120			3.11	20

L1149851-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1149851-03 10/17/19 03:58 • (MS) R3462022-7 10/17/19 04:19 • (MSD) R3462022-8 10/17/19 04:40

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC	50000	2950	50000	49700	94.1	93.5	1	80.0-120			0.542	20



Method Blank (MB)

(MB) R3462318-1 10/17/19 14:53

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	422	↓	102	1000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1150179-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1150179-01 10/17/19 17:59 • (DUP) R3462318-3 10/17/19 18:20

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC	1500	1460	1	2.78		20

L1150179-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1150179-07 10/17/19 22:20 • (DUP) R3462318-6 10/17/19 22:46

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC	130000	127000	5	2.26		20

Laboratory Control Sample (LCS)

(LCS) R3462318-2 10/17/19 15:36

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC	75000	69500	92.6	85.0-115	

L1150179-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1150179-04 10/17/19 20:40 • (MS) R3462318-4 10/17/19 21:01 • (MSD) R3462318-5 10/17/19 21:22

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC	50000	ND	47200	48700	93.1	96.1	1	80.0-120			3.17	20

L1150234-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1150234-01 10/18/19 01:16 • (MS) R3462318-7 10/18/19 01:39 • (MSD) R3462318-8 10/18/19 02:01

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC	50000	7380	55600	55000	96.4	95.2	1	80.0-120			1.01	20



Method Blank (MB)

(MB) R3463127-1 10/21/19 10:59

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Iron	U		15.0	100
Manganese	0.540	J	0.250	5.00

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3463127-2 10/21/19 11:03 • (LCSD) R3463127-3 10/21/19 11:07

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Iron	5000	5110	5090	102	102	80.0-120			0.334	20
Manganese	50.0	50.9	50.0	102	100	80.0-120			1.71	20

5 Sr

6 Qc

L1149851-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1149851-01 10/21/19 11:10 • (MS) R3463127-5 10/21/19 11:18 • (MSD) R3463127-6 10/21/19 11:21

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Iron	5000	1850	7050	6940	104	102	1	75.0-125			1.61	20

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3463331-2 10/18/19 00:25

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS)

(LCS) R3463331-1 10/17/19 23:14

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5340	97.1	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			83.7	78.0-120	

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3464239-3 10/23/19 01:29

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	62.3	↓	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	104			78.0-120

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3464239-1 10/23/19 00:19 • (LCSD) R3464239-2 10/23/19 00:41

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	6540	6030	119	110	70.0-124			8.11	20
(S) a,a,a-Trifluorotoluene(FID)				107	106	78.0-120				

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3461591-1 10/16/19 10:37

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

L1149371-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1149371-06 10/16/19 11:29 • (DUP) R3461591-2 10/16/19 12:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	1080	1130	1	4.95		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

L1149387-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1149387-04 10/16/19 13:29 • (DUP) R3461591-3 10/16/19 13:32

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	12.3	12.9	1	4.67		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3461591-4 10/16/19 13:35 • (LCSD) R3461591-5 10/16/19 13:39

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	75.3	76.3	111	112	85.0-115			1.34	20
Ethane	129	133	129	103	100	85.0-115			2.40	20
Ethene	127	138	135	109	106	85.0-115			2.67	20

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3462073-1 10/17/19 10:48

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1149851-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1149851-07 10/17/19 11:17 • (DUP) R3462073-2 10/17/19 13:16

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	324	319	1	1.78		20
Ethane	20.9	19.8	1	5.28		20
Ethene	20.1	19.4	1	3.31		20

L1150060-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1150060-01 10/17/19 13:25 • (DUP) R3462073-3 10/17/19 13:56

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	1720	1730	1	0.724		20
Ethane	97.1	98.5	1	1.46		20
Ethene	197	199	1	1.02		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3462073-4 10/17/19 14:02 • (LCSD) R3462073-5 10/17/19 14:06

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	70.5	71.5	104	106	85.0-115			1.46	20
Ethane	129	127	128	98.6	98.9	85.0-115			0.256	20
Ethene	127	133	133	104	105	85.0-115			0.285	20



Method Blank (MB)

(MB) R3462507-1 10/18/19 13:05

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Methane	U		0.287	0.678

1 Cp

2 Tc

3 Ss

4 Cn

L1150336-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1150336-08 10/18/19 13:10 • (DUP) R3462507-2 10/18/19 13:33

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	20.2	22.0	1	8.39		20

5 Sr

6 Qc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3462507-5 10/18/19 13:50 • (LCSD) R3462507-6 10/18/19 13:56

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Methane	67.8	72.3	71.6	107	106	85.0-115			0.913	20

7 Gl

8 Al

L1150339-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1150339-10 10/18/19 13:42 • (MS) R3462507-3 10/18/19 13:45 • (MSD) R3462507-4 10/18/19 13:47

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Methane	67.8	10400	10600	11000	19.7	74.1	10	85.0-115	V	V	3.43	20

9 Sc



Method Blank (MB)

(MB) R3463753-2 10/21/19 08:08

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3463753-2 10/21/19 08:08

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	98.9			80.0-120
(S) 4-Bromofluorobenzene	92.7			77.0-126
(S) 1,2-Dichloroethane-d4	83.6			70.0-130

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Laboratory Control Sample (LCS)

(LCS) R3463753-1 10/21/19 06:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Acetone	125	88.2	70.6	19.0-160	
Acrylonitrile	125	94.1	75.3	55.0-149	
Benzene	25.0	22.6	90.4	70.0-123	
Bromobenzene	25.0	24.4	97.6	73.0-121	
Bromodichloromethane	25.0	22.1	88.4	75.0-120	
Bromochloromethane	25.0	24.0	96.0	76.0-122	
Bromoform	25.0	22.6	90.4	68.0-132	
Bromomethane	25.0	19.1	76.4	10.0-160	
n-Butylbenzene	25.0	26.5	106	73.0-125	
sec-Butylbenzene	25.0	25.4	102	75.0-125	
tert-Butylbenzene	25.0	24.3	97.2	76.0-124	
Carbon disulfide	25.0	22.4	89.6	61.0-128	
Carbon tetrachloride	25.0	21.3	85.2	68.0-126	
Chlorobenzene	25.0	24.3	97.2	80.0-121	
Chlorodibromomethane	25.0	23.7	94.8	77.0-125	
Chloroethane	25.0	23.4	93.6	47.0-150	
Chloroform	25.0	22.0	88.0	73.0-120	
Chloromethane	25.0	20.1	80.4	41.0-142	
2-Chlorotoluene	25.0	24.2	96.8	76.0-123	
4-Chlorotoluene	25.0	23.4	93.6	75.0-122	
1,2-Dibromo-3-Chloropropane	25.0	20.3	81.2	58.0-134	
1,2-Dibromoethane	25.0	23.5	94.0	80.0-122	
Dibromomethane	25.0	22.3	89.2	80.0-120	
1,2-Dichlorobenzene	25.0	26.3	105	79.0-121	
1,3-Dichlorobenzene	25.0	26.7	107	79.0-120	
1,4-Dichlorobenzene	25.0	26.5	106	79.0-120	
Dichlorodifluoromethane	25.0	25.4	102	51.0-149	
1,1-Dichloroethane	25.0	21.3	85.2	70.0-126	
1,2-Dichloroethane	25.0	20.1	80.4	70.0-128	
1,1-Dichloroethene	25.0	25.6	102	71.0-124	
cis-1,2-Dichloroethene	25.0	24.1	96.4	73.0-120	
trans-1,2-Dichloroethene	25.0	23.2	92.8	73.0-120	
1,2-Dichloropropane	25.0	21.0	84.0	77.0-125	
1,1-Dichloropropene	25.0	23.7	94.8	74.0-126	
1,3-Dichloropropane	25.0	24.3	97.2	80.0-120	
cis-1,3-Dichloropropene	25.0	22.0	88.0	80.0-123	
trans-1,3-Dichloropropene	25.0	22.8	91.2	78.0-124	
trans-1,4-Dichloro-2-butene	25.0	14.8	59.2	33.0-144	
2,2-Dichloropropane	25.0	20.1	80.4	58.0-130	
Di-isopropyl ether	25.0	20.6	82.4	58.0-138	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3463753-1 10/21/19 06:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Ethylbenzene	25.0	23.6	94.4	79.0-123	
Hexachloro-1,3-butadiene	25.0	33.8	135	54.0-138	
2-Hexanone	125	98.0	78.4	67.0-149	
n-Hexane	25.0	20.8	83.2	57.0-133	
Iodomethane	125	98.7	79.0	33.0-147	
Isopropylbenzene	25.0	22.2	88.8	76.0-127	
p-Isopropyltoluene	25.0	26.5	106	76.0-125	
2-Butanone (MEK)	125	81.5	65.2	44.0-160	
Methylene Chloride	25.0	22.7	90.8	67.0-120	
4-Methyl-2-pentanone (MIBK)	125	87.8	70.2	68.0-142	
Methyl tert-butyl ether	25.0	20.5	82.0	68.0-125	
Naphthalene	25.0	19.2	76.8	54.0-135	
n-Propylbenzene	25.0	22.8	91.2	77.0-124	
Styrene	25.0	24.4	97.6	73.0-130	
1,1,1,2-Tetrachloroethane	25.0	23.8	95.2	75.0-125	
1,1,2,2-Tetrachloroethane	25.0	20.3	81.2	65.0-130	
1,1,2-Trichlorotrifluoroethane	25.0	23.1	92.4	69.0-132	
Tetrachloroethene	25.0	25.2	101	72.0-132	
Toluene	25.0	23.7	94.8	79.0-120	
1,2,3-Trichlorobenzene	25.0	26.4	106	50.0-138	
1,2,4-Trichlorobenzene	25.0	28.9	116	57.0-137	
1,1,1-Trichloroethane	25.0	20.9	83.6	73.0-124	
1,1,2-Trichloroethane	25.0	23.4	93.6	80.0-120	
Trichloroethene	25.0	23.0	92.0	78.0-124	
Trichlorofluoromethane	25.0	25.7	103	59.0-147	
1,2,3-Trichloropropane	25.0	21.3	85.2	73.0-130	
1,2,4-Trimethylbenzene	25.0	24.0	96.0	76.0-121	
1,2,3-Trimethylbenzene	25.0	24.5	98.0	77.0-120	
1,3,5-Trimethylbenzene	25.0	23.3	93.2	76.0-122	
Vinyl acetate	125	92.6	74.1	11.0-160	
Vinyl chloride	25.0	25.2	101	67.0-131	
Xylenes, Total	75.0	71.6	95.5	79.0-123	
<i>(S) Toluene-d8</i>			98.4	80.0-120	
<i>(S) 4-Bromofluorobenzene</i>			96.6	77.0-126	
<i>(S) 1,2-Dichloroethane-d4</i>			81.0	70.0-130	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3464659-2 10/23/19 00:07

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
cis-1,2-Dichloroethene	U		0.0933	0.500
Vinyl chloride	U		0.118	0.500
(S) Toluene-d8	95.1			80.0-120
(S) 4-Bromofluorobenzene	102			77.0-126
(S) 1,2-Dichloroethane-d4	101			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

Laboratory Control Sample (LCS)

(LCS) R3464659-1 10/22/19 23:26

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
cis-1,2-Dichloroethene	25.0	22.4	89.6	73.0-120	
Vinyl chloride	25.0	24.8	99.2	67.0-131	
(S) Toluene-d8			95.6	80.0-120	
(S) 4-Bromofluorobenzene			109	77.0-126	
(S) 1,2-Dichloroethane-d4			105	70.0-130	

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3464761-2 10/24/19 10:35

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500
Ethylbenzene	U		0.158	0.500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3464761-2 10/24/19 10:35

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	0.232	U	0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	0.162	U	0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	107			80.0-120
(S) 4-Bromofluorobenzene	101			77.0-126
(S) 1,2-Dichloroethane-d4	95.5			70.0-130

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Laboratory Control Sample (LCS)

(LCS) R3464761-1 10/24/19 09:38

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Acrylonitrile	125	94.6	75.7	55.0-149	
Benzene	25.0	22.2	88.8	70.0-123	
Bromobenzene	25.0	24.4	97.6	73.0-121	
Bromodichloromethane	25.0	25.0	100	75.0-120	
Bromochloromethane	25.0	22.9	91.6	76.0-122	
Bromoform	25.0	25.9	104	68.0-132	
Bromomethane	25.0	22.3	89.2	10.0-160	
n-Butylbenzene	25.0	23.1	92.4	73.0-125	
sec-Butylbenzene	25.0	23.2	92.8	75.0-125	
tert-Butylbenzene	25.0	24.8	99.2	76.0-124	
Carbon disulfide	25.0	23.5	94.0	61.0-128	
Carbon tetrachloride	25.0	26.1	104	68.0-126	
Chlorobenzene	25.0	22.9	91.6	80.0-121	
Chlorodibromomethane	25.0	24.8	99.2	77.0-125	
Chloroethane	25.0	20.3	81.2	47.0-150	
Chloroform	25.0	24.2	96.8	73.0-120	
Chloromethane	25.0	24.0	96.0	41.0-142	
2-Chlorotoluene	25.0	26.0	104	76.0-123	
4-Chlorotoluene	25.0	25.9	104	75.0-122	
1,2-Dibromo-3-Chloropropane	25.0	24.2	96.8	58.0-134	
1,2-Dibromoethane	25.0	23.0	92.0	80.0-122	
Dibromomethane	25.0	22.1	88.4	80.0-120	
1,2-Dichlorobenzene	25.0	22.7	90.8	79.0-121	
1,3-Dichlorobenzene	25.0	22.4	89.6	79.0-120	
1,4-Dichlorobenzene	25.0	22.8	91.2	79.0-120	
Dichlorodifluoromethane	25.0	29.0	116	51.0-149	
1,1-Dichloroethane	25.0	23.6	94.4	70.0-126	
1,2-Dichloroethane	25.0	22.1	88.4	70.0-128	
1,1-Dichloroethene	25.0	24.2	96.8	71.0-124	
cis-1,2-Dichloroethene	25.0	23.9	95.6	73.0-120	
trans-1,2-Dichloroethene	25.0	23.4	93.6	73.0-120	
1,2-Dichloropropane	25.0	23.4	93.6	77.0-125	
1,1-Dichloropropene	25.0	24.8	99.2	74.0-126	
1,3-Dichloropropane	25.0	22.7	90.8	80.0-120	
cis-1,3-Dichloropropene	25.0	24.9	99.6	80.0-123	
trans-1,3-Dichloropropene	25.0	24.2	96.8	78.0-124	
trans-1,4-Dichloro-2-butene	25.0	22.4	89.6	33.0-144	
2,2-Dichloropropane	25.0	31.6	126	58.0-130	
Di-isopropyl ether	25.0	23.2	92.8	58.0-138	
Ethylbenzene	25.0	22.5	90.0	79.0-123	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3464761-1 10/24/19 09:38

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Hexachloro-1,3-butadiene	25.0	33.3	133	54.0-138	
2-Hexanone	125	114	91.2	67.0-149	
n-Hexane	25.0	32.0	128	57.0-133	
Iodomethane	125	125	100	33.0-147	
Isopropylbenzene	25.0	24.3	97.2	76.0-127	
p-Isopropyltoluene	25.0	23.4	93.6	76.0-125	
2-Butanone (MEK)	125	101	80.8	44.0-160	
Methylene Chloride	25.0	23.0	92.0	67.0-120	
4-Methyl-2-pentanone (MIBK)	125	100	80.0	68.0-142	
Methyl tert-butyl ether	25.0	22.5	90.0	68.0-125	
Naphthalene	25.0	25.9	104	54.0-135	
n-Propylbenzene	25.0	25.7	103	77.0-124	
Styrene	25.0	23.4	93.6	73.0-130	
1,1,1,2-Tetrachloroethane	25.0	23.9	95.6	75.0-125	
1,1,2,2-Tetrachloroethane	25.0	25.4	102	65.0-130	
1,1,2-Trichlorotrifluoroethane	25.0	27.8	111	69.0-132	
Tetrachloroethene	25.0	26.8	107	72.0-132	
Toluene	25.0	22.5	90.0	79.0-120	
1,2,3-Trichlorobenzene	25.0	34.4	138	50.0-138	
1,2,4-Trichlorobenzene	25.0	31.2	125	57.0-137	
1,1,1-Trichloroethane	25.0	27.3	109	73.0-124	
1,1,2-Trichloroethane	25.0	22.8	91.2	80.0-120	
Trichloroethene	25.0	22.2	88.8	78.0-124	
Trichlorofluoromethane	25.0	28.2	113	59.0-147	
1,2,3-Trichloropropane	25.0	25.0	100	73.0-130	
1,2,4-Trimethylbenzene	25.0	23.4	93.6	76.0-121	
1,2,3-Trimethylbenzene	25.0	22.7	90.8	77.0-120	
1,3,5-Trimethylbenzene	25.0	26.7	107	76.0-122	
Vinyl acetate	125	228	182	11.0-160	J4
Vinyl chloride	25.0	20.7	82.8	67.0-131	
Xylenes, Total	75.0	69.5	92.7	79.0-123	
(S) Toluene-d8			104	80.0-120	
(S) 4-Bromofluorobenzene			101	77.0-126	
(S) 1,2-Dichloroethane-d4			112	70.0-130	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3465173-3 10/25/19 10:30

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
(S) Toluene-d8	95.9			80.0-120
(S) 4-Bromofluorobenzene	104			77.0-126
(S) 1,2-Dichloroethane-d4	97.9			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3465173-1 10/25/19 04:08 • (LCSD) R3465173-2 10/25/19 04:29

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	125	118	114	94.4	91.2	19.0-160			3.45	27
(S) Toluene-d8				98.9	90.3	80.0-120				
(S) 4-Bromofluorobenzene				108	86.9	77.0-126				
(S) 1,2-Dichloroethane-d4				94.8	92.1	70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration method criteria.
J4	The associated batch QC was outside the established quality control range for accuracy.
V	The sample concentration is too high to evaluate accurate spike recoveries.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

PES-Seattle
 Billing Information: PES-Seattle
 Pres Chk
 Analysis / Container / Preservative
 Chain of Custody Page 1 of 2

Pace Analytical
 National Center for Testing & Innovation

12065 Lebanon Rd
 Mount Juliet, TN 37122
 Phone: 615-758-5858
 Phone: 800-767-5859
 Fax: 615-758-5859



Report to: Bill Haldeman/Brian O'neal
 Email To: on file

Project Description: City/State Seattle, WA Collected:

Phone: on file Client Project # 1413.001.02.501E Lab Project # PESENVSWA-ALP

Fax: Collected by (print): K. [Signature] / H. [Signature] / B. [Signature] Site/Facility ID # AMERICAN LINEN P.O. #

Collected by (signature): [Signature] Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day Date Results Needed

Immediately Packed on Ice N ___ Y ___ No. of Cntrs

L# 1149851
E023

Acctnum: PESENVSWA
 Template:
 Prelogin:
 TSR: Brian Ford
 PB:
 Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	Cntrs	**NO3, SO4, Chloride**	48 hour hold	NWTPHGX	VOCs (V8260LLC)	Total Fe Mn 6020	TOC	Alkalinity	EEM (RSK175LL)	Remarks	Sample # (lab only)
MW-190-101419	Grab	GW	83	10/14/19	0910	12	X	X	X	X	X	X	X	X		01
MW-146-101419		GW	43		1015	12	X	X	X	X	X	X	X	X		02
MW-309-101419		GW	67		1035	9	X	X	X	X	X	X	X	X		03
MW-189-101419		GW	53		1130	12	X	X	X	X	X	X	X	X		04
MW-154-101419		GW	32.5		1205	12	X	X	X	X	X	X	X	X		05
MW122-101419		GW	112		1205	9	X	X	X	X	X	X	X	X		06
MW111-101419		GW	75		1325	9	X	X	X	X	X	X	X	X		07
MW-147-101419		GW	75		1355	12	X	X	X	X	X	X	X	X		08
MW-161-101419		GW	125		1428	12	X	X	X	X	X	X	X	X		09
MW103-101419		GW	108		1455	9	X	X	X	X	X	X	X	X		10

* Matrix: SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks: pH _____ Temp _____
 Flow _____ Other _____

Samples returned via: UPS FedEx Courier Tracking # 1203 5774 6562

Relinquished by: (Signature) [Signature] Date: 10/14/19 Time: 1600
 Received by: (Signature) Trip Blank Received: Yes/No
 Yes / No
 Chel / Meoh TBR

Relinquished by: (Signature) [Signature] Date: _____ Time: _____
 Received by: (Signature) Temp: °C
 S.H. 2 = 5.3 42 108
 Bottles Received: 108

Relinquished by: (Signature) [Signature] Date: _____ Time: _____
 Received for lab by: (Signature) Date: 10/15/19 Time: 8:45
 Hold: Condition: NCF 10K

Sample Receipt Checklist
 COC Seal Present/Intact: NP N
 COC Signed/Accurate: N N
 Bottles arrive intact: N N
 Correct bottles used: N N
 Sufficient volume sent: N N
 If Applicable
 VOA Zero Headspace: N N
 Preservation Correct/Checked: Y N

RAD SCREEN: <0.5 mR/hr

If preservation required by Login: Date/Time

PES-Seattle

Billing Information:
PES-Seattle

Pres
Chk

Analysis / Container / Preservative



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



Report to:
Bill Haldeman/Brian O'neal

Email To:
on file

Project
Description:

City/State Seattle, WA
Collected:

Phone: on file
Fax:

Client Project #
1413.001.02.501E

Lab Project #
PESENVSWA-ALP

Collected by (print):
R. Szyo/H. Cohen/B. Hecht

Site/Facility ID #
American Livers

P.O. #

Collected by (signature):
R. Szyo

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Immediately
Packed on Ice N ___ Y ___

No.
of
Cntrs

NO3, SO4, Chloride48 hour hold

NWTPHGX

VOCs (V8260LLC)

Total Fe Mn 6020

TOC

Alkalinity

EEM (RSK175LL)

L# 1149451
Table #
Acctnum: PESENVSWA
Template:
Prelogin:
TSR: Brian Ford
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	**NO3, SO4, Chloride**48 hour hold	NWTPHGX	VOCs (V8260LLC)	Total Fe Mn 6020	TOC	Alkalinity	EEM (RSK175LL)	Remarks	Sample # (lab only)
TB-101419	---	GW	---	10-14-19	1530	1	X	X	X	X	X	X	X	Trip Blank	11
		GW													
		GW													
		GW													
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* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

pH ___ Temp ___
Flow ___ Other ___

Samples returned via:
___ UPS ___ FedEx ___ Courier ___

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

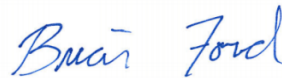
RAD SCREEN: <0.5 mR/hr

Relinquished by: (Signature) <i>R. Szyo</i>	Date: 10/14/19	Time: 1600	Received by: (Signature)	Trip Blank Received: Yes/No <input checked="" type="checkbox"/> No / <input type="checkbox"/> Yes HCL / MeOH TBR	Bottles Received: 108	If preservation required by Login: Date/Time
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C 51.2=53.4	Date: 10/15/19	Time: 8:45
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) <i>Carol Kemp</i>	Date: 10/15/19	Time: 8:45	Hold: Condition: NCF / <input checked="" type="checkbox"/>

PES Environmental, Inc.- WA

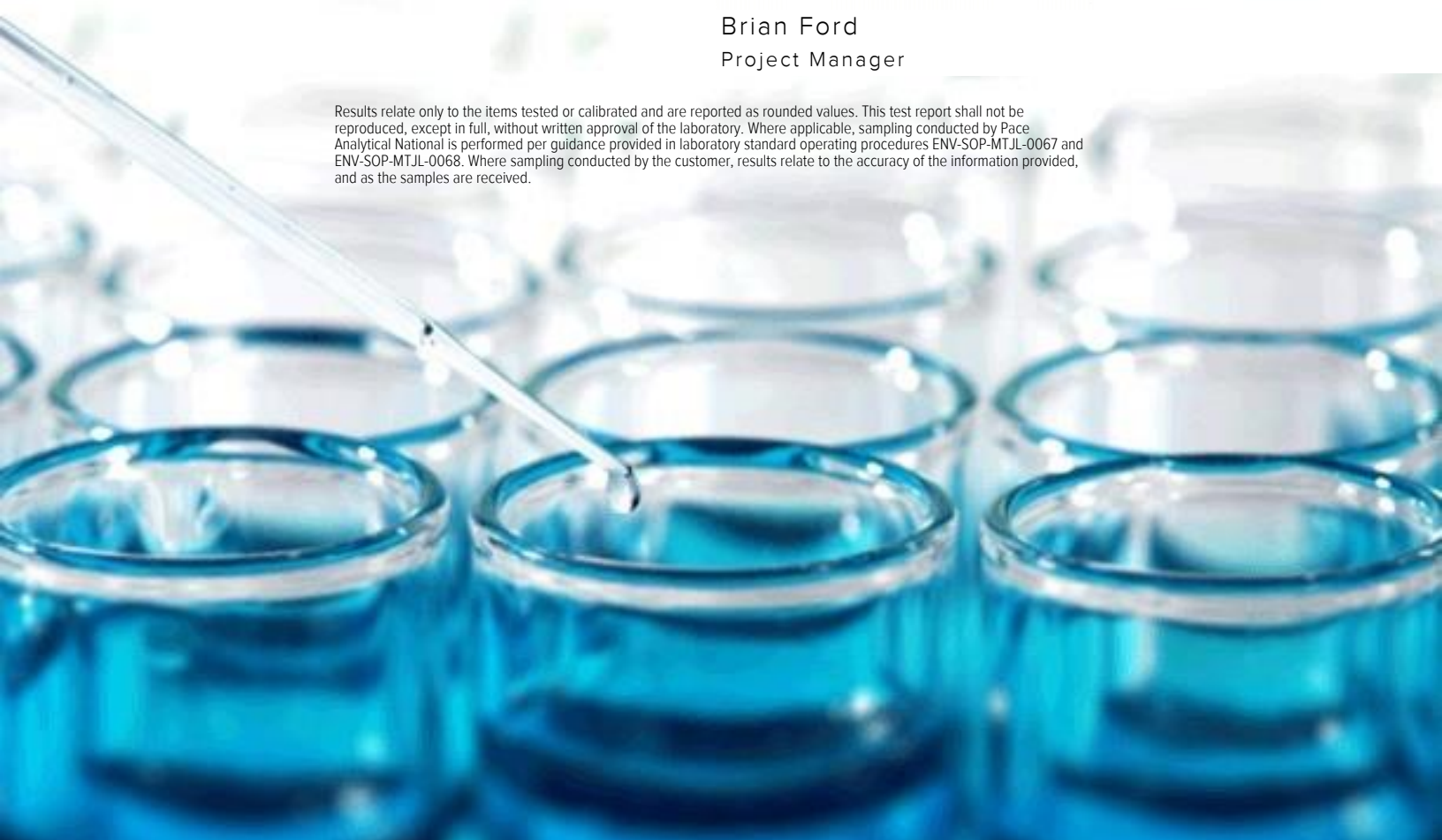
Sample Delivery Group: L1150336
Samples Received: 10/16/2019
Project Number: 1413.001.02.501E
Description: AMERICAN LINEN
Site: AMERICAN LINEN
Report To: Brian O'Neal/Bill Haldeman
1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





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SAMPLE SUMMARY



MW-917-101519 L1150336-01 GW

Collected by
KZ/BH/SM/HG
Collected date/time
10/15/19 08:00
Received date/time
10/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1366027	1	10/22/19 05:44	10/22/19 05:44	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363847	1	10/16/19 19:05	10/16/19 19:05	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1365601	1	10/19/19 18:45	10/19/19 18:45	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364631	1	10/21/19 23:59	10/22/19 14:13	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1364420	1	10/17/19 15:34	10/17/19 15:34	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1368527	1	10/24/19 05:08	10/24/19 05:08	ACG	Mt. Juliet, TN

1
Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

MW109-101519 L1150336-02 GW

Collected by
KZ/BH/SM/HG
Collected date/time
10/15/19 09:45
Received date/time
10/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1366027	1	10/22/19 05:51	10/22/19 05:51	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363847	1	10/16/19 19:18	10/16/19 19:18	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1365601	1	10/19/19 19:06	10/19/19 19:06	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364631	1	10/21/19 23:59	10/22/19 14:48	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1364420	1	10/17/19 15:37	10/17/19 15:37	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1368527	1	10/24/19 05:29	10/24/19 05:29	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1369128	20	10/24/19 20:51	10/24/19 20:51	ACG	Mt. Juliet, TN

MW-305-101519 L1150336-03 GW

Collected by
KZ/BH/SM/HG
Collected date/time
10/15/19 10:10
Received date/time
10/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1366027	1	10/22/19 05:58	10/22/19 05:58	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363847	1	10/16/19 19:31	10/16/19 19:31	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1365601	1	10/19/19 19:28	10/19/19 19:28	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364631	1	10/21/19 23:59	10/22/19 14:52	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1365317	1	10/18/19 14:44	10/18/19 14:44	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1364420	1	10/17/19 16:04	10/17/19 16:04	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1368527	1	10/24/19 05:50	10/24/19 05:50	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1369128	1	10/24/19 21:11	10/24/19 21:11	ACG	Mt. Juliet, TN

MW126-101519 L1150336-04 GW

Collected by
KZ/BH/SM/HG
Collected date/time
10/15/19 11:00
Received date/time
10/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1366029	1	10/21/19 23:52	10/21/19 23:52	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363847	1	10/16/19 19:44	10/16/19 19:44	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1365601	1	10/19/19 21:17	10/19/19 21:17	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364631	1	10/21/19 23:59	10/22/19 14:55	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1364420	1	10/17/19 15:42	10/17/19 15:42	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1368527	1	10/24/19 06:10	10/24/19 06:10	ACG	Mt. Juliet, TN

MW-306-101519 L1150336-05 GW

Collected by
KZ/BH/SM/HG
Collected date/time
10/15/19 11:40
Received date/time
10/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1366029	1	10/21/19 23:59	10/21/19 23:59	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363847	1	10/16/19 20:22	10/16/19 20:22	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1365601	1	10/19/19 21:31	10/19/19 21:31	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364631	1	10/21/19 23:59	10/22/19 14:59	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1365317	1	10/18/19 15:07	10/18/19 15:07	BMB	Mt. Juliet, TN

SAMPLE SUMMARY



MW-306-101519 L1150336-05 GW

Collected by
KZ/BH/SM/HG
Collected date/time
10/15/19 11:40
Received date/time
10/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method RSK175	WG1364420	1	10/17/19 15:44	10/17/19 15:44	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1368527	1	10/24/19 06:31	10/24/19 06:31	ACG	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

W-MW-01-101519 L1150336-06 GW

Collected by
KZ/BH/SM/HG
Collected date/time
10/15/19 12:20
Received date/time
10/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1366029	1	10/22/19 00:07	10/22/19 00:07	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363847	1	10/16/19 20:35	10/16/19 20:35	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1365601	1	10/19/19 22:38	10/19/19 22:38	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364631	1	10/21/19 23:59	10/22/19 15:03	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1365317	1	10/18/19 15:31	10/18/19 15:31	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1364420	1	10/17/19 15:50	10/17/19 15:50	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1368527	1	10/24/19 06:52	10/24/19 06:52	ACG	Mt. Juliet, TN

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

MW110-101519 L1150336-07 GW

Collected by
KZ/BH/SM/HG
Collected date/time
10/15/19 14:20
Received date/time
10/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1366029	1	10/22/19 00:15	10/22/19 00:15	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363847	1	10/16/19 20:47	10/16/19 20:47	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1365601	1	10/19/19 23:00	10/19/19 23:00	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364631	1	10/21/19 23:59	10/22/19 15:07	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1364420	1	10/17/19 15:53	10/17/19 15:53	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1368527	1	10/24/19 07:12	10/24/19 07:12	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1369128	50	10/24/19 21:32	10/24/19 21:32	ACG	Mt. Juliet, TN

9
Sc

MW-153-101519 L1150336-08 GW

Collected by
KZ/BH/SM/HG
Collected date/time
10/15/19 14:25
Received date/time
10/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1366029	1	10/22/19 00:22	10/22/19 00:22	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363847	1	10/16/19 21:00	10/16/19 21:00	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1365601	1	10/19/19 23:20	10/19/19 23:20	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364631	1	10/21/19 23:59	10/22/19 15:10	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1365317	1	10/18/19 18:42	10/18/19 18:42	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1365165	1	10/18/19 13:10	10/18/19 13:10	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1369955	1	10/25/19 22:30	10/25/19 22:30	ADM	Mt. Juliet, TN

MW-107-101519 L1150336-09 GW

Collected by
KZ/BH/SM/HG
Collected date/time
10/15/19 14:00
Received date/time
10/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1366029	1	10/22/19 00:30	10/22/19 00:30	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363847	1	10/16/19 21:13	10/16/19 21:13	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1365601	1	10/19/19 23:45	10/19/19 23:45	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364631	1	10/21/19 23:59	10/22/19 15:14	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1365317	1	10/18/19 19:06	10/18/19 19:06	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1364420	1	10/17/19 15:55	10/17/19 15:55	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1365165	10	10/18/19 13:13	10/18/19 13:13	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1369955	1	10/25/19 22:50	10/25/19 22:50	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1370146	10	10/27/19 15:29	10/27/19 15:29	ACG	Mt. Juliet, TN

SAMPLE SUMMARY



TB-101519 L1150336-10 GW

Collected by: KZ/BH/SM/HG
 Collected date/time: 10/15/19 00:00
 Received date/time: 10/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1365317	1	10/18/19 12:20	10/18/19 12:20	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1370189	1	10/26/19 14:49	10/26/19 14:49	ACG	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	200000		2710	20000	1	10/22/2019 05:44	WG1366027

Sample Narrative:

L1150336-01 WG1366027: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	7780		51.9	1000	1	10/16/2019 19:05	WG1363847
Nitrate	U		22.7	100	1	10/16/2019 19:05	WG1363847
Sulfate	3890	J	77.4	5000	1	10/16/2019 19:05	WG1363847

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	5050	B	102	1000	1	10/19/2019 18:45	WG1365601

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	388		15.0	100	1	10/22/2019 14:13	WG1364631
Manganese	327		0.250	5.00	1	10/22/2019 14:13	WG1364631

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	317		0.287	0.678	1	10/17/2019 15:34	WG1364420
Ethane	U		0.296	1.29	1	10/17/2019 15:34	WG1364420
Ethene	U		0.422	1.27	1	10/17/2019 15:34	WG1364420

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.34	J	1.05	25.0	1	10/24/2019 05:08	WG1368527
Acrylonitrile	U		0.873	5.00	1	10/24/2019 05:08	WG1368527
Benzene	U		0.0896	0.500	1	10/24/2019 05:08	WG1368527
Bromobenzene	U		0.133	0.500	1	10/24/2019 05:08	WG1368527
Bromodichloromethane	U		0.0800	0.500	1	10/24/2019 05:08	WG1368527
Bromochloromethane	U		0.145	0.500	1	10/24/2019 05:08	WG1368527
Bromoform	U		0.186	0.500	1	10/24/2019 05:08	WG1368527
Bromomethane	U		0.157	2.50	1	10/24/2019 05:08	WG1368527
n-Butylbenzene	U		0.143	0.500	1	10/24/2019 05:08	WG1368527
sec-Butylbenzene	U		0.134	0.500	1	10/24/2019 05:08	WG1368527
tert-Butylbenzene	U		0.183	0.500	1	10/24/2019 05:08	WG1368527
Carbon disulfide	U		0.101	0.500	1	10/24/2019 05:08	WG1368527
Carbon tetrachloride	U		0.159	0.500	1	10/24/2019 05:08	WG1368527
Chlorobenzene	U		0.140	0.500	1	10/24/2019 05:08	WG1368527
Chlorodibromomethane	U	JO	0.128	0.500	1	10/24/2019 05:08	WG1368527
Chloroethane	U		0.141	2.50	1	10/24/2019 05:08	WG1368527
Chloroform	U		0.0860	0.500	1	10/24/2019 05:08	WG1368527
Chloromethane	U		0.153	1.25	1	10/24/2019 05:08	WG1368527
2-Chlorotoluene	U		0.111	0.500	1	10/24/2019 05:08	WG1368527
4-Chlorotoluene	U		0.0972	0.500	1	10/24/2019 05:08	WG1368527

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/15/19 08:00

L1150336

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/24/2019 05:08	WG1368527
1,2-Dibromoethane	U		0.193	0.500	1	10/24/2019 05:08	WG1368527
Dibromomethane	U		0.117	0.500	1	10/24/2019 05:08	WG1368527
1,2-Dichlorobenzene	U	JO	0.101	0.500	1	10/24/2019 05:08	WG1368527
1,3-Dichlorobenzene	U	JO J4	0.130	0.500	1	10/24/2019 05:08	WG1368527
1,4-Dichlorobenzene	U	JO J4	0.121	0.500	1	10/24/2019 05:08	WG1368527
Dichlorodifluoromethane	U		0.127	2.50	1	10/24/2019 05:08	WG1368527
1,1-Dichloroethane	U		0.114	0.500	1	10/24/2019 05:08	WG1368527
1,2-Dichloroethane	U		0.108	0.500	1	10/24/2019 05:08	WG1368527
1,1-Dichloroethene	U		0.188	0.500	1	10/24/2019 05:08	WG1368527
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/24/2019 05:08	WG1368527
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/24/2019 05:08	WG1368527
1,2-Dichloropropane	U		0.190	0.500	1	10/24/2019 05:08	WG1368527
1,1-Dichloropropene	U		0.128	0.500	1	10/24/2019 05:08	WG1368527
1,3-Dichloropropane	U	JO J4	0.147	1.00	1	10/24/2019 05:08	WG1368527
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/24/2019 05:08	WG1368527
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/24/2019 05:08	WG1368527
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/24/2019 05:08	WG1368527
2,2-Dichloropropane	U		0.0929	0.500	1	10/24/2019 05:08	WG1368527
Di-isopropyl ether	U		0.0924	0.500	1	10/24/2019 05:08	WG1368527
Ethylbenzene	U		0.158	0.500	1	10/24/2019 05:08	WG1368527
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/24/2019 05:08	WG1368527
2-Hexanone	U		0.757	5.00	1	10/24/2019 05:08	WG1368527
n-Hexane	U	JO	0.305	5.00	1	10/24/2019 05:08	WG1368527
Iodomethane	U		0.377	10.0	1	10/24/2019 05:08	WG1368527
Isopropylbenzene	U		0.126	0.500	1	10/24/2019 05:08	WG1368527
p-Isopropyltoluene	U		0.138	0.500	1	10/24/2019 05:08	WG1368527
2-Butanone (MEK)	U		1.28	5.00	1	10/24/2019 05:08	WG1368527
Methylene Chloride	U		1.07	2.50	1	10/24/2019 05:08	WG1368527
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/24/2019 05:08	WG1368527
Methyl tert-butyl ether	U		0.102	0.500	1	10/24/2019 05:08	WG1368527
Naphthalene	U		0.174	2.50	1	10/24/2019 05:08	WG1368527
n-Propylbenzene	U		0.162	0.500	1	10/24/2019 05:08	WG1368527
Styrene	U		0.117	0.500	1	10/24/2019 05:08	WG1368527
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/24/2019 05:08	WG1368527
1,1,2,2-Tetrachloroethane	U	JO	0.130	0.500	1	10/24/2019 05:08	WG1368527
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/24/2019 05:08	WG1368527
Tetrachloroethene	U		0.199	0.500	1	10/24/2019 05:08	WG1368527
Toluene	U		0.412	0.500	1	10/24/2019 05:08	WG1368527
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/24/2019 05:08	WG1368527
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/24/2019 05:08	WG1368527
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/24/2019 05:08	WG1368527
1,1,2-Trichloroethane	U	JO J4	0.186	0.500	1	10/24/2019 05:08	WG1368527
Trichloroethene	U		0.153	0.500	1	10/24/2019 05:08	WG1368527
Trichlorofluoromethane	U		0.130	2.50	1	10/24/2019 05:08	WG1368527
1,2,3-Trichloropropane	U		0.247	2.50	1	10/24/2019 05:08	WG1368527
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/24/2019 05:08	WG1368527
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/24/2019 05:08	WG1368527
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/24/2019 05:08	WG1368527
Vinyl acetate	U	JO	0.645	5.00	1	10/24/2019 05:08	WG1368527
Vinyl chloride	U		0.118	0.500	1	10/24/2019 05:08	WG1368527
Xylenes, Total	U		0.316	1.50	1	10/24/2019 05:08	WG1368527
(S) Toluene-d8	99.4			80.0-120		10/24/2019 05:08	WG1368527
(S) 4-Bromofluorobenzene	102			77.0-126		10/24/2019 05:08	WG1368527
(S) 1,2-Dichloroethane-d4	114			70.0-130		10/24/2019 05:08	WG1368527

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	628000		2710	20000	1	10/22/2019 05:51	WG1366027

Sample Narrative:

L1150336-02 WG1366027: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	13700		51.9	1000	1	10/16/2019 19:18	WG1363847
Nitrate	U		22.7	100	1	10/16/2019 19:18	WG1363847
Sulfate	9120		77.4	5000	1	10/16/2019 19:18	WG1363847

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	10400		102	1000	1	10/19/2019 19:06	WG1365601

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	14400		15.0	100	1	10/22/2019 14:48	WG1364631
Manganese	4100		0.250	5.00	1	10/22/2019 14:48	WG1364631

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	4950		0.287	0.678	1	10/17/2019 15:37	WG1364420
Ethane	25.6		0.296	1.29	1	10/17/2019 15:37	WG1364420
Ethene	6.99		0.422	1.27	1	10/17/2019 15:37	WG1364420

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		1.05	25.0	1	10/24/2019 05:29	WG1368527
Acrylonitrile	U		0.873	5.00	1	10/24/2019 05:29	WG1368527
Benzene	U		0.0896	0.500	1	10/24/2019 05:29	WG1368527
Bromobenzene	U		0.133	0.500	1	10/24/2019 05:29	WG1368527
Bromodichloromethane	U		0.0800	0.500	1	10/24/2019 05:29	WG1368527
Bromochloromethane	U		0.145	0.500	1	10/24/2019 05:29	WG1368527
Bromoform	U		0.186	0.500	1	10/24/2019 05:29	WG1368527
Bromomethane	U		0.157	2.50	1	10/24/2019 05:29	WG1368527
n-Butylbenzene	U		0.143	0.500	1	10/24/2019 05:29	WG1368527
sec-Butylbenzene	U		0.134	0.500	1	10/24/2019 05:29	WG1368527
tert-Butylbenzene	U		0.183	0.500	1	10/24/2019 05:29	WG1368527
Carbon disulfide	U		0.101	0.500	1	10/24/2019 05:29	WG1368527
Carbon tetrachloride	U		0.159	0.500	1	10/24/2019 05:29	WG1368527
Chlorobenzene	U		0.140	0.500	1	10/24/2019 05:29	WG1368527
Chlorodibromomethane	U	<u>JO</u>	0.128	0.500	1	10/24/2019 05:29	WG1368527
Chloroethane	U		0.141	2.50	1	10/24/2019 05:29	WG1368527
Chloroform	U		0.0860	0.500	1	10/24/2019 05:29	WG1368527
Chloromethane	U		0.153	1.25	1	10/24/2019 05:29	WG1368527
2-Chlorotoluene	U		0.111	0.500	1	10/24/2019 05:29	WG1368527
4-Chlorotoluene	U		0.0972	0.500	1	10/24/2019 05:29	WG1368527

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/24/2019 05:29	WG1368527
1,2-Dibromoethane	U		0.193	0.500	1	10/24/2019 05:29	WG1368527
Dibromomethane	U		0.117	0.500	1	10/24/2019 05:29	WG1368527
1,2-Dichlorobenzene	U	JO	0.101	0.500	1	10/24/2019 05:29	WG1368527
1,3-Dichlorobenzene	U	JO J4	0.130	0.500	1	10/24/2019 05:29	WG1368527
1,4-Dichlorobenzene	U	JO J4	0.121	0.500	1	10/24/2019 05:29	WG1368527
Dichlorodifluoromethane	U		0.127	2.50	1	10/24/2019 05:29	WG1368527
1,1-Dichloroethane	U		0.114	0.500	1	10/24/2019 05:29	WG1368527
1,2-Dichloroethane	U		0.108	0.500	1	10/24/2019 05:29	WG1368527
1,1-Dichloroethene	0.768		0.188	0.500	1	10/24/2019 05:29	WG1368527
cis-1,2-Dichloroethene	397		1.87	10.0	20	10/24/2019 20:51	WG1369128
trans-1,2-Dichloroethene	0.891		0.152	0.500	1	10/24/2019 05:29	WG1368527
1,2-Dichloropropane	U		0.190	0.500	1	10/24/2019 05:29	WG1368527
1,1-Dichloropropene	U		0.128	0.500	1	10/24/2019 05:29	WG1368527
1,3-Dichloropropane	U	JO J4	0.147	1.00	1	10/24/2019 05:29	WG1368527
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/24/2019 05:29	WG1368527
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/24/2019 05:29	WG1368527
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/24/2019 05:29	WG1368527
2,2-Dichloropropane	U		0.0929	0.500	1	10/24/2019 05:29	WG1368527
Di-isopropyl ether	U		0.0924	0.500	1	10/24/2019 05:29	WG1368527
Ethylbenzene	U		0.158	0.500	1	10/24/2019 05:29	WG1368527
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/24/2019 05:29	WG1368527
2-Hexanone	U		0.757	5.00	1	10/24/2019 05:29	WG1368527
n-Hexane	U	JO	0.305	5.00	1	10/24/2019 05:29	WG1368527
Iodomethane	U		0.377	10.0	1	10/24/2019 05:29	WG1368527
Isopropylbenzene	U		0.126	0.500	1	10/24/2019 05:29	WG1368527
p-Isopropyltoluene	U		0.138	0.500	1	10/24/2019 05:29	WG1368527
2-Butanone (MEK)	U		1.28	5.00	1	10/24/2019 05:29	WG1368527
Methylene Chloride	U		1.07	2.50	1	10/24/2019 05:29	WG1368527
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/24/2019 05:29	WG1368527
Methyl tert-butyl ether	U		0.102	0.500	1	10/24/2019 05:29	WG1368527
Naphthalene	U		0.174	2.50	1	10/24/2019 05:29	WG1368527
n-Propylbenzene	U		0.162	0.500	1	10/24/2019 05:29	WG1368527
Styrene	U		0.117	0.500	1	10/24/2019 05:29	WG1368527
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/24/2019 05:29	WG1368527
1,1,2,2-Tetrachloroethane	U	JO	0.130	0.500	1	10/24/2019 05:29	WG1368527
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/24/2019 05:29	WG1368527
Tetrachloroethene	U		0.199	0.500	1	10/24/2019 05:29	WG1368527
Toluene	U		0.412	0.500	1	10/24/2019 05:29	WG1368527
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/24/2019 05:29	WG1368527
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/24/2019 05:29	WG1368527
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/24/2019 05:29	WG1368527
1,1,2-Trichloroethane	U	JO J4	0.186	0.500	1	10/24/2019 05:29	WG1368527
Trichloroethene	1.03		0.153	0.500	1	10/24/2019 05:29	WG1368527
Trichlorofluoromethane	U		0.130	2.50	1	10/24/2019 05:29	WG1368527
1,2,3-Trichloropropane	U		0.247	2.50	1	10/24/2019 05:29	WG1368527
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/24/2019 05:29	WG1368527
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/24/2019 05:29	WG1368527
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/24/2019 05:29	WG1368527
Vinyl acetate	U	JO	0.645	5.00	1	10/24/2019 05:29	WG1368527
Vinyl chloride	109		0.118	0.500	1	10/24/2019 05:29	WG1368527
Xylenes, Total	U		0.316	1.50	1	10/24/2019 05:29	WG1368527
(S) Toluene-d8	102			80.0-120		10/24/2019 05:29	WG1368527
(S) Toluene-d8	110			80.0-120		10/24/2019 20:51	WG1369128
(S) 4-Bromofluorobenzene	104			77.0-126		10/24/2019 05:29	WG1368527
(S) 4-Bromofluorobenzene	112			77.0-126		10/24/2019 20:51	WG1369128

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	112			70.0-130		10/24/2019 05:29	WG1368527
(S) 1,2-Dichloroethane-d4	108			70.0-130		10/24/2019 20:51	WG1369128

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	114000		2710	20000	1	10/22/2019 05:58	WG1366027

Sample Narrative:

L1150336-03 WG1366027: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	18000		51.9	1000	1	10/16/2019 19:31	WG1363847
Nitrate	1630		22.7	100	1	10/16/2019 19:31	WG1363847
Sulfate	28000		77.4	5000	1	10/16/2019 19:31	WG1363847

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3340	<u>B</u>	102	1000	1	10/19/2019 19:28	WG1365601

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	2580		15.0	100	1	10/22/2019 14:52	WG1364631
Manganese	197		0.250	5.00	1	10/22/2019 14:52	WG1364631

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/18/2019 14:44	WG1365317
^(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		10/18/2019 14:44	WG1365317

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	U		0.287	0.678	1	10/17/2019 16:04	WG1364420
Ethane	U		0.296	1.29	1	10/17/2019 16:04	WG1364420
Ethene	U		0.422	1.27	1	10/17/2019 16:04	WG1364420

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U		1.05	25.0	1	10/24/2019 05:50	WG1368527
Acrylonitrile	U		0.873	5.00	1	10/24/2019 05:50	WG1368527
Benzene	U		0.0896	0.500	1	10/24/2019 05:50	WG1368527
Bromobenzene	U		0.133	0.500	1	10/24/2019 05:50	WG1368527
Bromodichloromethane	U		0.0800	0.500	1	10/24/2019 05:50	WG1368527
Bromochloromethane	U		0.145	0.500	1	10/24/2019 05:50	WG1368527
Bromoform	U		0.186	0.500	1	10/24/2019 05:50	WG1368527
Bromomethane	U		0.157	2.50	1	10/24/2019 05:50	WG1368527
n-Butylbenzene	U		0.143	0.500	1	10/24/2019 05:50	WG1368527
sec-Butylbenzene	U		0.134	0.500	1	10/24/2019 05:50	WG1368527
tert-Butylbenzene	U		0.183	0.500	1	10/24/2019 05:50	WG1368527
Carbon disulfide	U		0.101	0.500	1	10/24/2019 05:50	WG1368527
Carbon tetrachloride	U		0.159	0.500	1	10/24/2019 05:50	WG1368527

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/24/2019 05:50	WG1368527
Chlorodibromomethane	U	<u>JO</u>	0.128	0.500	1	10/24/2019 05:50	WG1368527
Chloroethane	U		0.141	2.50	1	10/24/2019 05:50	WG1368527
Chloroform	U		0.0860	0.500	1	10/24/2019 05:50	WG1368527
Chloromethane	U		0.153	1.25	1	10/24/2019 05:50	WG1368527
2-Chlorotoluene	U		0.111	0.500	1	10/24/2019 05:50	WG1368527
4-Chlorotoluene	U		0.0972	0.500	1	10/24/2019 05:50	WG1368527
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/24/2019 05:50	WG1368527
1,2-Dibromoethane	U		0.193	0.500	1	10/24/2019 05:50	WG1368527
Dibromomethane	U		0.117	0.500	1	10/24/2019 05:50	WG1368527
1,2-Dichlorobenzene	U	<u>JO</u>	0.101	0.500	1	10/24/2019 05:50	WG1368527
1,3-Dichlorobenzene	U	<u>JO J4</u>	0.130	0.500	1	10/24/2019 05:50	WG1368527
1,4-Dichlorobenzene	U	<u>JO J4</u>	0.121	0.500	1	10/24/2019 05:50	WG1368527
Dichlorodifluoromethane	U		0.127	2.50	1	10/24/2019 05:50	WG1368527
1,1-Dichloroethane	U		0.114	0.500	1	10/24/2019 05:50	WG1368527
1,2-Dichloroethane	U		0.108	0.500	1	10/24/2019 05:50	WG1368527
1,1-Dichloroethene	U		0.188	0.500	1	10/24/2019 05:50	WG1368527
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/24/2019 21:11	WG1369128
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/24/2019 05:50	WG1368527
1,2-Dichloropropane	U		0.190	0.500	1	10/24/2019 05:50	WG1368527
1,1-Dichloropropene	U		0.128	0.500	1	10/24/2019 05:50	WG1368527
1,3-Dichloropropane	U	<u>JO J4</u>	0.147	1.00	1	10/24/2019 05:50	WG1368527
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/24/2019 05:50	WG1368527
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/24/2019 05:50	WG1368527
trans-1,4-Dichloro-2-butene	U	<u>JO</u>	0.257	5.00	1	10/24/2019 05:50	WG1368527
2,2-Dichloropropane	U		0.0929	0.500	1	10/24/2019 05:50	WG1368527
Di-isopropyl ether	U		0.0924	0.500	1	10/24/2019 05:50	WG1368527
Ethylbenzene	U		0.158	0.500	1	10/24/2019 05:50	WG1368527
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/24/2019 05:50	WG1368527
2-Hexanone	U		0.757	5.00	1	10/24/2019 05:50	WG1368527
n-Hexane	U	<u>JO</u>	0.305	5.00	1	10/24/2019 05:50	WG1368527
Iodomethane	U		0.377	10.0	1	10/24/2019 05:50	WG1368527
Isopropylbenzene	U		0.126	0.500	1	10/24/2019 05:50	WG1368527
p-Isopropyltoluene	U		0.138	0.500	1	10/24/2019 05:50	WG1368527
2-Butanone (MEK)	U		1.28	5.00	1	10/24/2019 05:50	WG1368527
Methylene Chloride	U		1.07	2.50	1	10/24/2019 05:50	WG1368527
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/24/2019 05:50	WG1368527
Methyl tert-butyl ether	U		0.102	0.500	1	10/24/2019 05:50	WG1368527
Naphthalene	U		0.174	2.50	1	10/24/2019 05:50	WG1368527
n-Propylbenzene	U		0.162	0.500	1	10/24/2019 05:50	WG1368527
Styrene	U		0.117	0.500	1	10/24/2019 05:50	WG1368527
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/24/2019 05:50	WG1368527
1,1,2,2-Tetrachloroethane	U	<u>JO</u>	0.130	0.500	1	10/24/2019 05:50	WG1368527
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/24/2019 05:50	WG1368527
Tetrachloroethene	U		0.199	0.500	1	10/24/2019 05:50	WG1368527
Toluene	U		0.412	0.500	1	10/24/2019 05:50	WG1368527
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/24/2019 05:50	WG1368527
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/24/2019 05:50	WG1368527
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/24/2019 05:50	WG1368527
1,1,2-Trichloroethane	U	<u>JO J4</u>	0.186	0.500	1	10/24/2019 05:50	WG1368527
Trichloroethene	U		0.153	0.500	1	10/24/2019 05:50	WG1368527
Trichlorofluoromethane	U		0.130	2.50	1	10/24/2019 05:50	WG1368527
1,2,3-Trichloropropane	U		0.247	2.50	1	10/24/2019 05:50	WG1368527
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/24/2019 05:50	WG1368527
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/24/2019 05:50	WG1368527
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/24/2019 05:50	WG1368527

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/24/2019 05:50	WG1368527
Vinyl chloride	U		0.118	0.500	1	10/24/2019 05:50	WG1368527
Xylenes, Total	U		0.316	1.50	1	10/24/2019 05:50	WG1368527
(S) Toluene-d8	101			80.0-120		10/24/2019 05:50	WG1368527
(S) Toluene-d8	112			80.0-120		10/24/2019 21:11	WG1369128
(S) 4-Bromofluorobenzene	103			77.0-126		10/24/2019 05:50	WG1368527
(S) 4-Bromofluorobenzene	116			77.0-126		10/24/2019 21:11	WG1369128
(S) 1,2-Dichloroethane-d4	113			70.0-130		10/24/2019 05:50	WG1368527
(S) 1,2-Dichloroethane-d4	107			70.0-130		10/24/2019 21:11	WG1369128

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	210000		2710	20000	1	10/21/2019 23:52	WG1366029

Sample Narrative:

L1150336-04 WG1366029: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	7540		51.9	1000	1	10/16/2019 19:44	WG1363847
Nitrate	U		22.7	100	1	10/16/2019 19:44	WG1363847
Sulfate	3620	J	77.4	5000	1	10/16/2019 19:44	WG1363847

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	5120	B	102	1000	1	10/19/2019 21:17	WG1365601

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	407		15.0	100	1	10/22/2019 14:55	WG1364631
Manganese	335		0.250	5.00	1	10/22/2019 14:55	WG1364631

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	277		0.287	0.678	1	10/17/2019 15:42	WG1364420
Ethane	U		0.296	1.29	1	10/17/2019 15:42	WG1364420
Ethene	U		0.422	1.27	1	10/17/2019 15:42	WG1364420

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.30	J	1.05	25.0	1	10/24/2019 06:10	WG1368527
Acrylonitrile	U		0.873	5.00	1	10/24/2019 06:10	WG1368527
Benzene	U		0.0896	0.500	1	10/24/2019 06:10	WG1368527
Bromobenzene	U		0.133	0.500	1	10/24/2019 06:10	WG1368527
Bromodichloromethane	U		0.0800	0.500	1	10/24/2019 06:10	WG1368527
Bromochloromethane	U		0.145	0.500	1	10/24/2019 06:10	WG1368527
Bromoform	U		0.186	0.500	1	10/24/2019 06:10	WG1368527
Bromomethane	U		0.157	2.50	1	10/24/2019 06:10	WG1368527
n-Butylbenzene	U		0.143	0.500	1	10/24/2019 06:10	WG1368527
sec-Butylbenzene	U		0.134	0.500	1	10/24/2019 06:10	WG1368527
tert-Butylbenzene	U		0.183	0.500	1	10/24/2019 06:10	WG1368527
Carbon disulfide	U		0.101	0.500	1	10/24/2019 06:10	WG1368527
Carbon tetrachloride	U		0.159	0.500	1	10/24/2019 06:10	WG1368527
Chlorobenzene	U		0.140	0.500	1	10/24/2019 06:10	WG1368527
Chlorodibromomethane	U	JO	0.128	0.500	1	10/24/2019 06:10	WG1368527
Chloroethane	U		0.141	2.50	1	10/24/2019 06:10	WG1368527
Chloroform	U		0.0860	0.500	1	10/24/2019 06:10	WG1368527
Chloromethane	U		0.153	1.25	1	10/24/2019 06:10	WG1368527
2-Chlorotoluene	U		0.111	0.500	1	10/24/2019 06:10	WG1368527
4-Chlorotoluene	U		0.0972	0.500	1	10/24/2019 06:10	WG1368527

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/15/19 11:00

L1150336

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/24/2019 06:10	WG1368527
1,2-Dibromoethane	U		0.193	0.500	1	10/24/2019 06:10	WG1368527
Dibromomethane	U		0.117	0.500	1	10/24/2019 06:10	WG1368527
1,2-Dichlorobenzene	U	JO	0.101	0.500	1	10/24/2019 06:10	WG1368527
1,3-Dichlorobenzene	U	JO J4	0.130	0.500	1	10/24/2019 06:10	WG1368527
1,4-Dichlorobenzene	U	JO J4	0.121	0.500	1	10/24/2019 06:10	WG1368527
Dichlorodifluoromethane	U		0.127	2.50	1	10/24/2019 06:10	WG1368527
1,1-Dichloroethane	U		0.114	0.500	1	10/24/2019 06:10	WG1368527
1,2-Dichloroethane	U		0.108	0.500	1	10/24/2019 06:10	WG1368527
1,1-Dichloroethene	U		0.188	0.500	1	10/24/2019 06:10	WG1368527
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/24/2019 06:10	WG1368527
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/24/2019 06:10	WG1368527
1,2-Dichloropropane	U		0.190	0.500	1	10/24/2019 06:10	WG1368527
1,1-Dichloropropene	U		0.128	0.500	1	10/24/2019 06:10	WG1368527
1,3-Dichloropropane	U	JO J4	0.147	1.00	1	10/24/2019 06:10	WG1368527
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/24/2019 06:10	WG1368527
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/24/2019 06:10	WG1368527
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/24/2019 06:10	WG1368527
2,2-Dichloropropane	U		0.0929	0.500	1	10/24/2019 06:10	WG1368527
Di-isopropyl ether	U		0.0924	0.500	1	10/24/2019 06:10	WG1368527
Ethylbenzene	U		0.158	0.500	1	10/24/2019 06:10	WG1368527
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/24/2019 06:10	WG1368527
2-Hexanone	U		0.757	5.00	1	10/24/2019 06:10	WG1368527
n-Hexane	U	JO	0.305	5.00	1	10/24/2019 06:10	WG1368527
Iodomethane	U		0.377	10.0	1	10/24/2019 06:10	WG1368527
Isopropylbenzene	U		0.126	0.500	1	10/24/2019 06:10	WG1368527
p-Isopropyltoluene	U		0.138	0.500	1	10/24/2019 06:10	WG1368527
2-Butanone (MEK)	U		1.28	5.00	1	10/24/2019 06:10	WG1368527
Methylene Chloride	U		1.07	2.50	1	10/24/2019 06:10	WG1368527
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/24/2019 06:10	WG1368527
Methyl tert-butyl ether	U		0.102	0.500	1	10/24/2019 06:10	WG1368527
Naphthalene	U		0.174	2.50	1	10/24/2019 06:10	WG1368527
n-Propylbenzene	U		0.162	0.500	1	10/24/2019 06:10	WG1368527
Styrene	U		0.117	0.500	1	10/24/2019 06:10	WG1368527
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/24/2019 06:10	WG1368527
1,1,2,2-Tetrachloroethane	U	JO	0.130	0.500	1	10/24/2019 06:10	WG1368527
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/24/2019 06:10	WG1368527
Tetrachloroethene	U		0.199	0.500	1	10/24/2019 06:10	WG1368527
Toluene	U		0.412	0.500	1	10/24/2019 06:10	WG1368527
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/24/2019 06:10	WG1368527
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/24/2019 06:10	WG1368527
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/24/2019 06:10	WG1368527
1,1,2-Trichloroethane	U	JO J4	0.186	0.500	1	10/24/2019 06:10	WG1368527
Trichloroethene	U		0.153	0.500	1	10/24/2019 06:10	WG1368527
Trichlorofluoromethane	U		0.130	2.50	1	10/24/2019 06:10	WG1368527
1,2,3-Trichloropropane	U		0.247	2.50	1	10/24/2019 06:10	WG1368527
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/24/2019 06:10	WG1368527
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/24/2019 06:10	WG1368527
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/24/2019 06:10	WG1368527
Vinyl acetate	U	JO	0.645	5.00	1	10/24/2019 06:10	WG1368527
Vinyl chloride	U		0.118	0.500	1	10/24/2019 06:10	WG1368527
Xylenes, Total	U		0.316	1.50	1	10/24/2019 06:10	WG1368527
(S) Toluene-d8	99.8			80.0-120		10/24/2019 06:10	WG1368527
(S) 4-Bromofluorobenzene	104			77.0-126		10/24/2019 06:10	WG1368527
(S) 1,2-Dichloroethane-d4	114			70.0-130		10/24/2019 06:10	WG1368527

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	187000		2710	20000	1	10/21/2019 23:59	WG1366029

Sample Narrative:

L1150336-05 WG1366029: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	8790		51.9	1000	1	10/16/2019 20:22	WG1363847
Nitrate	U		22.7	100	1	10/16/2019 20:22	WG1363847
Sulfate	80900		77.4	5000	1	10/16/2019 20:22	WG1363847

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	2320	<u>B</u>	102	1000	1	10/19/2019 21:31	WG1365601

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	3810		15.0	100	1	10/22/2019 14:59	WG1364631
Manganese	608		0.250	5.00	1	10/22/2019 14:59	WG1364631

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/18/2019 15:07	WG1365317
^(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		10/18/2019 15:07	WG1365317

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	U		0.287	0.678	1	10/17/2019 15:44	WG1364420
Ethane	U		0.296	1.29	1	10/17/2019 15:44	WG1364420
Ethene	U		0.422	1.27	1	10/17/2019 15:44	WG1364420

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		1.05	25.0	1	10/24/2019 06:31	WG1368527
Acrylonitrile	U		0.873	5.00	1	10/24/2019 06:31	WG1368527
Benzene	U		0.0896	0.500	1	10/24/2019 06:31	WG1368527
Bromobenzene	U		0.133	0.500	1	10/24/2019 06:31	WG1368527
Bromodichloromethane	U		0.0800	0.500	1	10/24/2019 06:31	WG1368527
Bromochloromethane	U		0.145	0.500	1	10/24/2019 06:31	WG1368527
Bromoform	U		0.186	0.500	1	10/24/2019 06:31	WG1368527
Bromomethane	U		0.157	2.50	1	10/24/2019 06:31	WG1368527
n-Butylbenzene	U		0.143	0.500	1	10/24/2019 06:31	WG1368527
sec-Butylbenzene	U		0.134	0.500	1	10/24/2019 06:31	WG1368527
tert-Butylbenzene	U		0.183	0.500	1	10/24/2019 06:31	WG1368527
Carbon disulfide	U		0.101	0.500	1	10/24/2019 06:31	WG1368527
Carbon tetrachloride	U		0.159	0.500	1	10/24/2019 06:31	WG1368527

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/24/2019 06:31	WG1368527
Chlorodibromomethane	U	JO	0.128	0.500	1	10/24/2019 06:31	WG1368527
Chloroethane	U		0.141	2.50	1	10/24/2019 06:31	WG1368527
Chloroform	U		0.0860	0.500	1	10/24/2019 06:31	WG1368527
Chloromethane	U		0.153	1.25	1	10/24/2019 06:31	WG1368527
2-Chlorotoluene	U		0.111	0.500	1	10/24/2019 06:31	WG1368527
4-Chlorotoluene	U		0.0972	0.500	1	10/24/2019 06:31	WG1368527
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/24/2019 06:31	WG1368527
1,2-Dibromoethane	U		0.193	0.500	1	10/24/2019 06:31	WG1368527
Dibromomethane	U		0.117	0.500	1	10/24/2019 06:31	WG1368527
1,2-Dichlorobenzene	U	JO	0.101	0.500	1	10/24/2019 06:31	WG1368527
1,3-Dichlorobenzene	U	JO J4	0.130	0.500	1	10/24/2019 06:31	WG1368527
1,4-Dichlorobenzene	U	JO J4	0.121	0.500	1	10/24/2019 06:31	WG1368527
Dichlorodifluoromethane	U		0.127	2.50	1	10/24/2019 06:31	WG1368527
1,1-Dichloroethane	U		0.114	0.500	1	10/24/2019 06:31	WG1368527
1,2-Dichloroethane	U		0.108	0.500	1	10/24/2019 06:31	WG1368527
1,1-Dichloroethene	U		0.188	0.500	1	10/24/2019 06:31	WG1368527
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/24/2019 06:31	WG1368527
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/24/2019 06:31	WG1368527
1,2-Dichloropropane	U		0.190	0.500	1	10/24/2019 06:31	WG1368527
1,1-Dichloropropene	U		0.128	0.500	1	10/24/2019 06:31	WG1368527
1,3-Dichloropropane	U	JO J4	0.147	1.00	1	10/24/2019 06:31	WG1368527
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/24/2019 06:31	WG1368527
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/24/2019 06:31	WG1368527
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/24/2019 06:31	WG1368527
2,2-Dichloropropane	U		0.0929	0.500	1	10/24/2019 06:31	WG1368527
Di-isopropyl ether	U		0.0924	0.500	1	10/24/2019 06:31	WG1368527
Ethylbenzene	U		0.158	0.500	1	10/24/2019 06:31	WG1368527
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/24/2019 06:31	WG1368527
2-Hexanone	U		0.757	5.00	1	10/24/2019 06:31	WG1368527
n-Hexane	U	JO	0.305	5.00	1	10/24/2019 06:31	WG1368527
Iodomethane	U		0.377	10.0	1	10/24/2019 06:31	WG1368527
Isopropylbenzene	U		0.126	0.500	1	10/24/2019 06:31	WG1368527
p-Isopropyltoluene	U		0.138	0.500	1	10/24/2019 06:31	WG1368527
2-Butanone (MEK)	U		1.28	5.00	1	10/24/2019 06:31	WG1368527
Methylene Chloride	U		1.07	2.50	1	10/24/2019 06:31	WG1368527
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/24/2019 06:31	WG1368527
Methyl tert-butyl ether	U		0.102	0.500	1	10/24/2019 06:31	WG1368527
Naphthalene	U		0.174	2.50	1	10/24/2019 06:31	WG1368527
n-Propylbenzene	U		0.162	0.500	1	10/24/2019 06:31	WG1368527
Styrene	U		0.117	0.500	1	10/24/2019 06:31	WG1368527
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/24/2019 06:31	WG1368527
1,1,2,2-Tetrachloroethane	U	JO	0.130	0.500	1	10/24/2019 06:31	WG1368527
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/24/2019 06:31	WG1368527
Tetrachloroethene	U		0.199	0.500	1	10/24/2019 06:31	WG1368527
Toluene	U		0.412	0.500	1	10/24/2019 06:31	WG1368527
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/24/2019 06:31	WG1368527
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/24/2019 06:31	WG1368527
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/24/2019 06:31	WG1368527
1,1,2-Trichloroethane	U	JO J4	0.186	0.500	1	10/24/2019 06:31	WG1368527
Trichloroethene	U		0.153	0.500	1	10/24/2019 06:31	WG1368527
Trichlorofluoromethane	U		0.130	2.50	1	10/24/2019 06:31	WG1368527
1,2,3-Trichloropropane	U		0.247	2.50	1	10/24/2019 06:31	WG1368527
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/24/2019 06:31	WG1368527
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/24/2019 06:31	WG1368527
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/24/2019 06:31	WG1368527

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/24/2019 06:31	WG1368527
Vinyl chloride	U		0.118	0.500	1	10/24/2019 06:31	WG1368527
Xylenes, Total	U		0.316	1.50	1	10/24/2019 06:31	WG1368527
<i>(S) Toluene-d8</i>	99.6			80.0-120		10/24/2019 06:31	WG1368527
<i>(S) 4-Bromofluorobenzene</i>	105			77.0-126		10/24/2019 06:31	WG1368527
<i>(S) 1,2-Dichloroethane-d4</i>	114			70.0-130		10/24/2019 06:31	WG1368527

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	239000		2710	20000	1	10/22/2019 00:07	WG1366029

Sample Narrative:

L1150336-06 WG1366029: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	31600		51.9	1000	1	10/16/2019 20:35	WG1363847
Nitrate	U		22.7	100	1	10/16/2019 20:35	WG1363847
Sulfate	73800		77.4	5000	1	10/16/2019 20:35	WG1363847

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2490	<u>B</u>	102	1000	1	10/19/2019 22:38	WG1365601

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	1160		15.0	100	1	10/22/2019 15:03	WG1364631
Manganese	320		0.250	5.00	1	10/22/2019 15:03	WG1364631

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/18/2019 15:31	WG1365317
^(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		10/18/2019 15:31	WG1365317

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	384		0.287	0.678	1	10/17/2019 15:50	WG1364420
Ethane	U		0.296	1.29	1	10/17/2019 15:50	WG1364420
Ethene	U		0.422	1.27	1	10/17/2019 15:50	WG1364420

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U		1.05	25.0	1	10/24/2019 06:52	WG1368527
Acrylonitrile	U		0.873	5.00	1	10/24/2019 06:52	WG1368527
Benzene	U		0.0896	0.500	1	10/24/2019 06:52	WG1368527
Bromobenzene	U		0.133	0.500	1	10/24/2019 06:52	WG1368527
Bromodichloromethane	U		0.0800	0.500	1	10/24/2019 06:52	WG1368527
Bromochloromethane	U		0.145	0.500	1	10/24/2019 06:52	WG1368527
Bromoform	U		0.186	0.500	1	10/24/2019 06:52	WG1368527
Bromomethane	U		0.157	2.50	1	10/24/2019 06:52	WG1368527
n-Butylbenzene	U		0.143	0.500	1	10/24/2019 06:52	WG1368527
sec-Butylbenzene	U		0.134	0.500	1	10/24/2019 06:52	WG1368527
tert-Butylbenzene	U		0.183	0.500	1	10/24/2019 06:52	WG1368527
Carbon disulfide	U		0.101	0.500	1	10/24/2019 06:52	WG1368527
Carbon tetrachloride	U		0.159	0.500	1	10/24/2019 06:52	WG1368527

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/15/19 12:20

L1150336

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/24/2019 06:52	WG1368527
Chlorodibromomethane	U	<u>JO</u>	0.128	0.500	1	10/24/2019 06:52	WG1368527
Chloroethane	U		0.141	2.50	1	10/24/2019 06:52	WG1368527
Chloroform	U		0.0860	0.500	1	10/24/2019 06:52	WG1368527
Chloromethane	U		0.153	1.25	1	10/24/2019 06:52	WG1368527
2-Chlorotoluene	U		0.111	0.500	1	10/24/2019 06:52	WG1368527
4-Chlorotoluene	U		0.0972	0.500	1	10/24/2019 06:52	WG1368527
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/24/2019 06:52	WG1368527
1,2-Dibromoethane	U		0.193	0.500	1	10/24/2019 06:52	WG1368527
Dibromomethane	U		0.117	0.500	1	10/24/2019 06:52	WG1368527
1,2-Dichlorobenzene	U	<u>JO</u>	0.101	0.500	1	10/24/2019 06:52	WG1368527
1,3-Dichlorobenzene	U	<u>JO J4</u>	0.130	0.500	1	10/24/2019 06:52	WG1368527
1,4-Dichlorobenzene	U	<u>JO J4</u>	0.121	0.500	1	10/24/2019 06:52	WG1368527
Dichlorodifluoromethane	U		0.127	2.50	1	10/24/2019 06:52	WG1368527
1,1-Dichloroethane	U		0.114	0.500	1	10/24/2019 06:52	WG1368527
1,2-Dichloroethane	U		0.108	0.500	1	10/24/2019 06:52	WG1368527
1,1-Dichloroethene	U		0.188	0.500	1	10/24/2019 06:52	WG1368527
cis-1,2-Dichloroethene	0.408	<u>J</u>	0.0933	0.500	1	10/24/2019 06:52	WG1368527
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/24/2019 06:52	WG1368527
1,2-Dichloropropane	U		0.190	0.500	1	10/24/2019 06:52	WG1368527
1,1-Dichloropropene	U		0.128	0.500	1	10/24/2019 06:52	WG1368527
1,3-Dichloropropane	U	<u>JO J4</u>	0.147	1.00	1	10/24/2019 06:52	WG1368527
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/24/2019 06:52	WG1368527
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/24/2019 06:52	WG1368527
trans-1,4-Dichloro-2-butene	U	<u>JO</u>	0.257	5.00	1	10/24/2019 06:52	WG1368527
2,2-Dichloropropane	U		0.0929	0.500	1	10/24/2019 06:52	WG1368527
Di-isopropyl ether	U		0.0924	0.500	1	10/24/2019 06:52	WG1368527
Ethylbenzene	U		0.158	0.500	1	10/24/2019 06:52	WG1368527
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/24/2019 06:52	WG1368527
2-Hexanone	U		0.757	5.00	1	10/24/2019 06:52	WG1368527
n-Hexane	U	<u>JO</u>	0.305	5.00	1	10/24/2019 06:52	WG1368527
Iodomethane	U		0.377	10.0	1	10/24/2019 06:52	WG1368527
Isopropylbenzene	U		0.126	0.500	1	10/24/2019 06:52	WG1368527
p-Isopropyltoluene	U		0.138	0.500	1	10/24/2019 06:52	WG1368527
2-Butanone (MEK)	U		1.28	5.00	1	10/24/2019 06:52	WG1368527
Methylene Chloride	U		1.07	2.50	1	10/24/2019 06:52	WG1368527
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/24/2019 06:52	WG1368527
Methyl tert-butyl ether	U		0.102	0.500	1	10/24/2019 06:52	WG1368527
Naphthalene	U		0.174	2.50	1	10/24/2019 06:52	WG1368527
n-Propylbenzene	U		0.162	0.500	1	10/24/2019 06:52	WG1368527
Styrene	U		0.117	0.500	1	10/24/2019 06:52	WG1368527
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/24/2019 06:52	WG1368527
1,1,2,2-Tetrachloroethane	U	<u>JO</u>	0.130	0.500	1	10/24/2019 06:52	WG1368527
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/24/2019 06:52	WG1368527
Tetrachloroethene	U		0.199	0.500	1	10/24/2019 06:52	WG1368527
Toluene	U		0.412	0.500	1	10/24/2019 06:52	WG1368527
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/24/2019 06:52	WG1368527
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/24/2019 06:52	WG1368527
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/24/2019 06:52	WG1368527
1,1,2-Trichloroethane	U	<u>JO J4</u>	0.186	0.500	1	10/24/2019 06:52	WG1368527
Trichloroethene	0.350	<u>J</u>	0.153	0.500	1	10/24/2019 06:52	WG1368527
Trichlorofluoromethane	U		0.130	2.50	1	10/24/2019 06:52	WG1368527
1,2,3-Trichloropropane	U		0.247	2.50	1	10/24/2019 06:52	WG1368527
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/24/2019 06:52	WG1368527
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/24/2019 06:52	WG1368527
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/24/2019 06:52	WG1368527

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/24/2019 06:52	WG1368527
Vinyl chloride	7.36		0.118	0.500	1	10/24/2019 06:52	WG1368527
Xylenes, Total	U		0.316	1.50	1	10/24/2019 06:52	WG1368527
(S) Toluene-d8	99.4			80.0-120		10/24/2019 06:52	WG1368527
(S) 4-Bromofluorobenzene	102			77.0-126		10/24/2019 06:52	WG1368527
(S) 1,2-Dichloroethane-d4	113			70.0-130		10/24/2019 06:52	WG1368527

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	465000		2710	20000	1	10/22/2019 00:15	WG1366029

Sample Narrative:

L1150336-07 WG1366029: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	19300		51.9	1000	1	10/16/2019 20:47	WG1363847
Nitrate	U		22.7	100	1	10/16/2019 20:47	WG1363847
Sulfate	73200		77.4	5000	1	10/16/2019 20:47	WG1363847

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	7050		102	1000	1	10/19/2019 23:00	WG1365601

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	1290		15.0	100	1	10/22/2019 15:07	WG1364631
Manganese	3430		0.250	5.00	1	10/22/2019 15:07	WG1364631

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	5020		0.287	0.678	1	10/17/2019 15:53	WG1364420
Ethane	U		0.296	1.29	1	10/17/2019 15:53	WG1364420
Ethene	U		0.422	1.27	1	10/17/2019 15:53	WG1364420

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.11	J	1.05	25.0	1	10/24/2019 07:12	WG1368527
Acrylonitrile	U		0.873	5.00	1	10/24/2019 07:12	WG1368527
Benzene	0.233	J	0.0896	0.500	1	10/24/2019 07:12	WG1368527
Bromobenzene	U		0.133	0.500	1	10/24/2019 07:12	WG1368527
Bromodichloromethane	U		0.0800	0.500	1	10/24/2019 07:12	WG1368527
Bromochloromethane	U		0.145	0.500	1	10/24/2019 07:12	WG1368527
Bromoform	U		0.186	0.500	1	10/24/2019 07:12	WG1368527
Bromomethane	U		0.157	2.50	1	10/24/2019 07:12	WG1368527
n-Butylbenzene	U		0.143	0.500	1	10/24/2019 07:12	WG1368527
sec-Butylbenzene	U		0.134	0.500	1	10/24/2019 07:12	WG1368527
tert-Butylbenzene	U		0.183	0.500	1	10/24/2019 07:12	WG1368527
Carbon disulfide	U		0.101	0.500	1	10/24/2019 07:12	WG1368527
Carbon tetrachloride	U		0.159	0.500	1	10/24/2019 07:12	WG1368527
Chlorobenzene	U		0.140	0.500	1	10/24/2019 07:12	WG1368527
Chlorodibromomethane	U	JO	0.128	0.500	1	10/24/2019 07:12	WG1368527
Chloroethane	U		0.141	2.50	1	10/24/2019 07:12	WG1368527
Chloroform	U		0.0860	0.500	1	10/24/2019 07:12	WG1368527
Chloromethane	U		0.153	1.25	1	10/24/2019 07:12	WG1368527
2-Chlorotoluene	U		0.111	0.500	1	10/24/2019 07:12	WG1368527
4-Chlorotoluene	U		0.0972	0.500	1	10/24/2019 07:12	WG1368527

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/24/2019 07:12	WG1368527
1,2-Dibromoethane	U		0.193	0.500	1	10/24/2019 07:12	WG1368527
Dibromomethane	U		0.117	0.500	1	10/24/2019 07:12	WG1368527
1,2-Dichlorobenzene	U	JO	0.101	0.500	1	10/24/2019 07:12	WG1368527
1,3-Dichlorobenzene	U	JO J4	0.130	0.500	1	10/24/2019 07:12	WG1368527
1,4-Dichlorobenzene	U	JO J4	0.121	0.500	1	10/24/2019 07:12	WG1368527
Dichlorodifluoromethane	U		0.127	2.50	1	10/24/2019 07:12	WG1368527
1,1-Dichloroethane	U		0.114	0.500	1	10/24/2019 07:12	WG1368527
1,2-Dichloroethane	U		0.108	0.500	1	10/24/2019 07:12	WG1368527
1,1-Dichloroethene	5.01		0.188	0.500	1	10/24/2019 07:12	WG1368527
cis-1,2-Dichloroethene	574		4.67	25.0	50	10/24/2019 21:32	WG1369128
trans-1,2-Dichloroethene	3.86		0.152	0.500	1	10/24/2019 07:12	WG1368527
1,2-Dichloropropane	U		0.190	0.500	1	10/24/2019 07:12	WG1368527
1,1-Dichloropropene	U		0.128	0.500	1	10/24/2019 07:12	WG1368527
1,3-Dichloropropane	U	JO J4	0.147	1.00	1	10/24/2019 07:12	WG1368527
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/24/2019 07:12	WG1368527
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/24/2019 07:12	WG1368527
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/24/2019 07:12	WG1368527
2,2-Dichloropropane	U		0.0929	0.500	1	10/24/2019 07:12	WG1368527
Di-isopropyl ether	U		0.0924	0.500	1	10/24/2019 07:12	WG1368527
Ethylbenzene	U		0.158	0.500	1	10/24/2019 07:12	WG1368527
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/24/2019 07:12	WG1368527
2-Hexanone	U		0.757	5.00	1	10/24/2019 07:12	WG1368527
n-Hexane	U	JO	0.305	5.00	1	10/24/2019 07:12	WG1368527
Iodomethane	U		0.377	10.0	1	10/24/2019 07:12	WG1368527
Isopropylbenzene	U		0.126	0.500	1	10/24/2019 07:12	WG1368527
p-Isopropyltoluene	U		0.138	0.500	1	10/24/2019 07:12	WG1368527
2-Butanone (MEK)	U		1.28	5.00	1	10/24/2019 07:12	WG1368527
Methylene Chloride	U		1.07	2.50	1	10/24/2019 07:12	WG1368527
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/24/2019 07:12	WG1368527
Methyl tert-butyl ether	U		0.102	0.500	1	10/24/2019 07:12	WG1368527
Naphthalene	U		0.174	2.50	1	10/24/2019 07:12	WG1368527
n-Propylbenzene	U		0.162	0.500	1	10/24/2019 07:12	WG1368527
Styrene	U		0.117	0.500	1	10/24/2019 07:12	WG1368527
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/24/2019 07:12	WG1368527
1,1,2,2-Tetrachloroethane	U	JO	0.130	0.500	1	10/24/2019 07:12	WG1368527
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/24/2019 07:12	WG1368527
Tetrachloroethene	1180		9.95	25.0	50	10/24/2019 21:32	WG1369128
Toluene	U		0.412	0.500	1	10/24/2019 07:12	WG1368527
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/24/2019 07:12	WG1368527
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/24/2019 07:12	WG1368527
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/24/2019 07:12	WG1368527
1,1,2-Trichloroethane	U	JO J4	0.186	0.500	1	10/24/2019 07:12	WG1368527
Trichloroethene	498		7.65	25.0	50	10/24/2019 21:32	WG1369128
Trichlorofluoromethane	U		0.130	2.50	1	10/24/2019 07:12	WG1368527
1,2,3-Trichloropropane	U		0.247	2.50	1	10/24/2019 07:12	WG1368527
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/24/2019 07:12	WG1368527
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/24/2019 07:12	WG1368527
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/24/2019 07:12	WG1368527
Vinyl acetate	U	JO	0.645	5.00	1	10/24/2019 07:12	WG1368527
Vinyl chloride	0.853		0.118	0.500	1	10/24/2019 07:12	WG1368527
Xylenes, Total	U		0.316	1.50	1	10/24/2019 07:12	WG1368527
(S) Toluene-d8	98.6			80.0-120		10/24/2019 07:12	WG1368527
(S) Toluene-d8	112			80.0-120		10/24/2019 21:32	WG1369128
(S) 4-Bromofluorobenzene	107			77.0-126		10/24/2019 07:12	WG1368527
(S) 4-Bromofluorobenzene	112			77.0-126		10/24/2019 21:32	WG1369128

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	114			70.0-130		10/24/2019 07:12	WG1368527
(S) 1,2-Dichloroethane-d4	110			70.0-130		10/24/2019 21:32	WG1369128

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	174000		2710	20000	1	10/22/2019 00:22	WG1366029

Sample Narrative:

L1150336-08 WG1366029: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	10500		51.9	1000	1	10/16/2019 21:00	WG1363847
Nitrate	U		22.7	100	1	10/16/2019 21:00	WG1363847
Sulfate	8290		77.4	5000	1	10/16/2019 21:00	WG1363847

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2320	<u>B</u>	102	1000	1	10/19/2019 23:20	WG1365601

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	6770		15.0	100	1	10/22/2019 15:10	WG1364631
Manganese	420		0.250	5.00	1	10/22/2019 15:10	WG1364631

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/18/2019 18:42	WG1365317
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		10/18/2019 18:42	WG1365317

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	20.2		0.287	0.678	1	10/18/2019 13:10	WG1365165
Ethane	U		0.296	1.29	1	10/18/2019 13:10	WG1365165
Ethene	U		0.422	1.27	1	10/18/2019 13:10	WG1365165

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U	<u>JO</u>	1.05	25.0	1	10/25/2019 22:30	WG1369955
Acrylonitrile	U		0.873	5.00	1	10/25/2019 22:30	WG1369955
Benzene	U		0.0896	0.500	1	10/25/2019 22:30	WG1369955
Bromobenzene	U	<u>JO</u>	0.133	0.500	1	10/25/2019 22:30	WG1369955
Bromodichloromethane	U		0.0800	0.500	1	10/25/2019 22:30	WG1369955
Bromochloromethane	U		0.145	0.500	1	10/25/2019 22:30	WG1369955
Bromoform	U		0.186	0.500	1	10/25/2019 22:30	WG1369955
Bromomethane	U		0.157	2.50	1	10/25/2019 22:30	WG1369955
n-Butylbenzene	U		0.143	0.500	1	10/25/2019 22:30	WG1369955
sec-Butylbenzene	U		0.134	0.500	1	10/25/2019 22:30	WG1369955
tert-Butylbenzene	U		0.183	0.500	1	10/25/2019 22:30	WG1369955
Carbon disulfide	U		0.101	0.500	1	10/25/2019 22:30	WG1369955
Carbon tetrachloride	U		0.159	0.500	1	10/25/2019 22:30	WG1369955

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Collected date/time: 10/15/19 14:25

L1150336

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/25/2019 22:30	WG1369955
Chlorodibromomethane	U		0.128	0.500	1	10/25/2019 22:30	WG1369955
Chloroethane	U		0.141	2.50	1	10/25/2019 22:30	WG1369955
Chloroform	U		0.0860	0.500	1	10/25/2019 22:30	WG1369955
Chloromethane	U	JO	0.153	1.25	1	10/25/2019 22:30	WG1369955
2-Chlorotoluene	U		0.111	0.500	1	10/25/2019 22:30	WG1369955
4-Chlorotoluene	U		0.0972	0.500	1	10/25/2019 22:30	WG1369955
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/25/2019 22:30	WG1369955
1,2-Dibromoethane	U		0.193	0.500	1	10/25/2019 22:30	WG1369955
Dibromomethane	U		0.117	0.500	1	10/25/2019 22:30	WG1369955
1,2-Dichlorobenzene	U		0.101	0.500	1	10/25/2019 22:30	WG1369955
1,3-Dichlorobenzene	U		0.130	0.500	1	10/25/2019 22:30	WG1369955
1,4-Dichlorobenzene	U		0.121	0.500	1	10/25/2019 22:30	WG1369955
Dichlorodifluoromethane	U		0.127	2.50	1	10/25/2019 22:30	WG1369955
1,1-Dichloroethane	U		0.114	0.500	1	10/25/2019 22:30	WG1369955
1,2-Dichloroethane	U		0.108	0.500	1	10/25/2019 22:30	WG1369955
1,1-Dichloroethene	U		0.188	0.500	1	10/25/2019 22:30	WG1369955
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/25/2019 22:30	WG1369955
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/25/2019 22:30	WG1369955
1,2-Dichloropropane	U		0.190	0.500	1	10/25/2019 22:30	WG1369955
1,1-Dichloropropene	U		0.128	0.500	1	10/25/2019 22:30	WG1369955
1,3-Dichloropropane	U		0.147	1.00	1	10/25/2019 22:30	WG1369955
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/25/2019 22:30	WG1369955
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/25/2019 22:30	WG1369955
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/25/2019 22:30	WG1369955
2,2-Dichloropropane	U		0.0929	0.500	1	10/25/2019 22:30	WG1369955
Di-isopropyl ether	U		0.0924	0.500	1	10/25/2019 22:30	WG1369955
Ethylbenzene	U		0.158	0.500	1	10/25/2019 22:30	WG1369955
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/25/2019 22:30	WG1369955
2-Hexanone	U		0.757	5.00	1	10/25/2019 22:30	WG1369955
n-Hexane	U		0.305	5.00	1	10/25/2019 22:30	WG1369955
Iodomethane	U		0.377	10.0	1	10/25/2019 22:30	WG1369955
Isopropylbenzene	U		0.126	0.500	1	10/25/2019 22:30	WG1369955
p-Isopropyltoluene	U		0.138	0.500	1	10/25/2019 22:30	WG1369955
2-Butanone (MEK)	U		1.28	5.00	1	10/25/2019 22:30	WG1369955
Methylene Chloride	U		1.07	2.50	1	10/25/2019 22:30	WG1369955
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/25/2019 22:30	WG1369955
Methyl tert-butyl ether	U		0.102	0.500	1	10/25/2019 22:30	WG1369955
Naphthalene	U		0.174	2.50	1	10/25/2019 22:30	WG1369955
n-Propylbenzene	U		0.162	0.500	1	10/25/2019 22:30	WG1369955
Styrene	U		0.117	0.500	1	10/25/2019 22:30	WG1369955
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/25/2019 22:30	WG1369955
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/25/2019 22:30	WG1369955
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/25/2019 22:30	WG1369955
Tetrachloroethene	U		0.199	0.500	1	10/25/2019 22:30	WG1369955
Toluene	U		0.412	0.500	1	10/25/2019 22:30	WG1369955
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/25/2019 22:30	WG1369955
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/25/2019 22:30	WG1369955
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/25/2019 22:30	WG1369955
1,1,2-Trichloroethane	U		0.186	0.500	1	10/25/2019 22:30	WG1369955
Trichloroethene	U		0.153	0.500	1	10/25/2019 22:30	WG1369955
Trichlorofluoromethane	U		0.130	2.50	1	10/25/2019 22:30	WG1369955
1,2,3-Trichloropropane	U		0.247	2.50	1	10/25/2019 22:30	WG1369955
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/25/2019 22:30	WG1369955
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/25/2019 22:30	WG1369955
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/25/2019 22:30	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/25/2019 22:30	WG1369955
Vinyl chloride	U		0.118	0.500	1	10/25/2019 22:30	WG1369955
Xylenes, Total	U		0.316	1.50	1	10/25/2019 22:30	WG1369955
<i>(S) Toluene-d8</i>	112			80.0-120		10/25/2019 22:30	WG1369955
<i>(S) 4-Bromofluorobenzene</i>	113			77.0-126		10/25/2019 22:30	WG1369955
<i>(S) 1,2-Dichloroethane-d4</i>	102			70.0-130		10/25/2019 22:30	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	667000		2710	20000	1	10/22/2019 00:30	WG1366029

Sample Narrative:

L1150336-09 WG1366029: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	26100		51.9	1000	1	10/16/2019 21:13	WG1363847
Nitrate	U		22.7	100	1	10/16/2019 21:13	WG1363847
Sulfate	68700		77.4	5000	1	10/16/2019 21:13	WG1363847

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	11300		102	1000	1	10/19/2019 23:45	WG1365601

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	4600		15.0	100	1	10/22/2019 15:14	WG1364631
Manganese	1170		0.250	5.00	1	10/22/2019 15:14	WG1364631

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	365		31.6	100	1	10/18/2019 19:06	WG1365317
(S) a,a,a-Trifluorotoluene(FID)	108			78.0-120		10/18/2019 19:06	WG1365317

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	12900		2.87	6.78	10	10/18/2019 13:13	WG1365165
Ethane	34.1		0.296	1.29	1	10/17/2019 15:55	WG1364420
Ethene	29.6		0.422	1.27	1	10/17/2019 15:55	WG1364420

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.21	J JO	1.05	25.0	1	10/25/2019 22:50	WG1369955
Acrylonitrile	U		0.873	5.00	1	10/25/2019 22:50	WG1369955
Benzene	0.167	J	0.0896	0.500	1	10/25/2019 22:50	WG1369955
Bromobenzene	U	JO	0.133	0.500	1	10/25/2019 22:50	WG1369955
Bromodichloromethane	U		0.0800	0.500	1	10/25/2019 22:50	WG1369955
Bromochloromethane	U		0.145	0.500	1	10/25/2019 22:50	WG1369955
Bromoform	U		0.186	0.500	1	10/25/2019 22:50	WG1369955
Bromomethane	U		0.157	2.50	1	10/25/2019 22:50	WG1369955
n-Butylbenzene	U		0.143	0.500	1	10/25/2019 22:50	WG1369955
sec-Butylbenzene	U		0.134	0.500	1	10/25/2019 22:50	WG1369955
tert-Butylbenzene	U		0.183	0.500	1	10/25/2019 22:50	WG1369955
Carbon disulfide	0.342	J	0.101	0.500	1	10/25/2019 22:50	WG1369955
Carbon tetrachloride	U		0.159	0.500	1	10/25/2019 22:50	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/25/2019 22:50	WG1369955
Chlorodibromomethane	U		0.128	0.500	1	10/25/2019 22:50	WG1369955
Chloroethane	3.45		0.141	2.50	1	10/25/2019 22:50	WG1369955
Chloroform	U		0.0860	0.500	1	10/25/2019 22:50	WG1369955
Chloromethane	U	JO	0.153	1.25	1	10/25/2019 22:50	WG1369955
2-Chlorotoluene	U		0.111	0.500	1	10/25/2019 22:50	WG1369955
4-Chlorotoluene	U		0.0972	0.500	1	10/25/2019 22:50	WG1369955
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/25/2019 22:50	WG1369955
1,2-Dibromoethane	U		0.193	0.500	1	10/25/2019 22:50	WG1369955
Dibromomethane	U		0.117	0.500	1	10/25/2019 22:50	WG1369955
1,2-Dichlorobenzene	U		0.101	0.500	1	10/25/2019 22:50	WG1369955
1,3-Dichlorobenzene	U		0.130	0.500	1	10/25/2019 22:50	WG1369955
1,4-Dichlorobenzene	U		0.121	0.500	1	10/25/2019 22:50	WG1369955
Dichlorodifluoromethane	U		0.127	2.50	1	10/25/2019 22:50	WG1369955
1,1-Dichloroethane	U		0.114	0.500	1	10/25/2019 22:50	WG1369955
1,2-Dichloroethane	U		0.108	0.500	1	10/25/2019 22:50	WG1369955
1,1-Dichloroethene	3.27		0.188	0.500	1	10/25/2019 22:50	WG1369955
cis-1,2-Dichloroethene	333		0.933	5.00	10	10/27/2019 15:29	WG1370146
trans-1,2-Dichloroethene	7.04		0.152	0.500	1	10/25/2019 22:50	WG1369955
1,2-Dichloropropane	U		0.190	0.500	1	10/25/2019 22:50	WG1369955
1,1-Dichloropropene	U		0.128	0.500	1	10/25/2019 22:50	WG1369955
1,3-Dichloropropane	U		0.147	1.00	1	10/25/2019 22:50	WG1369955
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/25/2019 22:50	WG1369955
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/25/2019 22:50	WG1369955
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/25/2019 22:50	WG1369955
2,2-Dichloropropane	U		0.0929	0.500	1	10/25/2019 22:50	WG1369955
Di-isopropyl ether	U		0.0924	0.500	1	10/25/2019 22:50	WG1369955
Ethylbenzene	U		0.158	0.500	1	10/25/2019 22:50	WG1369955
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/25/2019 22:50	WG1369955
2-Hexanone	U		0.757	5.00	1	10/25/2019 22:50	WG1369955
n-Hexane	U		0.305	5.00	1	10/25/2019 22:50	WG1369955
Iodomethane	U		0.377	10.0	1	10/25/2019 22:50	WG1369955
Isopropylbenzene	U		0.126	0.500	1	10/25/2019 22:50	WG1369955
p-Isopropyltoluene	U		0.138	0.500	1	10/25/2019 22:50	WG1369955
2-Butanone (MEK)	U		1.28	5.00	1	10/25/2019 22:50	WG1369955
Methylene Chloride	U		1.07	2.50	1	10/25/2019 22:50	WG1369955
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/25/2019 22:50	WG1369955
Methyl tert-butyl ether	U		0.102	0.500	1	10/25/2019 22:50	WG1369955
Naphthalene	U		0.174	2.50	1	10/25/2019 22:50	WG1369955
n-Propylbenzene	U		0.162	0.500	1	10/25/2019 22:50	WG1369955
Styrene	U		0.117	0.500	1	10/25/2019 22:50	WG1369955
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/25/2019 22:50	WG1369955
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/25/2019 22:50	WG1369955
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/25/2019 22:50	WG1369955
Tetrachloroethene	41.7		0.199	0.500	1	10/25/2019 22:50	WG1369955
Toluene	0.572		0.412	0.500	1	10/25/2019 22:50	WG1369955
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/25/2019 22:50	WG1369955
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/25/2019 22:50	WG1369955
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/25/2019 22:50	WG1369955
1,1,2-Trichloroethane	U		0.186	0.500	1	10/25/2019 22:50	WG1369955
Trichloroethene	138		0.153	0.500	1	10/25/2019 22:50	WG1369955
Trichlorofluoromethane	U		0.130	2.50	1	10/25/2019 22:50	WG1369955
1,2,3-Trichloropropane	U		0.247	2.50	1	10/25/2019 22:50	WG1369955
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/25/2019 22:50	WG1369955
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/25/2019 22:50	WG1369955
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/25/2019 22:50	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/25/2019 22:50	WG1369955
Vinyl chloride	216		1.18	5.00	10	10/27/2019 15:29	WG1370146
Xylenes, Total	U		0.316	1.50	1	10/25/2019 22:50	WG1369955
<i>(S) Toluene-d8</i>	111			80.0-120		10/25/2019 22:50	WG1369955
<i>(S) Toluene-d8</i>	95.1			80.0-120		10/27/2019 15:29	WG1370146
<i>(S) 4-Bromofluorobenzene</i>	112			77.0-126		10/25/2019 22:50	WG1369955
<i>(S) 4-Bromofluorobenzene</i>	92.2			77.0-126		10/27/2019 15:29	WG1370146
<i>(S) 1,2-Dichloroethane-d4</i>	104			70.0-130		10/25/2019 22:50	WG1369955
<i>(S) 1,2-Dichloroethane-d4</i>	101			70.0-130		10/27/2019 15:29	WG1370146

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/18/2019 12:20	WG1365317
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		10/18/2019 12:20	WG1365317

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		1.05	25.0	1	10/26/2019 14:49	WG1370189
Acrylonitrile	U		0.873	5.00	1	10/26/2019 14:49	WG1370189
Benzene	U		0.0896	0.500	1	10/26/2019 14:49	WG1370189
Bromobenzene	U		0.133	0.500	1	10/26/2019 14:49	WG1370189
Bromodichloromethane	U		0.0800	0.500	1	10/26/2019 14:49	WG1370189
Bromochloromethane	U		0.145	0.500	1	10/26/2019 14:49	WG1370189
Bromoform	U		0.186	0.500	1	10/26/2019 14:49	WG1370189
Bromomethane	U	<u>JO</u>	0.157	2.50	1	10/26/2019 14:49	WG1370189
n-Butylbenzene	U		0.143	0.500	1	10/26/2019 14:49	WG1370189
sec-Butylbenzene	U		0.134	0.500	1	10/26/2019 14:49	WG1370189
tert-Butylbenzene	U		0.183	0.500	1	10/26/2019 14:49	WG1370189
Carbon disulfide	0.146	<u>J</u>	0.101	0.500	1	10/26/2019 14:49	WG1370189
Carbon tetrachloride	U		0.159	0.500	1	10/26/2019 14:49	WG1370189
Chlorobenzene	U		0.140	0.500	1	10/26/2019 14:49	WG1370189
Chlorodibromomethane	U		0.128	0.500	1	10/26/2019 14:49	WG1370189
Chloroethane	U		0.141	2.50	1	10/26/2019 14:49	WG1370189
Chloroform	U		0.0860	0.500	1	10/26/2019 14:49	WG1370189
Chloromethane	U		0.153	1.25	1	10/26/2019 14:49	WG1370189
2-Chlorotoluene	U		0.111	0.500	1	10/26/2019 14:49	WG1370189
4-Chlorotoluene	U		0.0972	0.500	1	10/26/2019 14:49	WG1370189
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/26/2019 14:49	WG1370189
1,2-Dibromoethane	U		0.193	0.500	1	10/26/2019 14:49	WG1370189
Dibromomethane	U		0.117	0.500	1	10/26/2019 14:49	WG1370189
1,2-Dichlorobenzene	U		0.101	0.500	1	10/26/2019 14:49	WG1370189
1,3-Dichlorobenzene	U		0.130	0.500	1	10/26/2019 14:49	WG1370189
1,4-Dichlorobenzene	U		0.121	0.500	1	10/26/2019 14:49	WG1370189
Dichlorodifluoromethane	U		0.127	2.50	1	10/26/2019 14:49	WG1370189
1,1-Dichloroethane	U		0.114	0.500	1	10/26/2019 14:49	WG1370189
1,2-Dichloroethane	U		0.108	0.500	1	10/26/2019 14:49	WG1370189
1,1-Dichloroethene	U		0.188	0.500	1	10/26/2019 14:49	WG1370189
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/26/2019 14:49	WG1370189
trans-1,2-Dichloroethene	0.365	<u>J</u>	0.152	0.500	1	10/26/2019 14:49	WG1370189
1,2-Dichloropropane	U		0.190	0.500	1	10/26/2019 14:49	WG1370189
1,1-Dichloropropene	U		0.128	0.500	1	10/26/2019 14:49	WG1370189
1,3-Dichloropropane	U		0.147	1.00	1	10/26/2019 14:49	WG1370189
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/26/2019 14:49	WG1370189
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/26/2019 14:49	WG1370189
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/26/2019 14:49	WG1370189
2,2-Dichloropropane	U		0.0929	0.500	1	10/26/2019 14:49	WG1370189
Di-isopropyl ether	U		0.0924	0.500	1	10/26/2019 14:49	WG1370189
Ethylbenzene	U		0.158	0.500	1	10/26/2019 14:49	WG1370189
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/26/2019 14:49	WG1370189
2-Hexanone	U		0.757	5.00	1	10/26/2019 14:49	WG1370189
n-Hexane	U		0.305	5.00	1	10/26/2019 14:49	WG1370189
Iodomethane	U	<u>JO</u>	0.377	10.0	1	10/26/2019 14:49	WG1370189
Isopropylbenzene	U	<u>JO</u>	0.126	0.500	1	10/26/2019 14:49	WG1370189
p-Isopropyltoluene	U		0.138	0.500	1	10/26/2019 14:49	WG1370189
2-Butanone (MEK)	U		1.28	5.00	1	10/26/2019 14:49	WG1370189



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methylene Chloride	U		1.07	2.50	1	10/26/2019 14:49	WG1370189
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/26/2019 14:49	WG1370189
Methyl tert-butyl ether	U		0.102	0.500	1	10/26/2019 14:49	WG1370189
Naphthalene	0.910	<u>BJ</u>	0.174	2.50	1	10/26/2019 14:49	WG1370189
n-Propylbenzene	U		0.162	0.500	1	10/26/2019 14:49	WG1370189
Styrene	U		0.117	0.500	1	10/26/2019 14:49	WG1370189
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/26/2019 14:49	WG1370189
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/26/2019 14:49	WG1370189
1,1,2-Trichlorotrifluoroethane	U	<u>JO</u>	0.164	0.500	1	10/26/2019 14:49	WG1370189
Tetrachloroethene	U		0.199	0.500	1	10/26/2019 14:49	WG1370189
Toluene	U		0.412	0.500	1	10/26/2019 14:49	WG1370189
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/26/2019 14:49	WG1370189
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/26/2019 14:49	WG1370189
1,1,1-Trichloroethane	U	<u>JO</u>	0.0940	0.500	1	10/26/2019 14:49	WG1370189
1,1,2-Trichloroethane	U		0.186	0.500	1	10/26/2019 14:49	WG1370189
Trichloroethene	U	<u>JO</u>	0.153	0.500	1	10/26/2019 14:49	WG1370189
Trichlorofluoromethane	U		0.130	2.50	1	10/26/2019 14:49	WG1370189
1,2,3-Trichloropropane	U		0.247	2.50	1	10/26/2019 14:49	WG1370189
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/26/2019 14:49	WG1370189
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/26/2019 14:49	WG1370189
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/26/2019 14:49	WG1370189
Vinyl acetate	U		0.645	5.00	1	10/26/2019 14:49	WG1370189
Vinyl chloride	U		0.118	0.500	1	10/26/2019 14:49	WG1370189
Xylenes, Total	U		0.316	1.50	1	10/26/2019 14:49	WG1370189
(S) Toluene-d8	97.4			80.0-120		10/26/2019 14:49	WG1370189
(S) 4-Bromofluorobenzene	94.4			77.0-126		10/26/2019 14:49	WG1370189
(S) 1,2-Dichloroethane-d4	97.1			70.0-130		10/26/2019 14:49	WG1370189

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3463464-1 10/22/19 02:58

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	3910	↓	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1149909-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1149909-01 10/22/19 03:44 • (DUP) R3463464-2 10/22/19 03:51

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	369000	368000	1	0.0475		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

L1150335-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1150335-01 10/22/19 05:21 • (DUP) R3463464-4 10/22/19 05:28

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	532000	533000	1	0.296		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3463464-3 10/22/19 04:14

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	103000	103	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3463428-1 10/21/19 21:12

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	4460	↓	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1150748-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1150748-01 10/21/19 23:29 • (DUP) R3463428-2 10/21/19 23:37

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	50300	50300	1	0.0876		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

L1150748-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1150748-06 10/22/19 02:05 • (DUP) R3463428-4 10/22/19 02:13

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	33700	33600	1	0.291		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3463428-3 10/22/19 00:37

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	101000	101	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3461831-1 10/16/19 10:40

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	U		51.9	1000
Nitrate	U		22.7	100
Sulfate	86.7	J	77.4	5000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1150320-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1150320-06 10/16/19 15:41 • (DUP) R3461831-3 10/16/19 15:54

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	10000	9910	1	1.39		15
Nitrate	49.4	47.0	1	4.98	J	15
Sulfate	15300	15200	1	1.07		15

L1150339-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1150339-10 10/16/19 21:26 • (DUP) R3461831-5 10/16/19 21:38

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	72100	72300	1	0.176		15
Nitrate	U	0.000	1	0.000		15

Laboratory Control Sample (LCS)

(LCS) R3461831-2 10/16/19 10:53

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Chloride	40000	39800	99.5	80.0-120	
Nitrate	8000	8190	102	80.0-120	
Sulfate	40000	40300	101	80.0-120	

L1150320-09 Original Sample (OS) • Matrix Spike (MS)

(OS) L1150320-09 10/16/19 16:06 • (MS) R3461831-4 10/16/19 16:19

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Chloride	50000	26500	75200	97.5	1	80.0-120	
Nitrate	5000	211	5210	100	1	80.0-120	



L1150320-09 Original Sample (OS) • Matrix Spike (MS)

(OS) L1150320-09 10/16/19 16:06 • (MS) R3461831-4 10/16/19 16:19

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Sulfate	50000	45400	93100	95.4	1	80.0-120	

L1150339-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1150339-10 10/16/19 21:26 • (MS) R3461831-6 10/16/19 21:51 • (MSD) R3461831-7 10/16/19 22:04

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Chloride	50000	72100	118000	118000	92.0	91.2	1	80.0-120	<u>E</u>	<u>E</u>	0.350	15
Nitrate	5000	U	5080	5060	102	101	1	80.0-120			0.483	15

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3462895-1 10/19/19 12:52

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	581	↓	102	1000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1150336-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1150336-03 10/19/19 19:28 • (DUP) R3462895-3 10/19/19 19:42

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	3340	3330	1	0.450		20

L1150336-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1150336-09 10/19/19 23:45 • (DUP) R3462895-6 10/20/19 00:08

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	11300	11200	1	0.979		20

Laboratory Control Sample (LCS)

(LCS) R3462895-2 10/19/19 13:37

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC (Total Organic Carbon)	75000	68400	91.2	85.0-115	

L1150336-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1150336-05 10/19/19 21:31 • (MS) R3462895-4 10/19/19 21:54 • (MSD) R3462895-5 10/19/19 22:16

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	2320	50000	48000	95.4	91.4	1	80.0-120			4.08	20

L1150505-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1150505-08 10/20/19 02:35 • (MS) R3462895-7 10/20/19 02:53 • (MSD) R3462895-8 10/20/19 03:20

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	843	47200	46900	92.8	92.0	1	80.0-120			0.829	20



Method Blank (MB)

(MB) R3463726-1 10/22/19 14:02

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Iron	U		15.0	100
Manganese	0.261	J	0.250	5.00

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3463726-2 10/22/19 14:05 • (LCSD) R3463726-3 10/22/19 14:09

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Iron	5000	4950	5110	99.0	102	80.0-120			3.11	20
Manganese	50.0	48.7	50.4	97.4	101	80.0-120			3.49	20

5 Sr

6 Qc

L1150336-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1150336-01 10/22/19 14:13 • (MS) R3463726-5 10/22/19 14:20 • (MSD) R3463726-6 10/22/19 14:24

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Iron	5000	388	5490	5310	102	98.5	1	75.0-125			3.27	20
Manganese	50.0	327	385	372	117	90.5	1	75.0-125			3.44	20

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3462806-3 10/18/19 11:29

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	108			78.0-120

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS)

(LCS) R3462806-2 10/18/19 10:41

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5940	108	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			86.7	78.0-120	

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3462155-1 10/17/19 14:17

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1150299-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1150299-08 10/17/19 14:54 • (DUP) R3462155-2 10/17/19 15:03

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	247	242	1	2.20		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

L1150336-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1150336-03 10/17/19 16:04 • (DUP) R3462155-4 10/17/19 16:09

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	U	0.000	1	0.000		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3462155-3 10/17/19 16:00 • (LCSD) R3462155-5 10/17/19 16:12

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	73.1	69.7	108	103	85.0-115			4.87	20
Ethane	129	129	127	100	98.1	85.0-115			1.96	20
Ethene	127	136	133	107	104	85.0-115			2.30	20



Method Blank (MB)

(MB) R3462507-1 10/18/19 13:05

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

L1150336-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1150336-08 10/18/19 13:10 • (DUP) R3462507-2 10/18/19 13:33

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	20.2	22.0	1	8.39		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3462507-5 10/18/19 13:50 • (LCSD) R3462507-6 10/18/19 13:56

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	72.3	71.6	107	106	85.0-115			0.913	20
Ethane	129	127	127	98.2	98.7	85.0-115			0.516	20
Ethene	127	133	133	105	105	85.0-115			0.356	20

L1150339-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1150339-10 10/18/19 13:42 • (MS) R3462507-3 10/18/19 13:45 • (MSD) R3462507-4 10/18/19 13:47

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Methane	67.8	10400	10600	11000	19.7	74.1	10	85.0-115	V	V	3.43	20
Ethane	129	380	1800	1480	110	85.0	10	85.0-115			19.6	20
Ethene	127	741	2220	1900	116	91.0	10	85.0-115	J5		15.6	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3464735-2 10/23/19 22:46

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U	JO	0.101	0.500
1,3-Dichlorobenzene	U	JO	0.130	0.500
1,4-Dichlorobenzene	U	JO	0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U	JO	0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3464735-2 10/23/19 22:46

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	0.419	J	0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U	JO	0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	0.220	J	0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U	JO	0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	0.169	J	0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U	JO	0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U	JO	0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	102			80.0-120
(S) 4-Bromofluorobenzene	105			77.0-126
(S) 1,2-Dichloroethane-d4	103			70.0-130

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Laboratory Control Sample (LCS)

(LCS) R3464735-1 10/23/19 22:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Acetone	125	102	81.6	19.0-160	
Acrylonitrile	125	108	86.4	55.0-149	
Benzene	25.0	21.5	86.0	70.0-123	
Bromobenzene	25.0	20.0	80.0	73.0-121	
Bromodichloromethane	25.0	24.5	98.0	75.0-120	
Bromochloromethane	25.0	23.0	92.0	76.0-122	
Bromoform	25.0	22.5	90.0	68.0-132	
Bromomethane	25.0	23.5	94.0	10.0-160	
n-Butylbenzene	25.0	21.2	84.8	73.0-125	
sec-Butylbenzene	25.0	21.6	86.4	75.0-125	
tert-Butylbenzene	25.0	22.4	89.6	76.0-124	
Carbon disulfide	25.0	22.0	88.0	61.0-128	
Carbon tetrachloride	25.0	27.9	112	68.0-126	
Chlorobenzene	25.0	20.5	82.0	80.0-121	
Chlorodibromomethane	25.0	19.5	78.0	77.0-125	
Chloroethane	25.0	23.4	93.6	47.0-150	
Chloroform	25.0	22.8	91.2	73.0-120	
Chloromethane	25.0	20.5	82.0	41.0-142	
2-Chlorotoluene	25.0	20.6	82.4	76.0-123	
4-Chlorotoluene	25.0	20.6	82.4	75.0-122	
1,2-Dibromo-3-Chloropropane	25.0	20.9	83.6	58.0-134	
1,2-Dibromoethane	25.0	20.3	81.2	80.0-122	
Dibromomethane	25.0	23.6	94.4	80.0-120	
1,2-Dichlorobenzene	25.0	19.9	79.6	79.0-121	<u>JO</u>
1,3-Dichlorobenzene	25.0	19.5	78.0	79.0-120	<u>JO J4</u>
1,4-Dichlorobenzene	25.0	19.7	78.8	79.0-120	<u>JO J4</u>
Dichlorodifluoromethane	25.0	22.8	91.2	51.0-149	
1,1-Dichloroethane	25.0	22.9	91.6	70.0-126	
1,2-Dichloroethane	25.0	21.4	85.6	70.0-128	
1,1-Dichloroethene	25.0	22.8	91.2	71.0-124	
cis-1,2-Dichloroethene	25.0	22.4	89.6	73.0-120	
trans-1,2-Dichloroethene	25.0	21.6	86.4	73.0-120	
1,2-Dichloropropane	25.0	22.1	88.4	77.0-125	
1,1-Dichloropropene	25.0	24.7	98.8	74.0-126	
1,3-Dichloropropane	25.0	19.5	78.0	80.0-120	<u>JO J4</u>
cis-1,3-Dichloropropene	25.0	23.0	92.0	80.0-123	
trans-1,3-Dichloropropene	25.0	20.5	82.0	78.0-124	
trans-1,4-Dichloro-2-butene	25.0	17.9	71.6	33.0-144	<u>JO</u>
2,2-Dichloropropane	25.0	21.4	85.6	58.0-130	
Di-isopropyl ether	25.0	20.5	82.0	58.0-138	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Laboratory Control Sample (LCS)

(LCS) R3464735-1 10/23/19 22:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Ethylbenzene	25.0	20.6	82.4	79.0-123	
Hexachloro-1,3-butadiene	25.0	23.9	95.6	54.0-138	
2-Hexanone	125	109	87.2	67.0-149	
n-Hexane	25.0	18.7	74.8	57.0-133	<u>JO</u>
Iodomethane	125	112	89.6	33.0-147	
Isopropylbenzene	25.0	21.4	85.6	76.0-127	
p-Isopropyltoluene	25.0	22.6	90.4	76.0-125	
2-Butanone (MEK)	125	114	91.2	44.0-160	
Methylene Chloride	25.0	20.8	83.2	67.0-120	
4-Methyl-2-pentanone (MIBK)	125	101	80.8	68.0-142	
Methyl tert-butyl ether	25.0	21.8	87.2	68.0-125	
Naphthalene	25.0	20.7	82.8	54.0-135	
n-Propylbenzene	25.0	20.8	83.2	77.0-124	
Styrene	25.0	21.5	86.0	73.0-130	
1,1,1,2-Tetrachloroethane	25.0	20.9	83.6	75.0-125	
1,1,2,2-Tetrachloroethane	25.0	18.2	72.8	65.0-130	<u>JO</u>
1,1,2-Trichlorotrifluoroethane	25.0	20.5	82.0	69.0-132	
Tetrachloroethene	25.0	21.9	87.6	72.0-132	
Toluene	25.0	20.3	81.2	79.0-120	
1,2,3-Trichlorobenzene	25.0	21.2	84.8	50.0-138	
1,2,4-Trichlorobenzene	25.0	20.6	82.4	57.0-137	
1,1,1-Trichloroethane	25.0	26.2	105	73.0-124	
1,1,2-Trichloroethane	25.0	19.2	76.8	80.0-120	<u>JO J4</u>
Trichloroethene	25.0	25.9	104	78.0-124	
Trichlorofluoromethane	25.0	27.8	111	59.0-147	
1,2,3-Trichloropropane	25.0	21.1	84.4	73.0-130	
1,2,4-Trimethylbenzene	25.0	20.0	80.0	76.0-121	
1,2,3-Trimethylbenzene	25.0	20.3	81.2	77.0-120	
1,3,5-Trimethylbenzene	25.0	20.7	82.8	76.0-122	
Vinyl acetate	125	59.9	47.9	11.0-160	<u>JO</u>
Vinyl chloride	25.0	23.6	94.4	67.0-131	
Xylenes, Total	75.0	60.9	81.2	79.0-123	
(S) Toluene-d8			96.8	80.0-120	
(S) 4-Bromofluorobenzene			102	77.0-126	
(S) 1,2-Dichloroethane-d4			109	70.0-130	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3464910-2 10/24/19 18:25

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
cis-1,2-Dichloroethene	U		0.0933	0.500
Tetrachloroethene	U		0.199	0.500
Trichloroethene	U		0.153	0.500
(S) Toluene-d8	113			80.0-120
(S) 4-Bromofluorobenzene	114			77.0-126
(S) 1,2-Dichloroethane-d4	104			70.0-130

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Laboratory Control Sample (LCS)

(LCS) R3464910-1 10/24/19 17:04

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
cis-1,2-Dichloroethene	25.0	22.8	91.2	73.0-120	
Tetrachloroethene	25.0	25.5	102	72.0-132	
Trichloroethene	25.0	25.0	100	78.0-124	
(S) Toluene-d8			111	80.0-120	
(S) 4-Bromofluorobenzene			110	77.0-126	
(S) 1,2-Dichloroethane-d4			109	70.0-130	

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3465284-3 10/25/19 21:00

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3465284-3 10/25/19 21:00

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	0.238	U	0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,2,4-Trimethylbenzene	U		0.123	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	113			80.0-120
(S) 4-Bromofluorobenzene	114			77.0-126
(S) 1,2-Dichloroethane-d4	102			70.0-130

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Laboratory Control Sample (LCS)

(LCS) R3465284-1 10/25/19 19:59

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Acetone	125	94.6	75.7	19.0-160	
Acrylonitrile	125	128	102	55.0-149	
Benzene	25.0	23.6	94.4	70.0-123	
Bromobenzene	25.0	20.2	80.8	73.0-121	
Bromodichloromethane	25.0	25.0	100	75.0-120	
Bromochloromethane	25.0	27.5	110	76.0-122	
Bromoform	25.0	30.8	123	68.0-132	
Bromomethane	25.0	26.6	106	10.0-160	
n-Butylbenzene	25.0	22.6	90.4	73.0-125	
sec-Butylbenzene	25.0	22.5	90.0	75.0-125	
tert-Butylbenzene	25.0	24.8	99.2	76.0-124	
Carbon disulfide	25.0	23.7	94.8	61.0-128	
Carbon tetrachloride	25.0	29.8	119	68.0-126	
Chlorobenzene	25.0	26.6	106	80.0-121	
Chlorodibromomethane	25.0	30.2	121	77.0-125	
Chloroethane	25.0	25.9	104	47.0-150	
Chloroform	25.0	23.2	92.8	73.0-120	
Chloromethane	25.0	21.7	86.8	41.0-142	
2-Chlorotoluene	25.0	21.7	86.8	76.0-123	
4-Chlorotoluene	25.0	21.9	87.6	75.0-122	
1,2-Dibromo-3-Chloropropane	25.0	26.6	106	58.0-134	
1,2-Dibromoethane	25.0	25.7	103	80.0-122	
Dibromomethane	25.0	25.7	103	80.0-120	
1,2-Dichlorobenzene	25.0	26.6	106	79.0-121	
1,3-Dichlorobenzene	25.0	25.6	102	79.0-120	
1,4-Dichlorobenzene	25.0	23.7	94.8	79.0-120	
trans-1,4-Dichloro-2-butene	25.0	18.8	75.2	33.0-144	
Dichlorodifluoromethane	25.0	22.3	89.2	51.0-149	
1,1-Dichloroethane	25.0	24.4	97.6	70.0-126	
1,2-Dichloroethane	25.0	23.8	95.2	70.0-128	
1,1-Dichloroethene	25.0	26.6	106	71.0-124	
cis-1,2-Dichloroethene	25.0	25.5	102	73.0-120	
trans-1,2-Dichloroethene	25.0	25.6	102	73.0-120	
1,2-Dichloropropane	25.0	23.7	94.8	77.0-125	
1,1-Dichloropropene	25.0	25.3	101	74.0-126	
1,3-Dichloropropane	25.0	24.5	98.0	80.0-120	
cis-1,3-Dichloropropene	25.0	25.2	101	80.0-123	
trans-1,3-Dichloropropene	25.0	25.9	104	78.0-124	
2,2-Dichloropropane	25.0	26.8	107	58.0-130	
Di-isopropyl ether	25.0	25.1	100	58.0-138	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3465284-1 10/25/19 19:59

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Ethylbenzene	25.0	25.7	103	79.0-123	
Hexachloro-1,3-butadiene	25.0	25.6	102	54.0-138	
2-Hexanone	125	132	106	67.0-149	
n-Hexane	25.0	23.9	95.6	57.0-133	
Iodomethane	125	145	116	33.0-147	
Isopropylbenzene	25.0	28.4	114	76.0-127	
p-Isopropyltoluene	25.0	24.2	96.8	76.0-125	
2-Butanone (MEK)	125	119	95.2	44.0-160	
Methylene Chloride	25.0	23.2	92.8	67.0-120	
4-Methyl-2-pentanone (MIBK)	125	133	106	68.0-142	
Methyl tert-butyl ether	25.0	26.0	104	68.0-125	
Naphthalene	25.0	25.7	103	54.0-135	
n-Propylbenzene	25.0	22.0	88.0	77.0-124	
Styrene	25.0	28.2	113	73.0-130	
1,1,1,2-Tetrachloroethane	25.0	30.2	121	75.0-125	
1,1,2,2-Tetrachloroethane	25.0	20.9	83.6	65.0-130	
Tetrachloroethene	25.0	29.2	117	72.0-132	
Toluene	25.0	25.2	101	79.0-120	
1,1,2-Trichlorotrifluoroethane	25.0	27.8	111	69.0-132	
1,2,3-Trichlorobenzene	25.0	27.0	108	50.0-138	
1,2,4-Trichlorobenzene	25.0	26.3	105	57.0-137	
1,1,1-Trichloroethane	25.0	28.2	113	73.0-124	
1,1,2-Trichloroethane	25.0	25.8	103	80.0-120	
Trichloroethene	25.0	28.0	112	78.0-124	
Trichlorofluoromethane	25.0	27.9	112	59.0-147	
1,2,3-Trichloropropane	25.0	22.6	90.4	73.0-130	
1,2,3-Trimethylbenzene	25.0	22.7	90.8	77.0-120	
1,2,4-Trimethylbenzene	25.0	22.3	89.2	76.0-121	
1,3,5-Trimethylbenzene	25.0	23.0	92.0	76.0-122	
Vinyl acetate	125	134	107	11.0-160	
Vinyl chloride	25.0	26.1	104	67.0-131	
Xylenes, Total	75.0	80.7	108	79.0-123	
(S) Toluene-d8			112	80.0-120	
(S) 4-Bromofluorobenzene			109	77.0-126	
(S) 1,2-Dichloroethane-d4			107	70.0-130	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3465605-3 10/27/19 09:18

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
cis-1,2-Dichloroethene	U		0.0933	0.500
Vinyl chloride	U		0.118	0.500
(S) Toluene-d8	96.6			80.0-120
(S) 4-Bromofluorobenzene	92.5			77.0-126
(S) 1,2-Dichloroethane-d4	102			70.0-130

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3465605-1 10/27/19 08:19 • (LCSD) R3465605-2 10/27/19 08:38

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
cis-1,2-Dichloroethene	25.0	23.1	22.9	92.4	91.6	73.0-120			0.870	20
Vinyl chloride	25.0	29.8	30.8	119	123	67.0-131			3.30	20
(S) Toluene-d8				97.5	92.4	80.0-120				
(S) 4-Bromofluorobenzene				96.1	91.1	77.0-126				
(S) 1,2-Dichloroethane-d4				101	103	70.0-130				

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3465451-2 10/26/19 12:44

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3465451-2 10/26/19 12:44

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	0.982	U	0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	0.356	U	0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	95.5			80.0-120
(S) 4-Bromofluorobenzene	92.7			77.0-126
(S) 1,2-Dichloroethane-d4	100			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3465451-1 10/26/19 12:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Acetone	125	146	117	19.0-160	
Acrylonitrile	125	168	134	55.0-149	
Benzene	25.0	23.8	95.2	70.0-123	
Bromobenzene	25.0	27.7	111	73.0-121	
Bromodichloromethane	25.0	23.4	93.6	75.0-120	
Bromochloromethane	25.0	26.6	106	76.0-122	
Bromoform	25.0	24.6	98.4	68.0-132	
Bromomethane	25.0	16.1	64.4	10.0-160	
n-Butylbenzene	25.0	29.4	118	73.0-125	
sec-Butylbenzene	25.0	26.3	105	75.0-125	
tert-Butylbenzene	25.0	24.7	98.8	76.0-124	
Carbon disulfide	25.0	22.7	90.8	61.0-128	
Carbon tetrachloride	25.0	21.5	86.0	68.0-126	
Chlorobenzene	25.0	24.1	96.4	80.0-121	
Chlorodibromomethane	25.0	24.8	99.2	77.0-125	
Chloroethane	25.0	28.4	114	47.0-150	
Chloroform	25.0	22.7	90.8	73.0-120	
Chloromethane	25.0	25.8	103	41.0-142	
2-Chlorotoluene	25.0	26.9	108	76.0-123	
4-Chlorotoluene	25.0	26.6	106	75.0-122	
1,2-Dibromo-3-Chloropropane	25.0	25.6	102	58.0-134	
1,2-Dibromoethane	25.0	25.6	102	80.0-122	
Dibromomethane	25.0	26.4	106	80.0-120	
1,2-Dichlorobenzene	25.0	27.8	111	79.0-121	
1,3-Dichlorobenzene	25.0	28.5	114	79.0-120	
1,4-Dichlorobenzene	25.0	27.8	111	79.0-120	
Dichlorodifluoromethane	25.0	22.5	90.0	51.0-149	
1,1-Dichloroethane	25.0	27.6	110	70.0-126	
1,2-Dichloroethane	25.0	28.4	114	70.0-128	
1,1-Dichloroethene	25.0	24.2	96.8	71.0-124	
cis-1,2-Dichloroethene	25.0	24.0	96.0	73.0-120	
trans-1,2-Dichloroethene	25.0	22.5	90.0	73.0-120	
1,2-Dichloropropane	25.0	29.5	118	77.0-125	
1,1-Dichloropropene	25.0	24.6	98.4	74.0-126	
1,3-Dichloropropane	25.0	27.0	108	80.0-120	
cis-1,3-Dichloropropene	25.0	24.9	99.6	80.0-123	
trans-1,3-Dichloropropene	25.0	26.8	107	78.0-124	
trans-1,4-Dichloro-2-butene	25.0	33.7	135	33.0-144	
2,2-Dichloropropane	25.0	23.0	92.0	58.0-130	
Di-isopropyl ether	25.0	29.5	118	58.0-138	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3465451-1 10/26/19 12:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Ethylbenzene	25.0	22.5	90.0	79.0-123	
Hexachloro-1,3-butadiene	25.0	31.4	126	54.0-138	
2-Hexanone	125	172	138	67.0-149	
n-Hexane	25.0	29.8	119	57.0-133	
Iodomethane	125	104	83.2	33.0-147	
Isopropylbenzene	25.0	21.3	85.2	76.0-127	
p-Isopropyltoluene	25.0	27.1	108	76.0-125	
2-Butanone (MEK)	125	139	111	44.0-160	
Methylene Chloride	25.0	22.5	90.0	67.0-120	
4-Methyl-2-pentanone (MIBK)	125	142	114	68.0-142	
Methyl tert-butyl ether	25.0	25.3	101	68.0-125	
Naphthalene	25.0	23.9	95.6	54.0-135	
n-Propylbenzene	25.0	25.2	101	77.0-124	
Styrene	25.0	23.9	95.6	73.0-130	
1,1,1,2-Tetrachloroethane	25.0	23.3	93.2	75.0-125	
1,1,2,2-Tetrachloroethane	25.0	25.9	104	65.0-130	
1,1,2-Trichlorotrifluoroethane	25.0	21.4	85.6	69.0-132	
Tetrachloroethene	25.0	22.9	91.6	72.0-132	
Toluene	25.0	23.7	94.8	79.0-120	
1,2,3-Trichlorobenzene	25.0	27.3	109	50.0-138	
1,2,4-Trichlorobenzene	25.0	30.0	120	57.0-137	
1,1,1-Trichloroethane	25.0	21.4	85.6	73.0-124	
1,1,2-Trichloroethane	25.0	24.5	98.0	80.0-120	
Trichloroethene	25.0	22.2	88.8	78.0-124	
Trichlorofluoromethane	25.0	26.9	108	59.0-147	
1,2,3-Trichloropropane	25.0	26.0	104	73.0-130	
1,2,4-Trimethylbenzene	25.0	25.9	104	76.0-121	
1,2,3-Trimethylbenzene	25.0	26.6	106	77.0-120	
1,3,5-Trimethylbenzene	25.0	25.0	100	76.0-122	
Vinyl acetate	125	164	131	11.0-160	
Vinyl chloride	25.0	32.6	130	67.0-131	
Xylenes, Total	75.0	68.0	90.7	79.0-123	
(S) Toluene-d8			93.8	80.0-120	
(S) 4-Bromofluorobenzene			91.0	77.0-126	
(S) 1,2-Dichloroethane-d4			101	70.0-130	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 GI
- 8 AI
- 9 Sc

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration method criteria.
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
V	The sample concentration is too high to evaluate accurate spike recoveries.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

PES-Seattle
 Billing Information: PES-Seattle
 Pres Chk
 Analysis / Container / Preservative
 Chain of Custody Page 1 of 1
 Pace Analytical®
 National Center for Testing & Innovation

Report to: Bill Haldeman/Brian O'neal
 Email To: on file

Project Description: American Liner
 City/State: Seattle, WA
 Collected:

Phone: on file
 Client Project #: 1413.001.02.501E
 Lab Project #: PESENVSWA-ALP

Collected by (print): L. Zygas/B. Hecht/H. C. ...
 Site/Facility ID #: American Liner
 P.O. #

Collected by (signature): [Signature]
 Rush? (Lab MUST Be Notified)
 ___ Same Day ___ Five Day
 ___ Next Day ___ 5 Day (Rad Only)
 ___ Two Day ___ 10 Day (Rad Only)
 ___ Three Day

Quote #
 Date Results Needed
 No. of Cntrs

Sample ID
 Comp/Grab
 Matrix *
 Depth
 Date
 Time

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	**NO3,SO4,Chloride**48 hour hold	NWTPHGX	VOCs (V8260LLC)	Total Fe Mn 6020	TOC	Alkalinity	EEM (RSK175LL)	Remarks	Sample # (lab only)
MW-917-101519	Grab	GW	90	10/15/19	800	9	X	X	X	X	X	X	X		01
MW109-101519		GW	40		945	9	X	X	X	X	X	X	X		02
MW-305-101519		GW	30		1010	9	X	X	X	X	X	X	X		03
MW126-101519		GW	90		1100	9	X	X	X	X	X	X	X		04
MW-306-101519		GW	50		1140	9	X	X	X	X	X	X	X		05
W-MW-01-101519		GW	75		1220	9	X	X	X	X	X	X	X		06
MW-10 MW110-101519		GW	40		1420	9	X	X	X	X	X	X	X		07
MW-153-101519		GW	125		1425	12	X	X	X	X	X	X	X		08
MW107-101519	↓	GW	40		1400	12	X	X	X	X	X	X	X		09
TB-101519	—	GW	—	10/15/19	—	1	X	X	X	X	X	X	X	Trip Blank	10

* Matrix: SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:
 pH _____ Temp _____
 Flow _____ Other _____

Samples returned via:
 ___ UPS ___ FedEx ___ Courier _____

Tracking # 1803 5774 6584

Sample Receipt Checklist

COC Seal Present/Intact: NP N
 COC Signed/Accurate: N
 Bottles arrive intact: N
 Correct bottles used: N
 Sufficient volume sent: N
 If Applicable
 VOA Zero Headpace: N
 Preservation Correct/Checked: N

SCREEN: <0.5 mR/hr

Relinquished by: (Signature) [Signature]
 Date: 10-15-19
 Time: 16:30
 Received by: (Signature)
 Trip Blank Received: Yes/No
 HCL/MeoH
 TBR

Relinquished by: (Signature)
 Date:
 Time:
 Received by: (Signature)
 Temp: °C
 Bottles Received: 90

Relinquished by: (Signature)
 Date:
 Time:
 Received for lab by: (Signature)
 Date: 10/16/19
 Time: 8:30
 Hold:
 Condition: NCF 10K

October 29, 2019

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

PES Environmental, Inc.- WA

Sample Delivery Group: L1150936
Samples Received: 10/17/2019
Project Number: 1413.001.02.501E
Description: American Linen
Site: AMERICAN LINEN
Report To: Brian O'Neal/Bill Haldeman
1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Entire Report Reviewed By:

Brian Ford

Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



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1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

SAMPLE SUMMARY



MW-155-101619 L1150936-01 GW

				Collected by	Collected date/time	Received date/time
				BH/KB/SM	10/16/19 10:15	10/17/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1366946	1	10/22/19 16:15	10/22/19 16:15	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1364616	1	10/17/19 16:54	10/17/19 16:54	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1365383	1	10/18/19 21:14	10/18/19 21:14	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1366325	1	10/23/19 07:45	10/23/19 14:11	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1365594	1	10/19/19 04:53	10/19/19 04:53	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1365164	1	10/18/19 11:50	10/18/19 11:50	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1369955	1	10/25/19 23:11	10/25/19 23:11	ADM	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

MW-158A-101619 L1150936-02 GW

				Collected by	Collected date/time	Received date/time
				BH/KB/SM	10/16/19 10:30	10/17/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1366946	1	10/22/19 16:21	10/22/19 16:21	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1364616	1	10/17/19 17:58	10/17/19 17:58	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1365383	1	10/18/19 22:18	10/18/19 22:18	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1366325	1	10/23/19 07:45	10/23/19 14:47	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1365594	1	10/19/19 05:17	10/19/19 05:17	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1365164	1	10/18/19 11:52	10/18/19 11:52	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1369955	1	10/25/19 23:31	10/25/19 23:31	ADM	Mt. Juliet, TN

6
Qc

7
Gl

8
Al

9
Sc

MW-142-101619 L1150936-03 GW

				Collected by	Collected date/time	Received date/time
				BH/KB/SM	10/16/19 10:55	10/17/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1366946	1	10/22/19 16:38	10/22/19 16:38	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1364616	1	10/17/19 18:11	10/17/19 18:11	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1365383	1	10/18/19 22:37	10/18/19 22:37	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1366325	1	10/23/19 07:45	10/23/19 14:51	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1365594	1	10/19/19 05:41	10/19/19 05:41	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1365164	1	10/18/19 11:54	10/18/19 11:54	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1369955	1	10/25/19 23:51	10/25/19 23:51	ADM	Mt. Juliet, TN

MW-148-101619 L1150936-04 GW

				Collected by	Collected date/time	Received date/time
				BH/KB/SM	10/16/19 12:05	10/17/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1366946	1	10/22/19 16:45	10/22/19 16:45	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1364616	1	10/17/19 18:23	10/17/19 18:23	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1364616	5	10/17/19 18:36	10/17/19 18:36	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1365383	1	10/19/19 00:24	10/19/19 00:24	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1366325	1	10/23/19 07:45	10/23/19 14:54	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1365594	1	10/19/19 06:05	10/19/19 06:05	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1365164	1	10/18/19 11:57	10/18/19 11:57	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1369955	1	10/26/19 00:12	10/26/19 00:12	ADM	Mt. Juliet, TN

EQ-101619 L1150936-05 GW

				Collected by	Collected date/time	Received date/time
				BH/KB/SM	10/16/19 12:45	10/17/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1366946	1	10/22/19 16:54	10/22/19 16:54	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1364616	1	10/17/19 18:49	10/17/19 18:49	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1365383	1	10/19/19 00:41	10/19/19 00:41	VRP	Mt. Juliet, TN

SAMPLE SUMMARY



EQ-101619 L1150936-05 GW

Collected by
BH/KB/SM Collected date/time
10/16/19 12:45 Received date/time
10/17/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020B	WG1366325	1	10/23/19 07:45	10/23/19 14:58	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1365594	1	10/19/19 06:29	10/19/19 06:29	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1365164	1	10/18/19 12:01	10/18/19 12:01	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1369955	1	10/26/19 00:32	10/26/19 00:32	ADM	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

MW-157-101619 L1150936-06 GW

Collected by
BH/KB/SM Collected date/time
10/16/19 13:38 Received date/time
10/17/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1366946	1	10/22/19 17:03	10/22/19 17:03	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1364616	1	10/17/19 19:02	10/17/19 19:02	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1365383	1	10/19/19 01:45	10/19/19 01:45	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1366325	1	10/23/19 07:45	10/23/19 15:02	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1365594	1	10/19/19 06:53	10/19/19 06:53	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1365164	1	10/18/19 12:04	10/18/19 12:04	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1369955	1	10/26/19 00:52	10/26/19 00:52	ADM	Mt. Juliet, TN

MW-143-101619 L1150936-07 GW

Collected by
BH/KB/SM Collected date/time
10/16/19 14:45 Received date/time
10/17/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1366946	1	10/22/19 17:10	10/22/19 17:10	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1364616	1	10/17/19 19:14	10/17/19 19:14	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1365383	1	10/19/19 02:08	10/19/19 02:08	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1366325	1	10/23/19 07:45	10/23/19 15:05	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1365594	1	10/19/19 07:17	10/19/19 07:17	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1365165	1	10/18/19 13:25	10/18/19 13:25	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1369955	1	10/26/19 01:13	10/26/19 01:13	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1370146	200	10/27/19 15:49	10/27/19 15:49	ACG	Mt. Juliet, TN

TRIP-101619 L1150936-08 GW

Collected by
BH/KB/SM Collected date/time
10/16/19 15:40 Received date/time
10/17/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1365594	1	10/19/19 04:05	10/19/19 04:05	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1370189	1	10/26/19 15:08	10/26/19 15:08	ACG	Mt. Juliet, TN



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

Sample Delivery Group (SDG) Narrative

The following analysis were performed from an unpreserved, insufficiently or inadequately preserved sample.

<u>Lab Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L1150936-01	MW-155-101619	9060A

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	267000		2710	20000	1	10/22/2019 16:15	WG1366946

Sample Narrative:

L1150936-01 WG1366946: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	16100		51.9	1000	1	10/17/2019 16:54	WG1364616
Nitrate	4120		22.7	100	1	10/17/2019 16:54	WG1364616
Sulfate	94300		77.4	5000	1	10/17/2019 16:54	WG1364616

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3660	<u>B</u>	102	1000	1	10/18/2019 21:14	WG1365383

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	119		15.0	100	1	10/23/2019 14:11	WG1366325
Manganese	71.6		0.250	5.00	1	10/23/2019 14:11	WG1366325

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/19/2019 04:53	WG1365594
(S) a,a,a-Trifluorotoluene(FID)	108			78.0-120		10/19/2019 04:53	WG1365594

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	36.1		0.287	0.678	1	10/18/2019 11:50	WG1365164
Ethane	17.5		0.296	1.29	1	10/18/2019 11:50	WG1365164
Ethene	U		0.422	1.27	1	10/18/2019 11:50	WG1365164

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	1.06	<u>J JO</u>	1.05	25.0	1	10/25/2019 23:11	WG1369955
Acrylonitrile	U		0.873	5.00	1	10/25/2019 23:11	WG1369955
Benzene	U		0.0896	0.500	1	10/25/2019 23:11	WG1369955
Bromobenzene	U	<u>JO</u>	0.133	0.500	1	10/25/2019 23:11	WG1369955
Bromodichloromethane	U		0.0800	0.500	1	10/25/2019 23:11	WG1369955
Bromochloromethane	U		0.145	0.500	1	10/25/2019 23:11	WG1369955
Bromoform	U		0.186	0.500	1	10/25/2019 23:11	WG1369955
Bromomethane	U		0.157	2.50	1	10/25/2019 23:11	WG1369955
n-Butylbenzene	U		0.143	0.500	1	10/25/2019 23:11	WG1369955
sec-Butylbenzene	U		0.134	0.500	1	10/25/2019 23:11	WG1369955
tert-Butylbenzene	U		0.183	0.500	1	10/25/2019 23:11	WG1369955
Carbon disulfide	U		0.101	0.500	1	10/25/2019 23:11	WG1369955
Carbon tetrachloride	U		0.159	0.500	1	10/25/2019 23:11	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/25/2019 23:11	WG1369955
Chlorodibromomethane	U		0.128	0.500	1	10/25/2019 23:11	WG1369955
Chloroethane	U		0.141	2.50	1	10/25/2019 23:11	WG1369955
Chloroform	U		0.0860	0.500	1	10/25/2019 23:11	WG1369955
Chloromethane	U	JO	0.153	1.25	1	10/25/2019 23:11	WG1369955
2-Chlorotoluene	U		0.111	0.500	1	10/25/2019 23:11	WG1369955
4-Chlorotoluene	U		0.0972	0.500	1	10/25/2019 23:11	WG1369955
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/25/2019 23:11	WG1369955
1,2-Dibromoethane	U		0.193	0.500	1	10/25/2019 23:11	WG1369955
Dibromomethane	U		0.117	0.500	1	10/25/2019 23:11	WG1369955
1,2-Dichlorobenzene	U		0.101	0.500	1	10/25/2019 23:11	WG1369955
1,3-Dichlorobenzene	U		0.130	0.500	1	10/25/2019 23:11	WG1369955
1,4-Dichlorobenzene	U		0.121	0.500	1	10/25/2019 23:11	WG1369955
Dichlorodifluoromethane	U		0.127	2.50	1	10/25/2019 23:11	WG1369955
1,1-Dichloroethane	U		0.114	0.500	1	10/25/2019 23:11	WG1369955
1,2-Dichloroethane	U		0.108	0.500	1	10/25/2019 23:11	WG1369955
1,1-Dichloroethene	U		0.188	0.500	1	10/25/2019 23:11	WG1369955
cis-1,2-Dichloroethene	36.2		0.0933	0.500	1	10/25/2019 23:11	WG1369955
trans-1,2-Dichloroethene	0.160	J	0.152	0.500	1	10/25/2019 23:11	WG1369955
1,2-Dichloropropane	U		0.190	0.500	1	10/25/2019 23:11	WG1369955
1,1-Dichloropropene	U		0.128	0.500	1	10/25/2019 23:11	WG1369955
1,3-Dichloropropane	U		0.147	1.00	1	10/25/2019 23:11	WG1369955
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/25/2019 23:11	WG1369955
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/25/2019 23:11	WG1369955
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/25/2019 23:11	WG1369955
2,2-Dichloropropane	U		0.0929	0.500	1	10/25/2019 23:11	WG1369955
Di-isopropyl ether	U		0.0924	0.500	1	10/25/2019 23:11	WG1369955
Ethylbenzene	U		0.158	0.500	1	10/25/2019 23:11	WG1369955
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/25/2019 23:11	WG1369955
2-Hexanone	U		0.757	5.00	1	10/25/2019 23:11	WG1369955
n-Hexane	U		0.305	5.00	1	10/25/2019 23:11	WG1369955
Iodomethane	U		0.377	10.0	1	10/25/2019 23:11	WG1369955
Isopropylbenzene	U		0.126	0.500	1	10/25/2019 23:11	WG1369955
p-Isopropyltoluene	U		0.138	0.500	1	10/25/2019 23:11	WG1369955
2-Butanone (MEK)	U		1.28	5.00	1	10/25/2019 23:11	WG1369955
Methylene Chloride	U		1.07	2.50	1	10/25/2019 23:11	WG1369955
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/25/2019 23:11	WG1369955
Methyl tert-butyl ether	U		0.102	0.500	1	10/25/2019 23:11	WG1369955
Naphthalene	U		0.174	2.50	1	10/25/2019 23:11	WG1369955
n-Propylbenzene	U		0.162	0.500	1	10/25/2019 23:11	WG1369955
Styrene	U		0.117	0.500	1	10/25/2019 23:11	WG1369955
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/25/2019 23:11	WG1369955
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/25/2019 23:11	WG1369955
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/25/2019 23:11	WG1369955
Tetrachloroethene	121		0.199	0.500	1	10/25/2019 23:11	WG1369955
Toluene	U		0.412	0.500	1	10/25/2019 23:11	WG1369955
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/25/2019 23:11	WG1369955
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/25/2019 23:11	WG1369955
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/25/2019 23:11	WG1369955
1,1,2-Trichloroethane	U		0.186	0.500	1	10/25/2019 23:11	WG1369955
Trichloroethene	27.6		0.153	0.500	1	10/25/2019 23:11	WG1369955
Trichlorofluoromethane	U		0.130	2.50	1	10/25/2019 23:11	WG1369955
1,2,3-Trichloropropane	U		0.247	2.50	1	10/25/2019 23:11	WG1369955
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/25/2019 23:11	WG1369955
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/25/2019 23:11	WG1369955
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/25/2019 23:11	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/16/19 10:15

L1150936

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U		0.645	5.00	1	10/25/2019 23:11	WG1369955
Vinyl chloride	U		0.118	0.500	1	10/25/2019 23:11	WG1369955
Xylenes, Total	U		0.316	1.50	1	10/25/2019 23:11	WG1369955
<i>(S) Toluene-d8</i>	110			80.0-120		10/25/2019 23:11	WG1369955
<i>(S) 4-Bromofluorobenzene</i>	113			77.0-126		10/25/2019 23:11	WG1369955
<i>(S) 1,2-Dichloroethane-d4</i>	104			70.0-130		10/25/2019 23:11	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	327000		2710	20000	1	10/22/2019 16:21	WG1366946

Sample Narrative:

L1150936-02 WG1366946: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	24500		51.9	1000	1	10/17/2019 17:58	WG1364616
Nitrate	33.0	J	22.7	100	1	10/17/2019 17:58	WG1364616
Sulfate	20400		77.4	5000	1	10/17/2019 17:58	WG1364616

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	4460	B	102	1000	1	10/18/2019 22:18	WG1365383

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	5460		15.0	100	1	10/23/2019 14:47	WG1366325
Manganese	350		0.250	5.00	1	10/23/2019 14:47	WG1366325

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/19/2019 05:17	WG1365594
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		10/19/2019 05:17	WG1365594

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	115		0.287	0.678	1	10/18/2019 11:52	WG1365164
Ethane	20.1		0.296	1.29	1	10/18/2019 11:52	WG1365164
Ethene	7.24		0.422	1.27	1	10/18/2019 11:52	WG1365164

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U	JO	1.05	25.0	1	10/25/2019 23:31	WG1369955
Acrylonitrile	U		0.873	5.00	1	10/25/2019 23:31	WG1369955
Benzene	U		0.0896	0.500	1	10/25/2019 23:31	WG1369955
Bromobenzene	U	JO	0.133	0.500	1	10/25/2019 23:31	WG1369955
Bromodichloromethane	U		0.0800	0.500	1	10/25/2019 23:31	WG1369955
Bromochloromethane	U		0.145	0.500	1	10/25/2019 23:31	WG1369955
Bromoform	U		0.186	0.500	1	10/25/2019 23:31	WG1369955
Bromomethane	U		0.157	2.50	1	10/25/2019 23:31	WG1369955
n-Butylbenzene	U		0.143	0.500	1	10/25/2019 23:31	WG1369955
sec-Butylbenzene	U		0.134	0.500	1	10/25/2019 23:31	WG1369955
tert-Butylbenzene	U		0.183	0.500	1	10/25/2019 23:31	WG1369955
Carbon disulfide	U		0.101	0.500	1	10/25/2019 23:31	WG1369955
Carbon tetrachloride	U		0.159	0.500	1	10/25/2019 23:31	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/25/2019 23:31	WG1369955
Chlorodibromomethane	U		0.128	0.500	1	10/25/2019 23:31	WG1369955
Chloroethane	U		0.141	2.50	1	10/25/2019 23:31	WG1369955
Chloroform	U		0.0860	0.500	1	10/25/2019 23:31	WG1369955
Chloromethane	U	JO	0.153	1.25	1	10/25/2019 23:31	WG1369955
2-Chlorotoluene	U		0.111	0.500	1	10/25/2019 23:31	WG1369955
4-Chlorotoluene	U		0.0972	0.500	1	10/25/2019 23:31	WG1369955
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/25/2019 23:31	WG1369955
1,2-Dibromoethane	U		0.193	0.500	1	10/25/2019 23:31	WG1369955
Dibromomethane	U		0.117	0.500	1	10/25/2019 23:31	WG1369955
1,2-Dichlorobenzene	U		0.101	0.500	1	10/25/2019 23:31	WG1369955
1,3-Dichlorobenzene	U		0.130	0.500	1	10/25/2019 23:31	WG1369955
1,4-Dichlorobenzene	U		0.121	0.500	1	10/25/2019 23:31	WG1369955
Dichlorodifluoromethane	U		0.127	2.50	1	10/25/2019 23:31	WG1369955
1,1-Dichloroethane	U		0.114	0.500	1	10/25/2019 23:31	WG1369955
1,2-Dichloroethane	U		0.108	0.500	1	10/25/2019 23:31	WG1369955
1,1-Dichloroethene	U		0.188	0.500	1	10/25/2019 23:31	WG1369955
cis-1,2-Dichloroethene	0.848		0.0933	0.500	1	10/25/2019 23:31	WG1369955
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/25/2019 23:31	WG1369955
1,2-Dichloropropane	U		0.190	0.500	1	10/25/2019 23:31	WG1369955
1,1-Dichloropropene	U		0.128	0.500	1	10/25/2019 23:31	WG1369955
1,3-Dichloropropane	U		0.147	1.00	1	10/25/2019 23:31	WG1369955
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/25/2019 23:31	WG1369955
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/25/2019 23:31	WG1369955
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/25/2019 23:31	WG1369955
2,2-Dichloropropane	U		0.0929	0.500	1	10/25/2019 23:31	WG1369955
Di-isopropyl ether	U		0.0924	0.500	1	10/25/2019 23:31	WG1369955
Ethylbenzene	U		0.158	0.500	1	10/25/2019 23:31	WG1369955
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/25/2019 23:31	WG1369955
2-Hexanone	U		0.757	5.00	1	10/25/2019 23:31	WG1369955
n-Hexane	U		0.305	5.00	1	10/25/2019 23:31	WG1369955
Iodomethane	U		0.377	10.0	1	10/25/2019 23:31	WG1369955
Isopropylbenzene	U		0.126	0.500	1	10/25/2019 23:31	WG1369955
p-Isopropyltoluene	U		0.138	0.500	1	10/25/2019 23:31	WG1369955
2-Butanone (MEK)	U		1.28	5.00	1	10/25/2019 23:31	WG1369955
Methylene Chloride	U		1.07	2.50	1	10/25/2019 23:31	WG1369955
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/25/2019 23:31	WG1369955
Methyl tert-butyl ether	U		0.102	0.500	1	10/25/2019 23:31	WG1369955
Naphthalene	U		0.174	2.50	1	10/25/2019 23:31	WG1369955
n-Propylbenzene	U		0.162	0.500	1	10/25/2019 23:31	WG1369955
Styrene	U		0.117	0.500	1	10/25/2019 23:31	WG1369955
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/25/2019 23:31	WG1369955
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/25/2019 23:31	WG1369955
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/25/2019 23:31	WG1369955
Tetrachloroethene	U		0.199	0.500	1	10/25/2019 23:31	WG1369955
Toluene	U		0.412	0.500	1	10/25/2019 23:31	WG1369955
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/25/2019 23:31	WG1369955
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/25/2019 23:31	WG1369955
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/25/2019 23:31	WG1369955
1,1,2-Trichloroethane	U		0.186	0.500	1	10/25/2019 23:31	WG1369955
Trichloroethene	0.318	J	0.153	0.500	1	10/25/2019 23:31	WG1369955
Trichlorofluoromethane	U		0.130	2.50	1	10/25/2019 23:31	WG1369955
1,2,3-Trichloropropane	U		0.247	2.50	1	10/25/2019 23:31	WG1369955
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/25/2019 23:31	WG1369955
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/25/2019 23:31	WG1369955
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/25/2019 23:31	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/25/2019 23:31	WG1369955
Vinyl chloride	2.18		0.118	0.500	1	10/25/2019 23:31	WG1369955
Xylenes, Total	U		0.316	1.50	1	10/25/2019 23:31	WG1369955
<i>(S) Toluene-d8</i>	110			80.0-120		10/25/2019 23:31	WG1369955
<i>(S) 4-Bromofluorobenzene</i>	111			77.0-126		10/25/2019 23:31	WG1369955
<i>(S) 1,2-Dichloroethane-d4</i>	103			70.0-130		10/25/2019 23:31	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	812000		2710	20000	1	10/22/2019 16:38	WG1366946

Sample Narrative:

L1150936-03 WG1366946: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	14900		51.9	1000	1	10/17/2019 18:11	WG1364616
Nitrate	U		22.7	100	1	10/17/2019 18:11	WG1364616
Sulfate	15900		77.4	5000	1	10/17/2019 18:11	WG1364616

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	4760	<u>B</u>	102	1000	1	10/18/2019 22:37	WG1365383

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	5400		15.0	100	1	10/23/2019 14:51	WG1366325
Manganese	3440		0.250	5.00	1	10/23/2019 14:51	WG1366325

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/19/2019 05:41	WG1365594
^(S) a,a,a-Trifluorotoluene(FID)	108			78.0-120		10/19/2019 05:41	WG1365594

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	766		0.287	0.678	1	10/18/2019 11:54	WG1365164
Ethane	47.8		0.296	1.29	1	10/18/2019 11:54	WG1365164
Ethene	U		0.422	1.27	1	10/18/2019 11:54	WG1365164

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	1.46	<u>J JO</u>	1.05	25.0	1	10/25/2019 23:51	WG1369955
Acrylonitrile	U		0.873	5.00	1	10/25/2019 23:51	WG1369955
Benzene	0.380	<u>J</u>	0.0896	0.500	1	10/25/2019 23:51	WG1369955
Bromobenzene	U	<u>JO</u>	0.133	0.500	1	10/25/2019 23:51	WG1369955
Bromodichloromethane	U		0.0800	0.500	1	10/25/2019 23:51	WG1369955
Bromochloromethane	U		0.145	0.500	1	10/25/2019 23:51	WG1369955
Bromoform	U		0.186	0.500	1	10/25/2019 23:51	WG1369955
Bromomethane	U		0.157	2.50	1	10/25/2019 23:51	WG1369955
n-Butylbenzene	U		0.143	0.500	1	10/25/2019 23:51	WG1369955
sec-Butylbenzene	U		0.134	0.500	1	10/25/2019 23:51	WG1369955
tert-Butylbenzene	U		0.183	0.500	1	10/25/2019 23:51	WG1369955
Carbon disulfide	U		0.101	0.500	1	10/25/2019 23:51	WG1369955
Carbon tetrachloride	U		0.159	0.500	1	10/25/2019 23:51	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/25/2019 23:51	WG1369955
Chlorodibromomethane	U		0.128	0.500	1	10/25/2019 23:51	WG1369955
Chloroethane	U		0.141	2.50	1	10/25/2019 23:51	WG1369955
Chloroform	U		0.0860	0.500	1	10/25/2019 23:51	WG1369955
Chloromethane	U	JO	0.153	1.25	1	10/25/2019 23:51	WG1369955
2-Chlorotoluene	U		0.111	0.500	1	10/25/2019 23:51	WG1369955
4-Chlorotoluene	U		0.0972	0.500	1	10/25/2019 23:51	WG1369955
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/25/2019 23:51	WG1369955
1,2-Dibromoethane	U		0.193	0.500	1	10/25/2019 23:51	WG1369955
Dibromomethane	U		0.117	0.500	1	10/25/2019 23:51	WG1369955
1,2-Dichlorobenzene	U		0.101	0.500	1	10/25/2019 23:51	WG1369955
1,3-Dichlorobenzene	U		0.130	0.500	1	10/25/2019 23:51	WG1369955
1,4-Dichlorobenzene	U		0.121	0.500	1	10/25/2019 23:51	WG1369955
Dichlorodifluoromethane	U		0.127	2.50	1	10/25/2019 23:51	WG1369955
1,1-Dichloroethane	U		0.114	0.500	1	10/25/2019 23:51	WG1369955
1,2-Dichloroethane	U		0.108	0.500	1	10/25/2019 23:51	WG1369955
1,1-Dichloroethene	U		0.188	0.500	1	10/25/2019 23:51	WG1369955
cis-1,2-Dichloroethene	50.4		0.0933	0.500	1	10/25/2019 23:51	WG1369955
trans-1,2-Dichloroethene	0.282	J	0.152	0.500	1	10/25/2019 23:51	WG1369955
1,2-Dichloropropane	U		0.190	0.500	1	10/25/2019 23:51	WG1369955
1,1-Dichloropropene	U		0.128	0.500	1	10/25/2019 23:51	WG1369955
1,3-Dichloropropane	U		0.147	1.00	1	10/25/2019 23:51	WG1369955
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/25/2019 23:51	WG1369955
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/25/2019 23:51	WG1369955
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/25/2019 23:51	WG1369955
2,2-Dichloropropane	U		0.0929	0.500	1	10/25/2019 23:51	WG1369955
Di-isopropyl ether	U		0.0924	0.500	1	10/25/2019 23:51	WG1369955
Ethylbenzene	U		0.158	0.500	1	10/25/2019 23:51	WG1369955
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/25/2019 23:51	WG1369955
2-Hexanone	U		0.757	5.00	1	10/25/2019 23:51	WG1369955
n-Hexane	U		0.305	5.00	1	10/25/2019 23:51	WG1369955
Iodomethane	U		0.377	10.0	1	10/25/2019 23:51	WG1369955
Isopropylbenzene	U		0.126	0.500	1	10/25/2019 23:51	WG1369955
p-Isopropyltoluene	U		0.138	0.500	1	10/25/2019 23:51	WG1369955
2-Butanone (MEK)	U		1.28	5.00	1	10/25/2019 23:51	WG1369955
Methylene Chloride	U		1.07	2.50	1	10/25/2019 23:51	WG1369955
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/25/2019 23:51	WG1369955
Methyl tert-butyl ether	U		0.102	0.500	1	10/25/2019 23:51	WG1369955
Naphthalene	U		0.174	2.50	1	10/25/2019 23:51	WG1369955
n-Propylbenzene	U		0.162	0.500	1	10/25/2019 23:51	WG1369955
Styrene	U		0.117	0.500	1	10/25/2019 23:51	WG1369955
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/25/2019 23:51	WG1369955
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/25/2019 23:51	WG1369955
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/25/2019 23:51	WG1369955
Tetrachloroethene	U		0.199	0.500	1	10/25/2019 23:51	WG1369955
Toluene	U		0.412	0.500	1	10/25/2019 23:51	WG1369955
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/25/2019 23:51	WG1369955
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/25/2019 23:51	WG1369955
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/25/2019 23:51	WG1369955
1,1,2-Trichloroethane	U		0.186	0.500	1	10/25/2019 23:51	WG1369955
Trichloroethene	0.360	J	0.153	0.500	1	10/25/2019 23:51	WG1369955
Trichlorofluoromethane	U		0.130	2.50	1	10/25/2019 23:51	WG1369955
1,2,3-Trichloropropane	U		0.247	2.50	1	10/25/2019 23:51	WG1369955
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/25/2019 23:51	WG1369955
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/25/2019 23:51	WG1369955
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/25/2019 23:51	WG1369955

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/25/2019 23:51	WG1369955
Vinyl chloride	11.3		0.118	0.500	1	10/25/2019 23:51	WG1369955
Xylenes, Total	U		0.316	1.50	1	10/25/2019 23:51	WG1369955
<i>(S) Toluene-d8</i>	112			80.0-120		10/25/2019 23:51	WG1369955
<i>(S) 4-Bromofluorobenzene</i>	112			77.0-126		10/25/2019 23:51	WG1369955
<i>(S) 1,2-Dichloroethane-d4</i>	102			70.0-130		10/25/2019 23:51	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	163000		2710	20000	1	10/22/2019 16:45	WG1366946

Sample Narrative:

L1150936-04 WG1366946: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	18000		51.9	1000	1	10/17/2019 18:23	WG1364616
Nitrate	32.6	J	22.7	100	1	10/17/2019 18:23	WG1364616
Sulfate	198000		387	25000	5	10/17/2019 18:36	WG1364616

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	4480	B	102	1000	1	10/19/2019 00:24	WG1365383

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	2240		15.0	100	1	10/23/2019 14:54	WG1366325
Manganese	498		0.250	5.00	1	10/23/2019 14:54	WG1366325

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/19/2019 06:05	WG1365594
(S) a,a,a-Trifluorotoluene(FID)	108			78.0-120		10/19/2019 06:05	WG1365594

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	2050		0.287	0.678	1	10/18/2019 11:57	WG1365164
Ethane	6.03		0.296	1.29	1	10/18/2019 11:57	WG1365164
Ethene	U		0.422	1.27	1	10/18/2019 11:57	WG1365164

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U	JO	1.05	25.0	1	10/26/2019 00:12	WG1369955
Acrylonitrile	U		0.873	5.00	1	10/26/2019 00:12	WG1369955
Benzene	U		0.0896	0.500	1	10/26/2019 00:12	WG1369955
Bromobenzene	U	JO	0.133	0.500	1	10/26/2019 00:12	WG1369955
Bromodichloromethane	U		0.0800	0.500	1	10/26/2019 00:12	WG1369955
Bromochloromethane	U		0.145	0.500	1	10/26/2019 00:12	WG1369955
Bromoform	U		0.186	0.500	1	10/26/2019 00:12	WG1369955
Bromomethane	U		0.157	2.50	1	10/26/2019 00:12	WG1369955
n-Butylbenzene	U		0.143	0.500	1	10/26/2019 00:12	WG1369955
sec-Butylbenzene	U		0.134	0.500	1	10/26/2019 00:12	WG1369955
tert-Butylbenzene	U		0.183	0.500	1	10/26/2019 00:12	WG1369955
Carbon disulfide	U		0.101	0.500	1	10/26/2019 00:12	WG1369955
Carbon tetrachloride	U		0.159	0.500	1	10/26/2019 00:12	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/16/19 12:05

L1150936

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/26/2019 00:12	WG1369955
Chlorodibromomethane	U		0.128	0.500	1	10/26/2019 00:12	WG1369955
Chloroethane	U		0.141	2.50	1	10/26/2019 00:12	WG1369955
Chloroform	U		0.0860	0.500	1	10/26/2019 00:12	WG1369955
Chloromethane	U	JO	0.153	1.25	1	10/26/2019 00:12	WG1369955
2-Chlorotoluene	U		0.111	0.500	1	10/26/2019 00:12	WG1369955
4-Chlorotoluene	U		0.0972	0.500	1	10/26/2019 00:12	WG1369955
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/26/2019 00:12	WG1369955
1,2-Dibromoethane	U		0.193	0.500	1	10/26/2019 00:12	WG1369955
Dibromomethane	U		0.117	0.500	1	10/26/2019 00:12	WG1369955
1,2-Dichlorobenzene	U		0.101	0.500	1	10/26/2019 00:12	WG1369955
1,3-Dichlorobenzene	U		0.130	0.500	1	10/26/2019 00:12	WG1369955
1,4-Dichlorobenzene	U		0.121	0.500	1	10/26/2019 00:12	WG1369955
Dichlorodifluoromethane	U		0.127	2.50	1	10/26/2019 00:12	WG1369955
1,1-Dichloroethane	U		0.114	0.500	1	10/26/2019 00:12	WG1369955
1,2-Dichloroethane	U		0.108	0.500	1	10/26/2019 00:12	WG1369955
1,1-Dichloroethene	U		0.188	0.500	1	10/26/2019 00:12	WG1369955
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/26/2019 00:12	WG1369955
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/26/2019 00:12	WG1369955
1,2-Dichloropropane	U		0.190	0.500	1	10/26/2019 00:12	WG1369955
1,1-Dichloropropene	U		0.128	0.500	1	10/26/2019 00:12	WG1369955
1,3-Dichloropropane	U		0.147	1.00	1	10/26/2019 00:12	WG1369955
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/26/2019 00:12	WG1369955
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/26/2019 00:12	WG1369955
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/26/2019 00:12	WG1369955
2,2-Dichloropropane	U		0.0929	0.500	1	10/26/2019 00:12	WG1369955
Di-isopropyl ether	U		0.0924	0.500	1	10/26/2019 00:12	WG1369955
Ethylbenzene	U		0.158	0.500	1	10/26/2019 00:12	WG1369955
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/26/2019 00:12	WG1369955
2-Hexanone	U		0.757	5.00	1	10/26/2019 00:12	WG1369955
n-Hexane	U		0.305	5.00	1	10/26/2019 00:12	WG1369955
Iodomethane	U		0.377	10.0	1	10/26/2019 00:12	WG1369955
Isopropylbenzene	U		0.126	0.500	1	10/26/2019 00:12	WG1369955
p-Isopropyltoluene	U		0.138	0.500	1	10/26/2019 00:12	WG1369955
2-Butanone (MEK)	U		1.28	5.00	1	10/26/2019 00:12	WG1369955
Methylene Chloride	U		1.07	2.50	1	10/26/2019 00:12	WG1369955
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/26/2019 00:12	WG1369955
Methyl tert-butyl ether	U		0.102	0.500	1	10/26/2019 00:12	WG1369955
Naphthalene	U		0.174	2.50	1	10/26/2019 00:12	WG1369955
n-Propylbenzene	U		0.162	0.500	1	10/26/2019 00:12	WG1369955
Styrene	U		0.117	0.500	1	10/26/2019 00:12	WG1369955
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/26/2019 00:12	WG1369955
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/26/2019 00:12	WG1369955
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/26/2019 00:12	WG1369955
Tetrachloroethene	U		0.199	0.500	1	10/26/2019 00:12	WG1369955
Toluene	U		0.412	0.500	1	10/26/2019 00:12	WG1369955
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/26/2019 00:12	WG1369955
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/26/2019 00:12	WG1369955
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/26/2019 00:12	WG1369955
1,1,2-Trichloroethane	U		0.186	0.500	1	10/26/2019 00:12	WG1369955
Trichloroethene	U		0.153	0.500	1	10/26/2019 00:12	WG1369955
Trichlorofluoromethane	U		0.130	2.50	1	10/26/2019 00:12	WG1369955
1,2,3-Trichloropropane	U		0.247	2.50	1	10/26/2019 00:12	WG1369955
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/26/2019 00:12	WG1369955
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/26/2019 00:12	WG1369955
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/26/2019 00:12	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/26/2019 00:12	WG1369955
Vinyl chloride	0.463	↓	0.118	0.500	1	10/26/2019 00:12	WG1369955
Xylenes, Total	U		0.316	1.50	1	10/26/2019 00:12	WG1369955
<i>(S) Toluene-d8</i>	110			80.0-120		10/26/2019 00:12	WG1369955
<i>(S) 4-Bromofluorobenzene</i>	110			77.0-126		10/26/2019 00:12	WG1369955
<i>(S) 1,2-Dichloroethane-d4</i>	104			70.0-130		10/26/2019 00:12	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	11100	<u>B</u> <u>J</u>	2710	20000	1	10/22/2019 16:54	WG1366946

Sample Narrative:

L1150936-05 WG1366946: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	405	<u>B</u> <u>J</u>	51.9	1000	1	10/17/2019 18:49	WG1364616
Nitrate	U		22.7	100	1	10/17/2019 18:49	WG1364616
Sulfate	129	<u>B</u> <u>J</u>	77.4	5000	1	10/17/2019 18:49	WG1364616

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	418	<u>B</u> <u>J</u>	102	1000	1	10/19/2019 00:41	WG1365383

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	17.9	<u>J</u>	15.0	100	1	10/23/2019 14:58	WG1366325
Manganese	0.655	<u>J</u>	0.250	5.00	1	10/23/2019 14:58	WG1366325

Volatile Organic Compounds (GC) by Method NWTPHGX

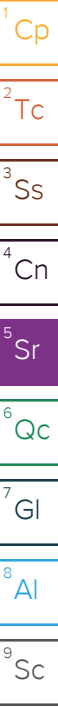
Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/19/2019 06:29	WG1365594
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		10/19/2019 06:29	WG1365594

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	U		0.287	0.678	1	10/18/2019 12:01	WG1365164
Ethane	U		0.296	1.29	1	10/18/2019 12:01	WG1365164
Ethene	U		0.422	1.27	1	10/18/2019 12:01	WG1365164

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	1.84	<u>J</u> <u>JO</u>	1.05	25.0	1	10/26/2019 00:32	WG1369955
Acrylonitrile	U		0.873	5.00	1	10/26/2019 00:32	WG1369955
Benzene	U		0.0896	0.500	1	10/26/2019 00:32	WG1369955
Bromobenzene	U	<u>JO</u>	0.133	0.500	1	10/26/2019 00:32	WG1369955
Bromodichloromethane	U		0.0800	0.500	1	10/26/2019 00:32	WG1369955
Bromochloromethane	U		0.145	0.500	1	10/26/2019 00:32	WG1369955
Bromoform	U		0.186	0.500	1	10/26/2019 00:32	WG1369955
Bromomethane	U		0.157	2.50	1	10/26/2019 00:32	WG1369955
n-Butylbenzene	U		0.143	0.500	1	10/26/2019 00:32	WG1369955
sec-Butylbenzene	U		0.134	0.500	1	10/26/2019 00:32	WG1369955
tert-Butylbenzene	U		0.183	0.500	1	10/26/2019 00:32	WG1369955
Carbon disulfide	U		0.101	0.500	1	10/26/2019 00:32	WG1369955
Carbon tetrachloride	U		0.159	0.500	1	10/26/2019 00:32	WG1369955





Collected date/time: 10/16/19 12:45

L1150936

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/26/2019 00:32	WG1369955
Chlorodibromomethane	U		0.128	0.500	1	10/26/2019 00:32	WG1369955
Chloroethane	U		0.141	2.50	1	10/26/2019 00:32	WG1369955
Chloroform	0.385	<u>J</u>	0.0860	0.500	1	10/26/2019 00:32	WG1369955
Chloromethane	U	<u>JO</u>	0.153	1.25	1	10/26/2019 00:32	WG1369955
2-Chlorotoluene	U		0.111	0.500	1	10/26/2019 00:32	WG1369955
4-Chlorotoluene	U		0.0972	0.500	1	10/26/2019 00:32	WG1369955
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/26/2019 00:32	WG1369955
1,2-Dibromoethane	U		0.193	0.500	1	10/26/2019 00:32	WG1369955
Dibromomethane	U		0.117	0.500	1	10/26/2019 00:32	WG1369955
1,2-Dichlorobenzene	U		0.101	0.500	1	10/26/2019 00:32	WG1369955
1,3-Dichlorobenzene	U		0.130	0.500	1	10/26/2019 00:32	WG1369955
1,4-Dichlorobenzene	U		0.121	0.500	1	10/26/2019 00:32	WG1369955
Dichlorodifluoromethane	U		0.127	2.50	1	10/26/2019 00:32	WG1369955
1,1-Dichloroethane	U		0.114	0.500	1	10/26/2019 00:32	WG1369955
1,2-Dichloroethane	U		0.108	0.500	1	10/26/2019 00:32	WG1369955
1,1-Dichloroethene	U		0.188	0.500	1	10/26/2019 00:32	WG1369955
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/26/2019 00:32	WG1369955
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/26/2019 00:32	WG1369955
1,2-Dichloropropane	U		0.190	0.500	1	10/26/2019 00:32	WG1369955
1,1-Dichloropropene	U		0.128	0.500	1	10/26/2019 00:32	WG1369955
1,3-Dichloropropane	U		0.147	1.00	1	10/26/2019 00:32	WG1369955
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/26/2019 00:32	WG1369955
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/26/2019 00:32	WG1369955
trans-1,4-Dichloro-2-butene	U	<u>JO</u>	0.257	5.00	1	10/26/2019 00:32	WG1369955
2,2-Dichloropropane	U		0.0929	0.500	1	10/26/2019 00:32	WG1369955
Di-isopropyl ether	U		0.0924	0.500	1	10/26/2019 00:32	WG1369955
Ethylbenzene	U		0.158	0.500	1	10/26/2019 00:32	WG1369955
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/26/2019 00:32	WG1369955
2-Hexanone	U		0.757	5.00	1	10/26/2019 00:32	WG1369955
n-Hexane	U		0.305	5.00	1	10/26/2019 00:32	WG1369955
Iodomethane	U		0.377	10.0	1	10/26/2019 00:32	WG1369955
Isopropylbenzene	U		0.126	0.500	1	10/26/2019 00:32	WG1369955
p-Isopropyltoluene	U		0.138	0.500	1	10/26/2019 00:32	WG1369955
2-Butanone (MEK)	U		1.28	5.00	1	10/26/2019 00:32	WG1369955
Methylene Chloride	U		1.07	2.50	1	10/26/2019 00:32	WG1369955
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/26/2019 00:32	WG1369955
Methyl tert-butyl ether	U		0.102	0.500	1	10/26/2019 00:32	WG1369955
Naphthalene	U		0.174	2.50	1	10/26/2019 00:32	WG1369955
n-Propylbenzene	U		0.162	0.500	1	10/26/2019 00:32	WG1369955
Styrene	U		0.117	0.500	1	10/26/2019 00:32	WG1369955
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/26/2019 00:32	WG1369955
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/26/2019 00:32	WG1369955
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/26/2019 00:32	WG1369955
Tetrachloroethene	U		0.199	0.500	1	10/26/2019 00:32	WG1369955
Toluene	U		0.412	0.500	1	10/26/2019 00:32	WG1369955
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/26/2019 00:32	WG1369955
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/26/2019 00:32	WG1369955
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/26/2019 00:32	WG1369955
1,1,2-Trichloroethane	U		0.186	0.500	1	10/26/2019 00:32	WG1369955
Trichloroethene	U		0.153	0.500	1	10/26/2019 00:32	WG1369955
Trichlorofluoromethane	U		0.130	2.50	1	10/26/2019 00:32	WG1369955
1,2,3-Trichloropropane	U		0.247	2.50	1	10/26/2019 00:32	WG1369955
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/26/2019 00:32	WG1369955
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/26/2019 00:32	WG1369955
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/26/2019 00:32	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/26/2019 00:32	WG1369955
Vinyl chloride	U		0.118	0.500	1	10/26/2019 00:32	WG1369955
Xylenes, Total	U		0.316	1.50	1	10/26/2019 00:32	WG1369955
<i>(S) Toluene-d8</i>	112			80.0-120		10/26/2019 00:32	WG1369955
<i>(S) 4-Bromofluorobenzene</i>	113			77.0-126		10/26/2019 00:32	WG1369955
<i>(S) 1,2-Dichloroethane-d4</i>	106			70.0-130		10/26/2019 00:32	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	408000		2710	20000	1	10/22/2019 17:03	WG1366946

Sample Narrative:

L1150936-06 WG1366946: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	22800		51.9	1000	1	10/17/2019 19:02	WG1364616
Nitrate	441		22.7	100	1	10/17/2019 19:02	WG1364616
Sulfate	5720		77.4	5000	1	10/17/2019 19:02	WG1364616

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	7170		102	1000	1	10/19/2019 01:45	WG1365383

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	1680		15.0	100	1	10/23/2019 15:02	WG1366325
Manganese	403		0.250	5.00	1	10/23/2019 15:02	WG1366325

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/19/2019 06:53	WG1365594
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		10/19/2019 06:53	WG1365594

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	4670		0.287	0.678	1	10/18/2019 12:04	WG1365164
Ethane	78.6		0.296	1.29	1	10/18/2019 12:04	WG1365164
Ethene	U		0.422	1.27	1	10/18/2019 12:04	WG1365164

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U	JO	1.05	25.0	1	10/26/2019 00:52	WG1369955
Acrylonitrile	U		0.873	5.00	1	10/26/2019 00:52	WG1369955
Benzene	U		0.0896	0.500	1	10/26/2019 00:52	WG1369955
Bromobenzene	U	JO	0.133	0.500	1	10/26/2019 00:52	WG1369955
Bromodichloromethane	U		0.0800	0.500	1	10/26/2019 00:52	WG1369955
Bromochloromethane	U		0.145	0.500	1	10/26/2019 00:52	WG1369955
Bromoform	U		0.186	0.500	1	10/26/2019 00:52	WG1369955
Bromomethane	U		0.157	2.50	1	10/26/2019 00:52	WG1369955
n-Butylbenzene	U		0.143	0.500	1	10/26/2019 00:52	WG1369955
sec-Butylbenzene	U		0.134	0.500	1	10/26/2019 00:52	WG1369955
tert-Butylbenzene	U		0.183	0.500	1	10/26/2019 00:52	WG1369955
Carbon disulfide	U		0.101	0.500	1	10/26/2019 00:52	WG1369955
Carbon tetrachloride	U		0.159	0.500	1	10/26/2019 00:52	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/26/2019 00:52	WG1369955
Chlorodibromomethane	U		0.128	0.500	1	10/26/2019 00:52	WG1369955
Chloroethane	U		0.141	2.50	1	10/26/2019 00:52	WG1369955
Chloroform	U		0.0860	0.500	1	10/26/2019 00:52	WG1369955
Chloromethane	U	JO	0.153	1.25	1	10/26/2019 00:52	WG1369955
2-Chlorotoluene	U		0.111	0.500	1	10/26/2019 00:52	WG1369955
4-Chlorotoluene	U		0.0972	0.500	1	10/26/2019 00:52	WG1369955
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/26/2019 00:52	WG1369955
1,2-Dibromoethane	U		0.193	0.500	1	10/26/2019 00:52	WG1369955
Dibromomethane	U		0.117	0.500	1	10/26/2019 00:52	WG1369955
1,2-Dichlorobenzene	U		0.101	0.500	1	10/26/2019 00:52	WG1369955
1,3-Dichlorobenzene	U		0.130	0.500	1	10/26/2019 00:52	WG1369955
1,4-Dichlorobenzene	U		0.121	0.500	1	10/26/2019 00:52	WG1369955
Dichlorodifluoromethane	U		0.127	2.50	1	10/26/2019 00:52	WG1369955
1,1-Dichloroethane	U		0.114	0.500	1	10/26/2019 00:52	WG1369955
1,2-Dichloroethane	U		0.108	0.500	1	10/26/2019 00:52	WG1369955
1,1-Dichloroethene	U		0.188	0.500	1	10/26/2019 00:52	WG1369955
cis-1,2-Dichloroethene	0.188	U	0.0933	0.500	1	10/26/2019 00:52	WG1369955
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/26/2019 00:52	WG1369955
1,2-Dichloropropane	U		0.190	0.500	1	10/26/2019 00:52	WG1369955
1,1-Dichloropropene	U		0.128	0.500	1	10/26/2019 00:52	WG1369955
1,3-Dichloropropane	U		0.147	1.00	1	10/26/2019 00:52	WG1369955
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/26/2019 00:52	WG1369955
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/26/2019 00:52	WG1369955
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/26/2019 00:52	WG1369955
2,2-Dichloropropane	U		0.0929	0.500	1	10/26/2019 00:52	WG1369955
Di-isopropyl ether	U		0.0924	0.500	1	10/26/2019 00:52	WG1369955
Ethylbenzene	U		0.158	0.500	1	10/26/2019 00:52	WG1369955
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/26/2019 00:52	WG1369955
2-Hexanone	U		0.757	5.00	1	10/26/2019 00:52	WG1369955
n-Hexane	U		0.305	5.00	1	10/26/2019 00:52	WG1369955
Iodomethane	U		0.377	10.0	1	10/26/2019 00:52	WG1369955
Isopropylbenzene	U		0.126	0.500	1	10/26/2019 00:52	WG1369955
p-Isopropyltoluene	U		0.138	0.500	1	10/26/2019 00:52	WG1369955
2-Butanone (MEK)	U		1.28	5.00	1	10/26/2019 00:52	WG1369955
Methylene Chloride	U		1.07	2.50	1	10/26/2019 00:52	WG1369955
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/26/2019 00:52	WG1369955
Methyl tert-butyl ether	U		0.102	0.500	1	10/26/2019 00:52	WG1369955
Naphthalene	U		0.174	2.50	1	10/26/2019 00:52	WG1369955
n-Propylbenzene	U		0.162	0.500	1	10/26/2019 00:52	WG1369955
Styrene	0.141	U	0.117	0.500	1	10/26/2019 00:52	WG1369955
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/26/2019 00:52	WG1369955
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/26/2019 00:52	WG1369955
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/26/2019 00:52	WG1369955
Tetrachloroethene	U		0.199	0.500	1	10/26/2019 00:52	WG1369955
Toluene	0.561		0.412	0.500	1	10/26/2019 00:52	WG1369955
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/26/2019 00:52	WG1369955
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/26/2019 00:52	WG1369955
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/26/2019 00:52	WG1369955
1,1,2-Trichloroethane	U		0.186	0.500	1	10/26/2019 00:52	WG1369955
Trichloroethene	U		0.153	0.500	1	10/26/2019 00:52	WG1369955
Trichlorofluoromethane	U		0.130	2.50	1	10/26/2019 00:52	WG1369955
1,2,3-Trichloropropane	U		0.247	2.50	1	10/26/2019 00:52	WG1369955
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/26/2019 00:52	WG1369955
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/26/2019 00:52	WG1369955
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/26/2019 00:52	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/26/2019 00:52	WG1369955
Vinyl chloride	U		0.118	0.500	1	10/26/2019 00:52	WG1369955
Xylenes, Total	U		0.316	1.50	1	10/26/2019 00:52	WG1369955
<i>(S) Toluene-d8</i>	112			80.0-120		10/26/2019 00:52	WG1369955
<i>(S) 4-Bromofluorobenzene</i>	112			77.0-126		10/26/2019 00:52	WG1369955
<i>(S) 1,2-Dichloroethane-d4</i>	102			70.0-130		10/26/2019 00:52	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	518000		2710	20000	1	10/22/2019 17:10	WG1366946

Sample Narrative:

L1150936-07 WG1366946: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	35800		51.9	1000	1	10/17/2019 19:14	WG1364616
Nitrate	U		22.7	100	1	10/17/2019 19:14	WG1364616
Sulfate	67700		77.4	5000	1	10/17/2019 19:14	WG1364616

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	20900		102	1000	1	10/19/2019 02:08	WG1365383

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	8540		15.0	100	1	10/23/2019 15:05	WG1366325
Manganese	2090		0.250	5.00	1	10/23/2019 15:05	WG1366325

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	2000		31.6	100	1	10/19/2019 07:17	WG1365594
(S) a,a,a-Trifluorotoluene(FID)	109			78.0-120		10/19/2019 07:17	WG1365594

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	5780		0.287	0.678	1	10/18/2019 13:25	WG1365165
Ethane	62.6		0.296	1.29	1	10/18/2019 13:25	WG1365165
Ethene	110		0.422	1.27	1	10/18/2019 13:25	WG1365165

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	1.18	J JO	1.05	25.0	1	10/26/2019 01:13	WG1369955
Acrylonitrile	U		0.873	5.00	1	10/26/2019 01:13	WG1369955
Benzene	0.211	J	0.0896	0.500	1	10/26/2019 01:13	WG1369955
Bromobenzene	U	JO	0.133	0.500	1	10/26/2019 01:13	WG1369955
Bromodichloromethane	U		0.0800	0.500	1	10/26/2019 01:13	WG1369955
Bromochloromethane	U		0.145	0.500	1	10/26/2019 01:13	WG1369955
Bromoform	U		0.186	0.500	1	10/26/2019 01:13	WG1369955
Bromomethane	U		0.157	2.50	1	10/26/2019 01:13	WG1369955
n-Butylbenzene	U		0.143	0.500	1	10/26/2019 01:13	WG1369955
sec-Butylbenzene	U		0.134	0.500	1	10/26/2019 01:13	WG1369955
tert-Butylbenzene	U		0.183	0.500	1	10/26/2019 01:13	WG1369955
Carbon disulfide	U		0.101	0.500	1	10/26/2019 01:13	WG1369955
Carbon tetrachloride	U		0.159	0.500	1	10/26/2019 01:13	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/26/2019 01:13	WG1369955
Chlorodibromomethane	U		0.128	0.500	1	10/26/2019 01:13	WG1369955
Chloroethane	U		0.141	2.50	1	10/26/2019 01:13	WG1369955
Chloroform	U		0.0860	0.500	1	10/26/2019 01:13	WG1369955
Chloromethane	U	JO	0.153	1.25	1	10/26/2019 01:13	WG1369955
2-Chlorotoluene	U		0.111	0.500	1	10/26/2019 01:13	WG1369955
4-Chlorotoluene	U		0.0972	0.500	1	10/26/2019 01:13	WG1369955
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/26/2019 01:13	WG1369955
1,2-Dibromoethane	U		0.193	0.500	1	10/26/2019 01:13	WG1369955
Dibromomethane	U		0.117	0.500	1	10/26/2019 01:13	WG1369955
1,2-Dichlorobenzene	U		0.101	0.500	1	10/26/2019 01:13	WG1369955
1,3-Dichlorobenzene	U		0.130	0.500	1	10/26/2019 01:13	WG1369955
1,4-Dichlorobenzene	U		0.121	0.500	1	10/26/2019 01:13	WG1369955
Dichlorodifluoromethane	U		0.127	2.50	1	10/26/2019 01:13	WG1369955
1,1-Dichloroethane	U		0.114	0.500	1	10/26/2019 01:13	WG1369955
1,2-Dichloroethane	U		0.108	0.500	1	10/26/2019 01:13	WG1369955
1,1-Dichloroethene	8.47		0.188	0.500	1	10/26/2019 01:13	WG1369955
cis-1,2-Dichloroethene	2510		18.7	100	200	10/27/2019 15:49	WG1370146
trans-1,2-Dichloroethene	11.0		0.152	0.500	1	10/26/2019 01:13	WG1369955
1,2-Dichloropropane	U		0.190	0.500	1	10/26/2019 01:13	WG1369955
1,1-Dichloropropene	U		0.128	0.500	1	10/26/2019 01:13	WG1369955
1,3-Dichloropropane	U		0.147	1.00	1	10/26/2019 01:13	WG1369955
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/26/2019 01:13	WG1369955
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/26/2019 01:13	WG1369955
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/26/2019 01:13	WG1369955
2,2-Dichloropropane	U		0.0929	0.500	1	10/26/2019 01:13	WG1369955
Di-isopropyl ether	U		0.0924	0.500	1	10/26/2019 01:13	WG1369955
Ethylbenzene	U		0.158	0.500	1	10/26/2019 01:13	WG1369955
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/26/2019 01:13	WG1369955
2-Hexanone	U		0.757	5.00	1	10/26/2019 01:13	WG1369955
n-Hexane	U		0.305	5.00	1	10/26/2019 01:13	WG1369955
Iodomethane	U		0.377	10.0	1	10/26/2019 01:13	WG1369955
Isopropylbenzene	U		0.126	0.500	1	10/26/2019 01:13	WG1369955
p-Isopropyltoluene	U		0.138	0.500	1	10/26/2019 01:13	WG1369955
2-Butanone (MEK)	U		1.28	5.00	1	10/26/2019 01:13	WG1369955
Methylene Chloride	U		1.07	2.50	1	10/26/2019 01:13	WG1369955
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/26/2019 01:13	WG1369955
Methyl tert-butyl ether	U		0.102	0.500	1	10/26/2019 01:13	WG1369955
Naphthalene	U		0.174	2.50	1	10/26/2019 01:13	WG1369955
n-Propylbenzene	U		0.162	0.500	1	10/26/2019 01:13	WG1369955
Styrene	U		0.117	0.500	1	10/26/2019 01:13	WG1369955
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/26/2019 01:13	WG1369955
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/26/2019 01:13	WG1369955
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/26/2019 01:13	WG1369955
Tetrachloroethene	2.35		0.199	0.500	1	10/26/2019 01:13	WG1369955
Toluene	U		0.412	0.500	1	10/26/2019 01:13	WG1369955
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/26/2019 01:13	WG1369955
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/26/2019 01:13	WG1369955
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/26/2019 01:13	WG1369955
1,1,2-Trichloroethane	U		0.186	0.500	1	10/26/2019 01:13	WG1369955
Trichloroethene	28.0		0.153	0.500	1	10/26/2019 01:13	WG1369955
Trichlorofluoromethane	U		0.130	2.50	1	10/26/2019 01:13	WG1369955
1,2,3-Trichloropropane	U		0.247	2.50	1	10/26/2019 01:13	WG1369955
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/26/2019 01:13	WG1369955
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/26/2019 01:13	WG1369955
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/26/2019 01:13	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/26/2019 01:13	WG1369955
Vinyl chloride	1180		23.6	100	200	10/27/2019 15:49	WG1370146
Xylenes, Total	U		0.316	1.50	1	10/26/2019 01:13	WG1369955
<i>(S) Toluene-d8</i>	111			80.0-120		10/26/2019 01:13	WG1369955
<i>(S) Toluene-d8</i>	94.2			80.0-120		10/27/2019 15:49	WG1370146
<i>(S) 4-Bromofluorobenzene</i>	112			77.0-126		10/26/2019 01:13	WG1369955
<i>(S) 4-Bromofluorobenzene</i>	92.6			77.0-126		10/27/2019 15:49	WG1370146
<i>(S) 1,2-Dichloroethane-d4</i>	105			70.0-130		10/26/2019 01:13	WG1369955
<i>(S) 1,2-Dichloroethane-d4</i>	103			70.0-130		10/27/2019 15:49	WG1370146

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/19/2019 04:05	WG1365594
(S) a,a,a-Trifluorotoluene(FID)	108			78.0-120		10/19/2019 04:05	WG1365594

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.29	J	1.05	25.0	1	10/26/2019 15:08	WG1370189
Acrylonitrile	U		0.873	5.00	1	10/26/2019 15:08	WG1370189
Benzene	U		0.0896	0.500	1	10/26/2019 15:08	WG1370189
Bromobenzene	U		0.133	0.500	1	10/26/2019 15:08	WG1370189
Bromodichloromethane	U		0.0800	0.500	1	10/26/2019 15:08	WG1370189
Bromochloromethane	U		0.145	0.500	1	10/26/2019 15:08	WG1370189
Bromoform	U		0.186	0.500	1	10/26/2019 15:08	WG1370189
Bromomethane	U	JO	0.157	2.50	1	10/26/2019 15:08	WG1370189
n-Butylbenzene	U		0.143	0.500	1	10/26/2019 15:08	WG1370189
sec-Butylbenzene	U		0.134	0.500	1	10/26/2019 15:08	WG1370189
tert-Butylbenzene	U		0.183	0.500	1	10/26/2019 15:08	WG1370189
Carbon disulfide	U		0.101	0.500	1	10/26/2019 15:08	WG1370189
Carbon tetrachloride	U		0.159	0.500	1	10/26/2019 15:08	WG1370189
Chlorobenzene	U		0.140	0.500	1	10/26/2019 15:08	WG1370189
Chlorodibromomethane	U		0.128	0.500	1	10/26/2019 15:08	WG1370189
Chloroethane	U		0.141	2.50	1	10/26/2019 15:08	WG1370189
Chloroform	U		0.0860	0.500	1	10/26/2019 15:08	WG1370189
Chloromethane	U		0.153	1.25	1	10/26/2019 15:08	WG1370189
2-Chlorotoluene	U		0.111	0.500	1	10/26/2019 15:08	WG1370189
4-Chlorotoluene	U		0.0972	0.500	1	10/26/2019 15:08	WG1370189
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/26/2019 15:08	WG1370189
1,2-Dibromoethane	U		0.193	0.500	1	10/26/2019 15:08	WG1370189
Dibromomethane	U		0.117	0.500	1	10/26/2019 15:08	WG1370189
1,2-Dichlorobenzene	U		0.101	0.500	1	10/26/2019 15:08	WG1370189
1,3-Dichlorobenzene	U		0.130	0.500	1	10/26/2019 15:08	WG1370189
1,4-Dichlorobenzene	U		0.121	0.500	1	10/26/2019 15:08	WG1370189
Dichlorodifluoromethane	U		0.127	2.50	1	10/26/2019 15:08	WG1370189
1,1-Dichloroethane	U		0.114	0.500	1	10/26/2019 15:08	WG1370189
1,2-Dichloroethane	U		0.108	0.500	1	10/26/2019 15:08	WG1370189
1,1-Dichloroethene	U		0.188	0.500	1	10/26/2019 15:08	WG1370189
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/26/2019 15:08	WG1370189
trans-1,2-Dichloroethene	0.228	J	0.152	0.500	1	10/26/2019 15:08	WG1370189
1,2-Dichloropropane	U		0.190	0.500	1	10/26/2019 15:08	WG1370189
1,1-Dichloropropene	U		0.128	0.500	1	10/26/2019 15:08	WG1370189
1,3-Dichloropropane	U		0.147	1.00	1	10/26/2019 15:08	WG1370189
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/26/2019 15:08	WG1370189
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/26/2019 15:08	WG1370189
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/26/2019 15:08	WG1370189
2,2-Dichloropropane	U		0.0929	0.500	1	10/26/2019 15:08	WG1370189
Di-isopropyl ether	U		0.0924	0.500	1	10/26/2019 15:08	WG1370189
Ethylbenzene	U		0.158	0.500	1	10/26/2019 15:08	WG1370189
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/26/2019 15:08	WG1370189
2-Hexanone	U		0.757	5.00	1	10/26/2019 15:08	WG1370189
n-Hexane	U		0.305	5.00	1	10/26/2019 15:08	WG1370189
Iodomethane	U	JO	0.377	10.0	1	10/26/2019 15:08	WG1370189
Isopropylbenzene	U	JO	0.126	0.500	1	10/26/2019 15:08	WG1370189
p-Isopropyltoluene	U		0.138	0.500	1	10/26/2019 15:08	WG1370189
2-Butanone (MEK)	U		1.28	5.00	1	10/26/2019 15:08	WG1370189



Collected date/time: 10/16/19 15:40

L1150936

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methylene Chloride	U		1.07	2.50	1	10/26/2019 15:08	WG1370189
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/26/2019 15:08	WG1370189
Methyl tert-butyl ether	U		0.102	0.500	1	10/26/2019 15:08	WG1370189
Naphthalene	U		0.174	2.50	1	10/26/2019 15:08	WG1370189
n-Propylbenzene	U		0.162	0.500	1	10/26/2019 15:08	WG1370189
Styrene	U		0.117	0.500	1	10/26/2019 15:08	WG1370189
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/26/2019 15:08	WG1370189
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/26/2019 15:08	WG1370189
1,1,2-Trichlorotrifluoroethane	U	<u>JO</u>	0.164	0.500	1	10/26/2019 15:08	WG1370189
Tetrachloroethene	U		0.199	0.500	1	10/26/2019 15:08	WG1370189
Toluene	U		0.412	0.500	1	10/26/2019 15:08	WG1370189
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/26/2019 15:08	WG1370189
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/26/2019 15:08	WG1370189
1,1,1-Trichloroethane	U	<u>JO</u>	0.0940	0.500	1	10/26/2019 15:08	WG1370189
1,1,2-Trichloroethane	U		0.186	0.500	1	10/26/2019 15:08	WG1370189
Trichloroethene	U	<u>JO</u>	0.153	0.500	1	10/26/2019 15:08	WG1370189
Trichlorofluoromethane	U		0.130	2.50	1	10/26/2019 15:08	WG1370189
1,2,3-Trichloropropane	U		0.247	2.50	1	10/26/2019 15:08	WG1370189
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/26/2019 15:08	WG1370189
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/26/2019 15:08	WG1370189
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/26/2019 15:08	WG1370189
Vinyl acetate	U		0.645	5.00	1	10/26/2019 15:08	WG1370189
Vinyl chloride	U		0.118	0.500	1	10/26/2019 15:08	WG1370189
Xylenes, Total	U		0.316	1.50	1	10/26/2019 15:08	WG1370189
(S) Toluene-d8	97.0			80.0-120		10/26/2019 15:08	WG1370189
(S) 4-Bromofluorobenzene	91.4			77.0-126		10/26/2019 15:08	WG1370189
(S) 1,2-Dichloroethane-d4	98.3			70.0-130		10/26/2019 15:08	WG1370189

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3463802-1 10/22/19 15:00

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	3840	↓	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1150905-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1150905-05 10/22/19 15:19 • (DUP) R3463802-3 10/22/19 15:27

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	284000	286000	1	0.672		20

Sample Narrative:

OS: Endpoint pH 4.5

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3463802-5 10/22/19 16:29

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	102000	102	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3462289-1 10/17/19 10:45

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	112	↓	51.9	1000
Nitrate	U		22.7	100
Sulfate	80.2	↓	77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1150920-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1150920-01 10/17/19 16:16 • (DUP) R3462289-3 10/17/19 16:28

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	234000	232000	1	0.799	E	15
Nitrate	241	240	1	0.541		15
Sulfate	2280	2250	1	1.21	↓	15

L1151015-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1151015-06 10/17/19 21:48 • (DUP) R3462289-6 10/17/19 22:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	55600	54400	1	2.09		15
Nitrate	U	0.000	1	0.000		15
Sulfate	4790	4690	1	2.08	↓	15

Laboratory Control Sample (LCS)

(LCS) R3462289-2 10/17/19 10:57

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Chloride	40000	39000	97.4	80.0-120	
Nitrate	8000	7870	98.4	80.0-120	
Sulfate	40000	39000	97.6	80.0-120	



L1150936-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1150936-01 10/17/19 16:54 • (MS) R3462289-4 10/17/19 17:07 • (MSD) R3462289-5 10/17/19 17:20

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	16100	65200	64700	98.3	97.3	1	80.0-120			0.762	15
Nitrate	5000	4120	8920	8880	96.1	95.2	1	80.0-120			0.503	15
Sulfate	50000	94300	137000	139000	85.5	88.6	1	80.0-120	E	E	1.15	15

L1151015-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L1151015-06 10/17/19 21:48 • (MS) R3462289-7 10/17/19 22:13

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	55600	102000	92.5	1	80.0-120	E
Nitrate	5000	U	4880	97.6	1	80.0-120	
Sulfate	50000	4790	53300	96.9	1	80.0-120	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3462716-1 10/18/19 13:21

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	666	↓	102	1000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1150675-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1150675-03 10/18/19 15:46 • (DUP) R3462716-3 10/18/19 16:05

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	26200	26000	1	0.958		20

L1150936-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1150936-03 10/18/19 22:37 • (DUP) R3462716-6 10/18/19 22:57

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	4760	4610	1	3.35		20

Laboratory Control Sample (LCS)

(LCS) R3462716-2 10/18/19 14:02

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC (Total Organic Carbon)	75000	67000	89.4	85.0-115	

L1150936-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1150936-01 10/18/19 21:14 • (MS) R3462716-4 10/18/19 21:37 • (MSD) R3462716-5 10/18/19 21:59

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	3660	50800	50900	94.3	94.4	1	80.0-120			0.118	20

L1150936-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1150936-05 10/19/19 00:41 • (MS) R3462716-7 10/19/19 01:05 • (MSD) R3462716-8 10/19/19 01:27

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	418	48800	47400	96.7	94.0	1	80.0-120			2.79	20



Method Blank (MB)

(MB) R3464170-1 10/23/19 14:00

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Iron	U		15.0	100
Manganese	U		0.250	5.00

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3464170-2 10/23/19 14:03 • (LCSD) R3464170-3 10/23/19 14:07

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Iron	5000	5010	5250	100	105	80.0-120			4.59	20
Manganese	50.0	49.4	52.4	98.7	105	80.0-120			5.91	20

L1150936-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1150936-01 10/23/19 14:11 • (MS) R3464170-5 10/23/19 14:18 • (MSD) R3464170-6 10/23/19 14:21

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Iron	5000	119	5280	5440	103	107	1	75.0-125			2.98	20
Manganese	50.0	71.6	122	124	101	106	1	75.0-125			1.86	20



Method Blank (MB)

(MB) R3464595-2 10/19/19 03:41

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120

Laboratory Control Sample (LCS)

(LCS) R3464595-1 10/19/19 02:53

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	6120	111	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			92.0	78.0-120	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3462472-1 10/18/19 10:58

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

L1150860-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1150860-01 10/18/19 11:07 • (DUP) R3462472-2 10/18/19 11:42

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	ND	0.000	1	0.000		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3462472-3 10/18/19 12:53 • (LCSD) R3462472-4 10/18/19 12:56

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	70.5	71.7	104	106	85.0-115			1.72	20
Ethane	129	126	130	97.5	101	85.0-115			3.61	20
Ethene	127	132	136	104	107	85.0-115			2.99	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3462507-1 10/18/19 13:05

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

L1150336-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1150336-08 10/18/19 13:10 • (DUP) R3462507-2 10/18/19 13:33

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	20.2	22.0	1	8.39		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3462507-5 10/18/19 13:50 • (LCSD) R3462507-6 10/18/19 13:56

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	72.3	71.6	107	106	85.0-115			0.913	20
Ethane	129	127	127	98.2	98.7	85.0-115			0.516	20
Ethene	127	133	133	105	105	85.0-115			0.356	20

L1150339-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1150339-10 10/18/19 13:42 • (MS) R3462507-3 10/18/19 13:45 • (MSD) R3462507-4 10/18/19 13:47

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Methane	67.8	10400	10600	11000	19.7	74.1	10	85.0-115	V	V	3.43	20
Ethane	129	380	1800	1480	110	85.0	10	85.0-115			19.6	20
Ethene	127	741	2220	1900	116	91.0	10	85.0-115	J5		15.6	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3465284-3 10/25/19 21:00

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3465284-3 10/25/19 21:00

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	0.238	U	0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,2,4-Trimethylbenzene	U		0.123	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	113			80.0-120
(S) 4-Bromofluorobenzene	114			77.0-126
(S) 1,2-Dichloroethane-d4	102			70.0-130

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Laboratory Control Sample (LCS)

(LCS) R3465284-1 10/25/19 19:59

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Acetone	125	94.6	75.7	19.0-160	
Acrylonitrile	125	128	102	55.0-149	
Benzene	25.0	23.6	94.4	70.0-123	
Bromobenzene	25.0	20.2	80.8	73.0-121	
Bromodichloromethane	25.0	25.0	100	75.0-120	
Bromochloromethane	25.0	27.5	110	76.0-122	
Bromoform	25.0	30.8	123	68.0-132	
Bromomethane	25.0	26.6	106	10.0-160	
n-Butylbenzene	25.0	22.6	90.4	73.0-125	
sec-Butylbenzene	25.0	22.5	90.0	75.0-125	
tert-Butylbenzene	25.0	24.8	99.2	76.0-124	
Carbon disulfide	25.0	23.7	94.8	61.0-128	
Carbon tetrachloride	25.0	29.8	119	68.0-126	
Chlorobenzene	25.0	26.6	106	80.0-121	
Chlorodibromomethane	25.0	30.2	121	77.0-125	
Chloroethane	25.0	25.9	104	47.0-150	
Chloroform	25.0	23.2	92.8	73.0-120	
Chloromethane	25.0	21.7	86.8	41.0-142	
2-Chlorotoluene	25.0	21.7	86.8	76.0-123	
4-Chlorotoluene	25.0	21.9	87.6	75.0-122	
1,2-Dibromo-3-Chloropropane	25.0	26.6	106	58.0-134	
1,2-Dibromoethane	25.0	25.7	103	80.0-122	
Dibromomethane	25.0	25.7	103	80.0-120	
1,2-Dichlorobenzene	25.0	26.6	106	79.0-121	
1,3-Dichlorobenzene	25.0	25.6	102	79.0-120	
1,4-Dichlorobenzene	25.0	23.7	94.8	79.0-120	
trans-1,4-Dichloro-2-butene	25.0	18.8	75.2	33.0-144	
Dichlorodifluoromethane	25.0	22.3	89.2	51.0-149	
1,1-Dichloroethane	25.0	24.4	97.6	70.0-126	
1,2-Dichloroethane	25.0	23.8	95.2	70.0-128	
1,1-Dichloroethene	25.0	26.6	106	71.0-124	
cis-1,2-Dichloroethene	25.0	25.5	102	73.0-120	
trans-1,2-Dichloroethene	25.0	25.6	102	73.0-120	
1,2-Dichloropropane	25.0	23.7	94.8	77.0-125	
1,1-Dichloropropene	25.0	25.3	101	74.0-126	
1,3-Dichloropropane	25.0	24.5	98.0	80.0-120	
cis-1,3-Dichloropropene	25.0	25.2	101	80.0-123	
trans-1,3-Dichloropropene	25.0	25.9	104	78.0-124	
2,2-Dichloropropane	25.0	26.8	107	58.0-130	
Di-isopropyl ether	25.0	25.1	100	58.0-138	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3465284-1 10/25/19 19:59

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Ethylbenzene	25.0	25.7	103	79.0-123	
Hexachloro-1,3-butadiene	25.0	25.6	102	54.0-138	
2-Hexanone	125	132	106	67.0-149	
n-Hexane	25.0	23.9	95.6	57.0-133	
Iodomethane	125	145	116	33.0-147	
Isopropylbenzene	25.0	28.4	114	76.0-127	
p-Isopropyltoluene	25.0	24.2	96.8	76.0-125	
2-Butanone (MEK)	125	119	95.2	44.0-160	
Methylene Chloride	25.0	23.2	92.8	67.0-120	
4-Methyl-2-pentanone (MIBK)	125	133	106	68.0-142	
Methyl tert-butyl ether	25.0	26.0	104	68.0-125	
Naphthalene	25.0	25.7	103	54.0-135	
n-Propylbenzene	25.0	22.0	88.0	77.0-124	
Styrene	25.0	28.2	113	73.0-130	
1,1,1,2-Tetrachloroethane	25.0	30.2	121	75.0-125	
1,1,2,2-Tetrachloroethane	25.0	20.9	83.6	65.0-130	
Tetrachloroethene	25.0	29.2	117	72.0-132	
Toluene	25.0	25.2	101	79.0-120	
1,1,2-Trichlorotrifluoroethane	25.0	27.8	111	69.0-132	
1,2,3-Trichlorobenzene	25.0	27.0	108	50.0-138	
1,2,4-Trichlorobenzene	25.0	26.3	105	57.0-137	
1,1,1-Trichloroethane	25.0	28.2	113	73.0-124	
1,1,2-Trichloroethane	25.0	25.8	103	80.0-120	
Trichloroethene	25.0	28.0	112	78.0-124	
Trichlorofluoromethane	25.0	27.9	112	59.0-147	
1,2,3-Trichloropropane	25.0	22.6	90.4	73.0-130	
1,2,3-Trimethylbenzene	25.0	22.7	90.8	77.0-120	
1,2,4-Trimethylbenzene	25.0	22.3	89.2	76.0-121	
1,3,5-Trimethylbenzene	25.0	23.0	92.0	76.0-122	
Vinyl acetate	125	134	107	11.0-160	
Vinyl chloride	25.0	26.1	104	67.0-131	
Xylenes, Total	75.0	80.7	108	79.0-123	
(S) Toluene-d8			112	80.0-120	
(S) 4-Bromofluorobenzene			109	77.0-126	
(S) 1,2-Dichloroethane-d4			107	70.0-130	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3465605-3 10/27/19 09:18

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
cis-1,2-Dichloroethene	U		0.0933	0.500
Vinyl chloride	U		0.118	0.500
(S) Toluene-d8	96.6			80.0-120
(S) 4-Bromofluorobenzene	92.5			77.0-126
(S) 1,2-Dichloroethane-d4	102			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3465605-1 10/27/19 08:19 • (LCSD) R3465605-2 10/27/19 08:38

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
cis-1,2-Dichloroethene	25.0	23.1	22.9	92.4	91.6	73.0-120			0.870	20
Vinyl chloride	25.0	29.8	30.8	119	123	67.0-131			3.30	20
(S) Toluene-d8				97.5	92.4	80.0-120				
(S) 4-Bromofluorobenzene				96.1	91.1	77.0-126				
(S) 1,2-Dichloroethane-d4				101	103	70.0-130				

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3465451-2 10/26/19 12:44

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3465451-2 10/26/19 12:44

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	0.982	U	0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	0.356	U	0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	95.5			80.0-120
(S) 4-Bromofluorobenzene	92.7			77.0-126
(S) 1,2-Dichloroethane-d4	100			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3465451-1 10/26/19 12:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Acetone	125	146	117	19.0-160	
Acrylonitrile	125	168	134	55.0-149	
Benzene	25.0	23.8	95.2	70.0-123	
Bromobenzene	25.0	27.7	111	73.0-121	
Bromodichloromethane	25.0	23.4	93.6	75.0-120	
Bromochloromethane	25.0	26.6	106	76.0-122	
Bromoform	25.0	24.6	98.4	68.0-132	
Bromomethane	25.0	16.1	64.4	10.0-160	
n-Butylbenzene	25.0	29.4	118	73.0-125	
sec-Butylbenzene	25.0	26.3	105	75.0-125	
tert-Butylbenzene	25.0	24.7	98.8	76.0-124	
Carbon disulfide	25.0	22.7	90.8	61.0-128	
Carbon tetrachloride	25.0	21.5	86.0	68.0-126	
Chlorobenzene	25.0	24.1	96.4	80.0-121	
Chlorodibromomethane	25.0	24.8	99.2	77.0-125	
Chloroethane	25.0	28.4	114	47.0-150	
Chloroform	25.0	22.7	90.8	73.0-120	
Chloromethane	25.0	25.8	103	41.0-142	
2-Chlorotoluene	25.0	26.9	108	76.0-123	
4-Chlorotoluene	25.0	26.6	106	75.0-122	
1,2-Dibromo-3-Chloropropane	25.0	25.6	102	58.0-134	
1,2-Dibromoethane	25.0	25.6	102	80.0-122	
Dibromomethane	25.0	26.4	106	80.0-120	
1,2-Dichlorobenzene	25.0	27.8	111	79.0-121	
1,3-Dichlorobenzene	25.0	28.5	114	79.0-120	
1,4-Dichlorobenzene	25.0	27.8	111	79.0-120	
Dichlorodifluoromethane	25.0	22.5	90.0	51.0-149	
1,1-Dichloroethane	25.0	27.6	110	70.0-126	
1,2-Dichloroethane	25.0	28.4	114	70.0-128	
1,1-Dichloroethene	25.0	24.2	96.8	71.0-124	
cis-1,2-Dichloroethene	25.0	24.0	96.0	73.0-120	
trans-1,2-Dichloroethene	25.0	22.5	90.0	73.0-120	
1,2-Dichloropropane	25.0	29.5	118	77.0-125	
1,1-Dichloropropene	25.0	24.6	98.4	74.0-126	
1,3-Dichloropropane	25.0	27.0	108	80.0-120	
cis-1,3-Dichloropropene	25.0	24.9	99.6	80.0-123	
trans-1,3-Dichloropropene	25.0	26.8	107	78.0-124	
trans-1,4-Dichloro-2-butene	25.0	33.7	135	33.0-144	
2,2-Dichloropropane	25.0	23.0	92.0	58.0-130	
Di-isopropyl ether	25.0	29.5	118	58.0-138	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3465451-1 10/26/19 12:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Ethylbenzene	25.0	22.5	90.0	79.0-123	
Hexachloro-1,3-butadiene	25.0	31.4	126	54.0-138	
2-Hexanone	125	172	138	67.0-149	
n-Hexane	25.0	29.8	119	57.0-133	
Iodomethane	125	104	83.2	33.0-147	
Isopropylbenzene	25.0	21.3	85.2	76.0-127	
p-Isopropyltoluene	25.0	27.1	108	76.0-125	
2-Butanone (MEK)	125	139	111	44.0-160	
Methylene Chloride	25.0	22.5	90.0	67.0-120	
4-Methyl-2-pentanone (MIBK)	125	142	114	68.0-142	
Methyl tert-butyl ether	25.0	25.3	101	68.0-125	
Naphthalene	25.0	23.9	95.6	54.0-135	
n-Propylbenzene	25.0	25.2	101	77.0-124	
Styrene	25.0	23.9	95.6	73.0-130	
1,1,1,2-Tetrachloroethane	25.0	23.3	93.2	75.0-125	
1,1,2,2-Tetrachloroethane	25.0	25.9	104	65.0-130	
1,1,2-Trichlorotrifluoroethane	25.0	21.4	85.6	69.0-132	
Tetrachloroethene	25.0	22.9	91.6	72.0-132	
Toluene	25.0	23.7	94.8	79.0-120	
1,2,3-Trichlorobenzene	25.0	27.3	109	50.0-138	
1,2,4-Trichlorobenzene	25.0	30.0	120	57.0-137	
1,1,1-Trichloroethane	25.0	21.4	85.6	73.0-124	
1,1,2-Trichloroethane	25.0	24.5	98.0	80.0-120	
Trichloroethene	25.0	22.2	88.8	78.0-124	
Trichlorofluoromethane	25.0	26.9	108	59.0-147	
1,2,3-Trichloropropane	25.0	26.0	104	73.0-130	
1,2,4-Trimethylbenzene	25.0	25.9	104	76.0-121	
1,2,3-Trimethylbenzene	25.0	26.6	106	77.0-120	
1,3,5-Trimethylbenzene	25.0	25.0	100	76.0-122	
Vinyl acetate	125	164	131	11.0-160	
Vinyl chloride	25.0	32.6	130	67.0-131	
Xylenes, Total	75.0	68.0	90.7	79.0-123	
(S) Toluene-d8			93.8	80.0-120	
(S) 4-Bromofluorobenzene			91.0	77.0-126	
(S) 1,2-Dichloroethane-d4			101	70.0-130	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration method criteria.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
V	The sample concentration is too high to evaluate accurate spike recoveries.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

PES-Seattle
 Billing Information: PES-Seattle
 Chain of Custody Page 1 of 1
 Analysis / Container / Preservative
 Pres Chk



Report to: Bill Haldeman/Brian O'neal
 Email To: on file

Project Description: American Linen
 City/State: Seattle, WA
 Collected:

Phone: on file
 Client Project #: 1413.04.02.S01E
 Lab Project #: PESENVSWA-ALP

Collected by (print): Ben H. Kovas B. / Sharon M. / Sean
 Site/Facility ID #: American Linen
 P.O. #

Collected by (signature):
 Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Quote #
 Date Results Needed: STAT
 No. of Cntrs

Immediately Packed on Ice N ___ Y

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	**NO3,SO4,Chloride**	NWTPHGX	VOCs (V8260LLC)	Total Fe Mn 6020	TOC	Alkalinity	EEM (RSK175LL)	Remarks	Sample # (lab only)
MW-155-101619	Grab	GW	27	10/16/19	1015	12	X	X	X	X	X	X	X		-01
MW-158A-101619		GW	95		1030	12	X	X	X	X	X	X	X		-02
MW-142-101619		GW	45		1055	12	X	X	X	X	X	X	X		-03
MW-148-101619		GW	75		1205	12	X	X	X	X	X	X	X		-04
EQ-101619		GW	-		1245	12	X	X	X	X	X	X	X		-05
MW-157-101619		GW	75		1338	12	X	X	X	X	X	X	X		-06
MW-143-101619		GW	75		1445	12	X	X	X	X	X	X	X		-07
TRIP-101619		GW	-		1540	1	X	X	X	X	X	X	X		-08
BSH 10-16-19		GW													

* Matrix: SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:
 Samples returned via: ___ UPS ___ FedEx ___ Courier
 Tracking #: 1203 5974 6573

pH _____ Temp _____
 Flow _____ Other _____

Sample Receipt Checklist
 COC Seal Present/Intact: ___ NP ___ Y ___ N
 COC Signed/Accurate: ___ Y ___ N
 Bottles arrive intact: ___ Y ___ N
 Correct bottles used: ___ Y ___ N
 Sufficient volume sent: ___ Y ___ N
 If Applicable
 VOA Zero Headspace: ___ Y ___ N
 Preservation Correct/Checked: ___ Y ___ N

Relinquished by: (Signature) [Signature] Date: 10-16-19 Time: 16:30
 Received by: (Signature) [Signature] Trip Blank Received: Yes/No: 1 (HCl) MeOH TBR
 BAD SCREEN: <0.5 mF/HR

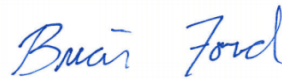
Relinquished by: (Signature) Date: _____ Time: _____
 Received by: (Signature) Temp: 3+0:35°C Bottles Received: 84 If preservation required by Login: Date/Time: 10/17/19 @ 1050 pm

Relinquished by: (Signature) Date: _____ Time: _____
 Received for lab by: (Signature) [Signature] Date: 10/17/19 Time: 8:45
 Hold: _____ Condition: NCP / OK

PES Environmental, Inc.- WA

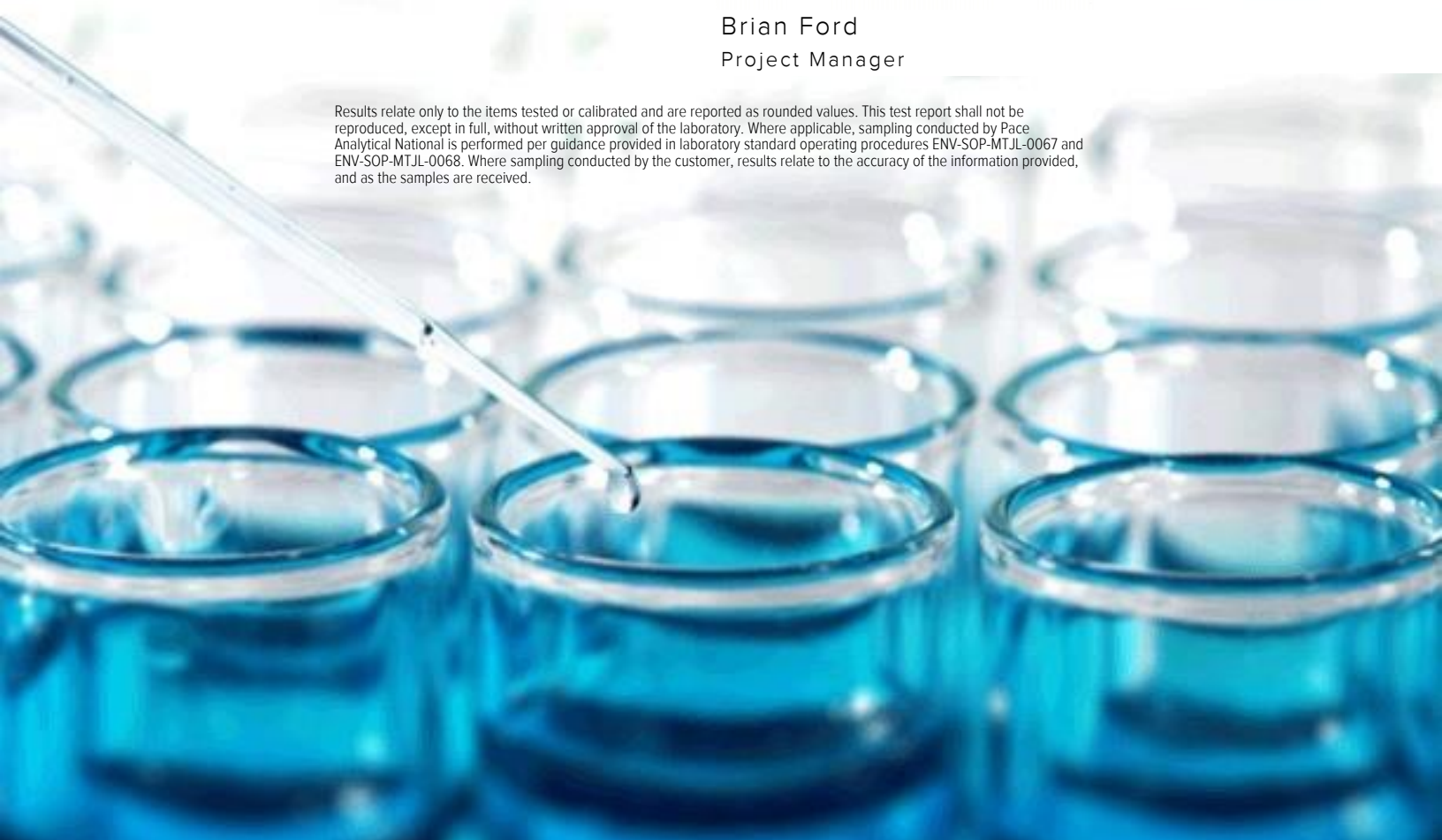
Sample Delivery Group: L1151401
Samples Received: 10/18/2019
Project Number: 1413.001.02.501E
Description: American Linen
Site: 1413.001.02.501E
Report To: Brian O'Neal/Bill Haldeman
1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





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SAMPLE SUMMARY



MW-918-101719 L1151401-01 GW

Collected by
K. Zygus
Collected date/time
10/17/19 08:30
Received date/time
10/18/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1367736	1	10/23/19 19:22	10/23/19 19:22	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1365245	1	10/18/19 18:09	10/18/19 18:09	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1365245	5	10/19/19 09:09	10/19/19 09:09	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1367168	1	10/22/19 18:09	10/22/19 18:09	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1366327	1	10/22/19 19:53	10/23/19 09:24	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1367716	1	10/23/19 17:20	10/23/19 17:20	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1366961	1	10/22/19 05:44	10/22/19 05:44	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1369955	1	10/26/19 01:33	10/26/19 01:33	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1370146	1	10/27/19 16:09	10/27/19 16:09	ACG	Mt. Juliet, TN

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Cp

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MW-156-101719 L1151401-02 GW

Collected by
K. Zygus
Collected date/time
10/17/19 09:40
Received date/time
10/18/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1367736	1	10/23/19 19:29	10/23/19 19:29	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1365245	1	10/18/19 18:26	10/18/19 18:26	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1367168	1	10/22/19 18:32	10/22/19 18:32	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1366327	1	10/22/19 19:53	10/23/19 09:28	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1367716	10	10/23/19 23:15	10/23/19 23:15	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1366961	1	10/22/19 05:47	10/22/19 05:47	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1369955	10	10/26/19 01:53	10/26/19 01:53	ADM	Mt. Juliet, TN

MW-9-101719 L1151401-03 GW

Collected by
K. Zygus
Collected date/time
10/17/19 10:20
Received date/time
10/18/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1367736	1	10/23/19 19:35	10/23/19 19:35	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1365245	1	10/18/19 18:58	10/18/19 18:58	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1367168	1	10/22/19 18:51	10/22/19 18:51	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1366327	1	10/22/19 19:53	10/23/19 09:31	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1367716	1	10/23/19 17:42	10/23/19 17:42	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1366961	1	10/22/19 05:51	10/22/19 05:51	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1369955	1	10/26/19 02:14	10/26/19 02:14	ADM	Mt. Juliet, TN

MW-120-101719 L1151401-04 GW

Collected by
K. Zygus
Collected date/time
10/17/19 12:35
Received date/time
10/18/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1367736	1	10/23/19 19:42	10/23/19 19:42	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1365245	1	10/18/19 19:15	10/18/19 19:15	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1365245	5	10/19/19 09:25	10/19/19 09:25	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1367168	1	10/22/19 19:53	10/22/19 19:53	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1366327	1	10/22/19 19:53	10/23/19 09:35	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1369652	1	10/26/19 16:56	10/26/19 16:56	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1366961	1	10/22/19 06:06	10/22/19 06:06	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1370146	1	10/27/19 16:28	10/27/19 16:28	ACG	Mt. Juliet, TN

SAMPLE SUMMARY

MW-160-101719 L1151401-05 GW

Collected by
K. Zygas
Collected date/time
10/17/19 12:45
Received date/time
10/18/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1367736	1	10/23/19 19:49	10/23/19 19:49	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1365245	1	10/18/19 19:31	10/18/19 19:31	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1367168	1	10/22/19 20:09	10/22/19 20:09	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1366327	1	10/22/19 19:53	10/23/19 09:39	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1368064	1	10/24/19 19:35	10/24/19 19:35	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1366961	1	10/22/19 06:11	10/22/19 06:11	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1369955	1	10/26/19 02:54	10/26/19 02:54	ADM	Mt. Juliet, TN

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Sr

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Qc

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Gl

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Al

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Sc

MW-127-101719 L1151401-06 GW

Collected by
K. Zygas
Collected date/time
10/17/19 14:22
Received date/time
10/18/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1367736	1	10/23/19 19:57	10/23/19 19:57	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1365245	1	10/18/19 20:21	10/18/19 20:21	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1367168	1	10/22/19 22:04	10/22/19 22:04	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1366327	1	10/22/19 19:53	10/23/19 09:42	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1368064	1	10/24/19 19:58	10/24/19 19:58	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1366961	1	10/22/19 06:13	10/22/19 06:13	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1369955	1	10/26/19 03:15	10/26/19 03:15	ADM	Mt. Juliet, TN

TRIP BLANK-101719 L1151401-07 GW

Collected by
K. Zygas
Collected date/time
10/17/19 00:00
Received date/time
10/18/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1368064	1	10/24/19 18:47	10/24/19 18:47	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1369955	1	10/25/19 21:50	10/25/19 21:50	ADM	Mt. Juliet, TN



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	264000		2710	20000	1	10/23/2019 19:22	WG1367736

Sample Narrative:

L1151401-01 WG1367736: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	22000		51.9	1000	1	10/18/2019 18:09	WG1365245
Nitrate	473		22.7	100	1	10/18/2019 18:09	WG1365245
Sulfate	120000		387	25000	5	10/19/2019 09:09	WG1365245

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3680	<u>B</u>	102	1000	1	10/22/2019 18:09	WG1367168

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	930		15.0	100	1	10/23/2019 09:24	WG1366327
Manganese	637		0.250	5.00	1	10/23/2019 09:24	WG1366327

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	113	<u>B</u>	31.6	100	1	10/23/2019 17:20	WG1367716
(S) a,a,a-Trifluorotoluene(FID)	103			78.0-120		10/23/2019 17:20	WG1367716

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	43.9		0.287	0.678	1	10/22/2019 05:44	WG1366961
Ethane	U		0.296	1.29	1	10/22/2019 05:44	WG1366961
Ethene	U		0.422	1.27	1	10/22/2019 05:44	WG1366961

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	1.20	<u>J JO</u>	1.05	25.0	1	10/26/2019 01:33	WG1369955
Acrylonitrile	U		0.873	5.00	1	10/26/2019 01:33	WG1369955
Benzene	U		0.0896	0.500	1	10/26/2019 01:33	WG1369955
Bromobenzene	U	<u>JO</u>	0.133	0.500	1	10/26/2019 01:33	WG1369955
Bromodichloromethane	U		0.0800	0.500	1	10/26/2019 01:33	WG1369955
Bromochloromethane	U		0.145	0.500	1	10/26/2019 01:33	WG1369955
Bromoform	U		0.186	0.500	1	10/26/2019 01:33	WG1369955
Bromomethane	U		0.157	2.50	1	10/26/2019 01:33	WG1369955
n-Butylbenzene	U		0.143	0.500	1	10/26/2019 01:33	WG1369955
sec-Butylbenzene	U		0.134	0.500	1	10/26/2019 01:33	WG1369955
tert-Butylbenzene	U		0.183	0.500	1	10/26/2019 01:33	WG1369955
Carbon disulfide	U		0.101	0.500	1	10/26/2019 01:33	WG1369955
Carbon tetrachloride	U		0.159	0.500	1	10/26/2019 01:33	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/26/2019 01:33	WG1369955
Chlorodibromomethane	U		0.128	0.500	1	10/26/2019 01:33	WG1369955
Chloroethane	U		0.141	2.50	1	10/26/2019 01:33	WG1369955
Chloroform	U		0.0860	0.500	1	10/26/2019 01:33	WG1369955
Chloromethane	U	JO	0.153	1.25	1	10/26/2019 01:33	WG1369955
2-Chlorotoluene	U		0.111	0.500	1	10/26/2019 01:33	WG1369955
4-Chlorotoluene	U		0.0972	0.500	1	10/26/2019 01:33	WG1369955
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/26/2019 01:33	WG1369955
1,2-Dibromoethane	U		0.193	0.500	1	10/26/2019 01:33	WG1369955
Dibromomethane	U		0.117	0.500	1	10/26/2019 01:33	WG1369955
1,2-Dichlorobenzene	U		0.101	0.500	1	10/26/2019 01:33	WG1369955
1,3-Dichlorobenzene	U		0.130	0.500	1	10/26/2019 01:33	WG1369955
1,4-Dichlorobenzene	U		0.121	0.500	1	10/26/2019 01:33	WG1369955
Dichlorodifluoromethane	U		0.127	2.50	1	10/26/2019 01:33	WG1369955
1,1-Dichloroethane	1.29		0.114	0.500	1	10/26/2019 01:33	WG1369955
1,2-Dichloroethane	0.485	IL	0.108	0.500	1	10/26/2019 01:33	WG1369955
1,1-Dichloroethene	0.478	IL	0.188	0.500	1	10/26/2019 01:33	WG1369955
cis-1,2-Dichloroethene	49.8		0.0933	0.500	1	10/27/2019 16:09	WG1370146
trans-1,2-Dichloroethene	0.243	IL	0.152	0.500	1	10/26/2019 01:33	WG1369955
1,2-Dichloropropane	U		0.190	0.500	1	10/26/2019 01:33	WG1369955
1,1-Dichloropropene	U		0.128	0.500	1	10/26/2019 01:33	WG1369955
1,3-Dichloropropane	U		0.147	1.00	1	10/26/2019 01:33	WG1369955
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/26/2019 01:33	WG1369955
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/26/2019 01:33	WG1369955
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/26/2019 01:33	WG1369955
2,2-Dichloropropane	U		0.0929	0.500	1	10/26/2019 01:33	WG1369955
Di-isopropyl ether	U		0.0924	0.500	1	10/26/2019 01:33	WG1369955
Ethylbenzene	U		0.158	0.500	1	10/26/2019 01:33	WG1369955
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/26/2019 01:33	WG1369955
2-Hexanone	U		0.757	5.00	1	10/26/2019 01:33	WG1369955
n-Hexane	U		0.305	5.00	1	10/26/2019 01:33	WG1369955
Iodomethane	U		0.377	10.0	1	10/26/2019 01:33	WG1369955
Isopropylbenzene	U		0.126	0.500	1	10/26/2019 01:33	WG1369955
p-Isopropyltoluene	U		0.138	0.500	1	10/26/2019 01:33	WG1369955
2-Butanone (MEK)	U		1.28	5.00	1	10/26/2019 01:33	WG1369955
Methylene Chloride	U		1.07	2.50	1	10/26/2019 01:33	WG1369955
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/26/2019 01:33	WG1369955
Methyl tert-butyl ether	U		0.102	0.500	1	10/26/2019 01:33	WG1369955
Naphthalene	U		0.174	2.50	1	10/26/2019 01:33	WG1369955
n-Propylbenzene	U		0.162	0.500	1	10/26/2019 01:33	WG1369955
Styrene	U		0.117	0.500	1	10/26/2019 01:33	WG1369955
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/26/2019 01:33	WG1369955
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/26/2019 01:33	WG1369955
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/26/2019 01:33	WG1369955
Tetrachloroethene	73.9		0.199	0.500	1	10/26/2019 01:33	WG1369955
Toluene	U		0.412	0.500	1	10/26/2019 01:33	WG1369955
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/26/2019 01:33	WG1369955
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/26/2019 01:33	WG1369955
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/26/2019 01:33	WG1369955
1,1,2-Trichloroethane	U		0.186	0.500	1	10/26/2019 01:33	WG1369955
Trichloroethene	26.9		0.153	0.500	1	10/26/2019 01:33	WG1369955
Trichlorofluoromethane	U		0.130	2.50	1	10/26/2019 01:33	WG1369955
1,2,3-Trichloropropane	U		0.247	2.50	1	10/26/2019 01:33	WG1369955
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/26/2019 01:33	WG1369955
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/26/2019 01:33	WG1369955
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/26/2019 01:33	WG1369955

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/26/2019 01:33	WG1369955
Vinyl chloride	2.25		0.118	0.500	1	10/27/2019 16:09	WG1370146
Xylenes, Total	U		0.316	1.50	1	10/26/2019 01:33	WG1369955
(S) Toluene-d8	112			80.0-120		10/26/2019 01:33	WG1369955
(S) Toluene-d8	92.6			80.0-120		10/27/2019 16:09	WG1370146
(S) 4-Bromofluorobenzene	112			77.0-126		10/26/2019 01:33	WG1369955
(S) 4-Bromofluorobenzene	90.8			77.0-126		10/27/2019 16:09	WG1370146
(S) 1,2-Dichloroethane-d4	109			70.0-130		10/26/2019 01:33	WG1369955
(S) 1,2-Dichloroethane-d4	106			70.0-130		10/27/2019 16:09	WG1370146

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	633000		2710	20000	1	10/23/2019 19:29	WG1367736

Sample Narrative:

L1151401-02 WG1367736: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	46000		51.9	1000	1	10/18/2019 18:26	WG1365245
Nitrate	U		22.7	100	1	10/18/2019 18:26	WG1365245
Sulfate	83300		77.4	5000	1	10/18/2019 18:26	WG1365245

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	19300		102	1000	1	10/22/2019 18:32	WG1367168

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	3440		15.0	100	1	10/23/2019 09:28	WG1366327
Manganese	3830		0.250	5.00	1	10/23/2019 09:28	WG1366327

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	1450	<u>B</u>	316	1000	10	10/23/2019 23:15	WG1367716
(S) a,a,a-Trifluorotoluene(FID)	103			78.0-120		10/23/2019 23:15	WG1367716

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	2490		0.287	0.678	1	10/22/2019 05:47	WG1366961
Ethane	179		0.296	1.29	1	10/22/2019 05:47	WG1366961
Ethene	U		0.422	1.27	1	10/22/2019 05:47	WG1366961

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	12.9	<u>J JO</u>	10.5	250	10	10/26/2019 01:53	WG1369955
Acrylonitrile	U		8.73	50.0	10	10/26/2019 01:53	WG1369955
Benzene	U		0.896	5.00	10	10/26/2019 01:53	WG1369955
Bromobenzene	U	<u>JO</u>	1.33	5.00	10	10/26/2019 01:53	WG1369955
Bromodichloromethane	U		0.800	5.00	10	10/26/2019 01:53	WG1369955
Bromochloromethane	U		1.45	5.00	10	10/26/2019 01:53	WG1369955
Bromoform	U		1.86	5.00	10	10/26/2019 01:53	WG1369955
Bromomethane	U		1.57	25.0	10	10/26/2019 01:53	WG1369955
n-Butylbenzene	U		1.43	5.00	10	10/26/2019 01:53	WG1369955
sec-Butylbenzene	U		1.34	5.00	10	10/26/2019 01:53	WG1369955
tert-Butylbenzene	U		1.83	5.00	10	10/26/2019 01:53	WG1369955
Carbon disulfide	U		1.01	5.00	10	10/26/2019 01:53	WG1369955
Carbon tetrachloride	U		1.59	5.00	10	10/26/2019 01:53	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		1.40	5.00	10	10/26/2019 01:53	WG1369955
Chlorodibromomethane	U		1.28	5.00	10	10/26/2019 01:53	WG1369955
Chloroethane	U		1.41	25.0	10	10/26/2019 01:53	WG1369955
Chloroform	U		0.860	5.00	10	10/26/2019 01:53	WG1369955
Chloromethane	U	JO	1.53	12.5	10	10/26/2019 01:53	WG1369955
2-Chlorotoluene	U		1.11	5.00	10	10/26/2019 01:53	WG1369955
4-Chlorotoluene	U		0.972	5.00	10	10/26/2019 01:53	WG1369955
1,2-Dibromo-3-Chloropropane	U		3.25	25.0	10	10/26/2019 01:53	WG1369955
1,2-Dibromoethane	U		1.93	5.00	10	10/26/2019 01:53	WG1369955
Dibromomethane	U		1.17	5.00	10	10/26/2019 01:53	WG1369955
1,2-Dichlorobenzene	U		1.01	5.00	10	10/26/2019 01:53	WG1369955
1,3-Dichlorobenzene	U		1.30	5.00	10	10/26/2019 01:53	WG1369955
1,4-Dichlorobenzene	U		1.21	5.00	10	10/26/2019 01:53	WG1369955
Dichlorodifluoromethane	U		1.27	25.0	10	10/26/2019 01:53	WG1369955
1,1-Dichloroethane	U		1.14	5.00	10	10/26/2019 01:53	WG1369955
1,2-Dichloroethane	U		1.08	5.00	10	10/26/2019 01:53	WG1369955
1,1-Dichloroethene	6.70		1.88	5.00	10	10/26/2019 01:53	WG1369955
cis-1,2-Dichloroethene	1420		0.933	5.00	10	10/26/2019 01:53	WG1369955
trans-1,2-Dichloroethene	6.04		1.52	5.00	10	10/26/2019 01:53	WG1369955
1,2-Dichloropropane	U		1.90	5.00	10	10/26/2019 01:53	WG1369955
1,1-Dichloropropene	U		1.28	5.00	10	10/26/2019 01:53	WG1369955
1,3-Dichloropropane	U		1.47	10.0	10	10/26/2019 01:53	WG1369955
cis-1,3-Dichloropropene	U		0.976	5.00	10	10/26/2019 01:53	WG1369955
trans-1,3-Dichloropropene	U		2.22	5.00	10	10/26/2019 01:53	WG1369955
trans-1,4-Dichloro-2-butene	U	JO	2.57	50.0	10	10/26/2019 01:53	WG1369955
2,2-Dichloropropane	U		0.929	5.00	10	10/26/2019 01:53	WG1369955
Di-isopropyl ether	U		0.924	5.00	10	10/26/2019 01:53	WG1369955
Ethylbenzene	U		1.58	5.00	10	10/26/2019 01:53	WG1369955
Hexachloro-1,3-butadiene	U		1.57	10.0	10	10/26/2019 01:53	WG1369955
2-Hexanone	U		7.57	50.0	10	10/26/2019 01:53	WG1369955
n-Hexane	U		3.05	50.0	10	10/26/2019 01:53	WG1369955
Iodomethane	U		3.77	100	10	10/26/2019 01:53	WG1369955
Isopropylbenzene	U		1.26	5.00	10	10/26/2019 01:53	WG1369955
p-Isopropyltoluene	U		1.38	5.00	10	10/26/2019 01:53	WG1369955
2-Butanone (MEK)	U		12.8	50.0	10	10/26/2019 01:53	WG1369955
Methylene Chloride	U		10.7	25.0	10	10/26/2019 01:53	WG1369955
4-Methyl-2-pentanone (MIBK)	U		8.23	50.0	10	10/26/2019 01:53	WG1369955
Methyl tert-butyl ether	U		1.02	5.00	10	10/26/2019 01:53	WG1369955
Naphthalene	U		1.74	25.0	10	10/26/2019 01:53	WG1369955
n-Propylbenzene	U		1.62	5.00	10	10/26/2019 01:53	WG1369955
Styrene	U		1.17	5.00	10	10/26/2019 01:53	WG1369955
1,1,1,2-Tetrachloroethane	U		1.20	5.00	10	10/26/2019 01:53	WG1369955
1,1,2,2-Tetrachloroethane	U		1.30	5.00	10	10/26/2019 01:53	WG1369955
1,1,2-Trichlorotrifluoroethane	U		1.64	5.00	10	10/26/2019 01:53	WG1369955
Tetrachloroethene	682		1.99	5.00	10	10/26/2019 01:53	WG1369955
Toluene	U		4.12	5.00	10	10/26/2019 01:53	WG1369955
1,2,3-Trichlorobenzene	U		1.64	5.00	10	10/26/2019 01:53	WG1369955
1,2,4-Trichlorobenzene	U		3.55	5.00	10	10/26/2019 01:53	WG1369955
1,1,1-Trichloroethane	U		0.940	5.00	10	10/26/2019 01:53	WG1369955
1,1,2-Trichloroethane	U		1.86	5.00	10	10/26/2019 01:53	WG1369955
Trichloroethene	430		1.53	5.00	10	10/26/2019 01:53	WG1369955
Trichlorofluoromethane	U		1.30	25.0	10	10/26/2019 01:53	WG1369955
1,2,3-Trichloropropane	U		2.47	25.0	10	10/26/2019 01:53	WG1369955
1,2,4-Trimethylbenzene	1.36	J	1.23	5.00	10	10/26/2019 01:53	WG1369955
1,2,3-Trimethylbenzene	U		0.739	5.00	10	10/26/2019 01:53	WG1369955
1,3,5-Trimethylbenzene	U		1.24	5.00	10	10/26/2019 01:53	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		6.45	50.0	10	10/26/2019 01:53	WG1369955
Vinyl chloride	51.1		1.18	5.00	10	10/26/2019 01:53	WG1369955
Xylenes, Total	U		3.16	15.0	10	10/26/2019 01:53	WG1369955
<i>(S) Toluene-d8</i>	111			80.0-120		10/26/2019 01:53	WG1369955
<i>(S) 4-Bromofluorobenzene</i>	111			77.0-126		10/26/2019 01:53	WG1369955
<i>(S) 1,2-Dichloroethane-d4</i>	108			70.0-130		10/26/2019 01:53	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	612000		2710	20000	1	10/23/2019 19:35	WG1367736

Sample Narrative:

L1151401-03 WG1367736: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	20000		51.9	1000	1	10/18/2019 18:58	WG1365245
Nitrate	U		22.7	100	1	10/18/2019 18:58	WG1365245
Sulfate	U		77.4	5000	1	10/18/2019 18:58	WG1365245

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	4420	<u>B</u>	102	1000	1	10/22/2019 18:51	WG1367168

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	21600		15.0	100	1	10/23/2019 09:31	WG1366327
Manganese	3760		0.250	5.00	1	10/23/2019 09:31	WG1366327

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	62.0	<u>B, J</u>	31.6	100	1	10/23/2019 17:42	WG1367716
(S) a,a,a-Trifluorotoluene(FID)	103			78.0-120		10/23/2019 17:42	WG1367716

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	1770		0.287	0.678	1	10/22/2019 05:51	WG1366961
Ethane	8.51		0.296	1.29	1	10/22/2019 05:51	WG1366961
Ethene	U		0.422	1.27	1	10/22/2019 05:51	WG1366961

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U	<u>JO</u>	1.05	25.0	1	10/26/2019 02:14	WG1369955
Acrylonitrile	U		0.873	5.00	1	10/26/2019 02:14	WG1369955
Benzene	U		0.0896	0.500	1	10/26/2019 02:14	WG1369955
Bromobenzene	U	<u>JO</u>	0.133	0.500	1	10/26/2019 02:14	WG1369955
Bromodichloromethane	U		0.0800	0.500	1	10/26/2019 02:14	WG1369955
Bromochloromethane	U		0.145	0.500	1	10/26/2019 02:14	WG1369955
Bromoform	U		0.186	0.500	1	10/26/2019 02:14	WG1369955
Bromomethane	U		0.157	2.50	1	10/26/2019 02:14	WG1369955
n-Butylbenzene	U		0.143	0.500	1	10/26/2019 02:14	WG1369955
sec-Butylbenzene	U		0.134	0.500	1	10/26/2019 02:14	WG1369955
tert-Butylbenzene	U		0.183	0.500	1	10/26/2019 02:14	WG1369955
Carbon disulfide	U		0.101	0.500	1	10/26/2019 02:14	WG1369955
Carbon tetrachloride	U		0.159	0.500	1	10/26/2019 02:14	WG1369955

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/26/2019 02:14	WG1369955
Chlorodibromomethane	U		0.128	0.500	1	10/26/2019 02:14	WG1369955
Chloroethane	U		0.141	2.50	1	10/26/2019 02:14	WG1369955
Chloroform	U		0.0860	0.500	1	10/26/2019 02:14	WG1369955
Chloromethane	U	JO	0.153	1.25	1	10/26/2019 02:14	WG1369955
2-Chlorotoluene	U		0.111	0.500	1	10/26/2019 02:14	WG1369955
4-Chlorotoluene	U		0.0972	0.500	1	10/26/2019 02:14	WG1369955
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/26/2019 02:14	WG1369955
1,2-Dibromoethane	U		0.193	0.500	1	10/26/2019 02:14	WG1369955
Dibromomethane	U		0.117	0.500	1	10/26/2019 02:14	WG1369955
1,2-Dichlorobenzene	U		0.101	0.500	1	10/26/2019 02:14	WG1369955
1,3-Dichlorobenzene	U		0.130	0.500	1	10/26/2019 02:14	WG1369955
1,4-Dichlorobenzene	U		0.121	0.500	1	10/26/2019 02:14	WG1369955
Dichlorodifluoromethane	U		0.127	2.50	1	10/26/2019 02:14	WG1369955
1,1-Dichloroethane	U		0.114	0.500	1	10/26/2019 02:14	WG1369955
1,2-Dichloroethane	U		0.108	0.500	1	10/26/2019 02:14	WG1369955
1,1-Dichloroethene	U		0.188	0.500	1	10/26/2019 02:14	WG1369955
cis-1,2-Dichloroethene	0.786		0.0933	0.500	1	10/26/2019 02:14	WG1369955
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/26/2019 02:14	WG1369955
1,2-Dichloropropane	U		0.190	0.500	1	10/26/2019 02:14	WG1369955
1,1-Dichloropropene	U		0.128	0.500	1	10/26/2019 02:14	WG1369955
1,3-Dichloropropane	U		0.147	1.00	1	10/26/2019 02:14	WG1369955
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/26/2019 02:14	WG1369955
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/26/2019 02:14	WG1369955
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/26/2019 02:14	WG1369955
2,2-Dichloropropane	U		0.0929	0.500	1	10/26/2019 02:14	WG1369955
Di-isopropyl ether	U		0.0924	0.500	1	10/26/2019 02:14	WG1369955
Ethylbenzene	U		0.158	0.500	1	10/26/2019 02:14	WG1369955
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/26/2019 02:14	WG1369955
2-Hexanone	U		0.757	5.00	1	10/26/2019 02:14	WG1369955
n-Hexane	U		0.305	5.00	1	10/26/2019 02:14	WG1369955
Iodomethane	U		0.377	10.0	1	10/26/2019 02:14	WG1369955
Isopropylbenzene	U		0.126	0.500	1	10/26/2019 02:14	WG1369955
p-Isopropyltoluene	U		0.138	0.500	1	10/26/2019 02:14	WG1369955
2-Butanone (MEK)	U		1.28	5.00	1	10/26/2019 02:14	WG1369955
Methylene Chloride	U		1.07	2.50	1	10/26/2019 02:14	WG1369955
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/26/2019 02:14	WG1369955
Methyl tert-butyl ether	U		0.102	0.500	1	10/26/2019 02:14	WG1369955
Naphthalene	U		0.174	2.50	1	10/26/2019 02:14	WG1369955
n-Propylbenzene	U		0.162	0.500	1	10/26/2019 02:14	WG1369955
Styrene	U		0.117	0.500	1	10/26/2019 02:14	WG1369955
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/26/2019 02:14	WG1369955
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/26/2019 02:14	WG1369955
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/26/2019 02:14	WG1369955
Tetrachloroethene	U		0.199	0.500	1	10/26/2019 02:14	WG1369955
Toluene	U		0.412	0.500	1	10/26/2019 02:14	WG1369955
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/26/2019 02:14	WG1369955
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/26/2019 02:14	WG1369955
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/26/2019 02:14	WG1369955
1,1,2-Trichloroethane	U		0.186	0.500	1	10/26/2019 02:14	WG1369955
Trichloroethene	U		0.153	0.500	1	10/26/2019 02:14	WG1369955
Trichlorofluoromethane	U		0.130	2.50	1	10/26/2019 02:14	WG1369955
1,2,3-Trichloropropane	U		0.247	2.50	1	10/26/2019 02:14	WG1369955
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/26/2019 02:14	WG1369955
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/26/2019 02:14	WG1369955
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/26/2019 02:14	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/26/2019 02:14	WG1369955
Vinyl chloride	0.416	↓	0.118	0.500	1	10/26/2019 02:14	WG1369955
Xylenes, Total	U		0.316	1.50	1	10/26/2019 02:14	WG1369955
(S) Toluene-d8	110			80.0-120		10/26/2019 02:14	WG1369955
(S) 4-Bromofluorobenzene	115			77.0-126		10/26/2019 02:14	WG1369955
(S) 1,2-Dichloroethane-d4	108			70.0-130		10/26/2019 02:14	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	264000		2710	20000	1	10/23/2019 19:42	WG1367736

Sample Narrative:

L1151401-04 WG1367736: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	22000		51.9	1000	1	10/18/2019 19:15	WG1365245
Nitrate	472		22.7	100	1	10/18/2019 19:15	WG1365245
Sulfate	119000		387	25000	5	10/19/2019 09:25	WG1365245

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3640	<u>B</u>	102	1000	1	10/22/2019 19:53	WG1367168

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	937		15.0	100	1	10/23/2019 09:35	WG1366327
Manganese	637		0.250	5.00	1	10/23/2019 09:35	WG1366327

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	106	<u>B</u>	31.6	100	1	10/26/2019 16:56	WG1369652
(S) a,a,a-Trifluorotoluene(FID)	96.8			78.0-120		10/26/2019 16:56	WG1369652

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	86.4		0.287	0.678	1	10/22/2019 06:06	WG1366961
Ethane	U		0.296	1.29	1	10/22/2019 06:06	WG1366961
Ethene	U		0.422	1.27	1	10/22/2019 06:06	WG1366961

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U		1.05	25.0	1	10/27/2019 16:28	WG1370146
Acrylonitrile	U		0.873	5.00	1	10/27/2019 16:28	WG1370146
Benzene	U		0.0896	0.500	1	10/27/2019 16:28	WG1370146
Bromobenzene	U		0.133	0.500	1	10/27/2019 16:28	WG1370146
Bromodichloromethane	U		0.0800	0.500	1	10/27/2019 16:28	WG1370146
Bromochloromethane	U		0.145	0.500	1	10/27/2019 16:28	WG1370146
Bromoform	U		0.186	0.500	1	10/27/2019 16:28	WG1370146
Bromomethane	U	<u>JO</u>	0.157	2.50	1	10/27/2019 16:28	WG1370146
n-Butylbenzene	U		0.143	0.500	1	10/27/2019 16:28	WG1370146
sec-Butylbenzene	U		0.134	0.500	1	10/27/2019 16:28	WG1370146
tert-Butylbenzene	U		0.183	0.500	1	10/27/2019 16:28	WG1370146
Carbon disulfide	U		0.101	0.500	1	10/27/2019 16:28	WG1370146
Carbon tetrachloride	U		0.159	0.500	1	10/27/2019 16:28	WG1370146

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/27/2019 16:28	WG1370146
Chlorodibromomethane	U		0.128	0.500	1	10/27/2019 16:28	WG1370146
Chloroethane	U		0.141	2.50	1	10/27/2019 16:28	WG1370146
Chloroform	U		0.0860	0.500	1	10/27/2019 16:28	WG1370146
Chloromethane	U		0.153	1.25	1	10/27/2019 16:28	WG1370146
2-Chlorotoluene	U		0.111	0.500	1	10/27/2019 16:28	WG1370146
4-Chlorotoluene	U		0.0972	0.500	1	10/27/2019 16:28	WG1370146
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/27/2019 16:28	WG1370146
1,2-Dibromoethane	U		0.193	0.500	1	10/27/2019 16:28	WG1370146
Dibromomethane	U		0.117	0.500	1	10/27/2019 16:28	WG1370146
1,2-Dichlorobenzene	U		0.101	0.500	1	10/27/2019 16:28	WG1370146
1,3-Dichlorobenzene	U		0.130	0.500	1	10/27/2019 16:28	WG1370146
1,4-Dichlorobenzene	U		0.121	0.500	1	10/27/2019 16:28	WG1370146
Dichlorodifluoromethane	U	JO	0.127	2.50	1	10/27/2019 16:28	WG1370146
1,1-Dichloroethane	1.52		0.114	0.500	1	10/27/2019 16:28	WG1370146
1,2-Dichloroethane	0.605		0.108	0.500	1	10/27/2019 16:28	WG1370146
1,1-Dichloroethene	0.552		0.188	0.500	1	10/27/2019 16:28	WG1370146
cis-1,2-Dichloroethene	48.8		0.0933	0.500	1	10/27/2019 16:28	WG1370146
trans-1,2-Dichloroethene	0.220	J	0.152	0.500	1	10/27/2019 16:28	WG1370146
1,2-Dichloropropane	1.12		0.190	0.500	1	10/27/2019 16:28	WG1370146
1,1-Dichloropropene	U		0.128	0.500	1	10/27/2019 16:28	WG1370146
1,3-Dichloropropane	U		0.147	1.00	1	10/27/2019 16:28	WG1370146
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/27/2019 16:28	WG1370146
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/27/2019 16:28	WG1370146
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/27/2019 16:28	WG1370146
2,2-Dichloropropane	U		0.0929	0.500	1	10/27/2019 16:28	WG1370146
Di-isopropyl ether	U		0.0924	0.500	1	10/27/2019 16:28	WG1370146
Ethylbenzene	U		0.158	0.500	1	10/27/2019 16:28	WG1370146
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/27/2019 16:28	WG1370146
2-Hexanone	U		0.757	5.00	1	10/27/2019 16:28	WG1370146
n-Hexane	U		0.305	5.00	1	10/27/2019 16:28	WG1370146
Iodomethane	U	JO	0.377	10.0	1	10/27/2019 16:28	WG1370146
Isopropylbenzene	U		0.126	0.500	1	10/27/2019 16:28	WG1370146
p-Isopropyltoluene	U		0.138	0.500	1	10/27/2019 16:28	WG1370146
2-Butanone (MEK)	U		1.28	5.00	1	10/27/2019 16:28	WG1370146
Methylene Chloride	U		1.07	2.50	1	10/27/2019 16:28	WG1370146
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/27/2019 16:28	WG1370146
Methyl tert-butyl ether	U		0.102	0.500	1	10/27/2019 16:28	WG1370146
Naphthalene	U		0.174	2.50	1	10/27/2019 16:28	WG1370146
n-Propylbenzene	U		0.162	0.500	1	10/27/2019 16:28	WG1370146
Styrene	U		0.117	0.500	1	10/27/2019 16:28	WG1370146
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/27/2019 16:28	WG1370146
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/27/2019 16:28	WG1370146
1,1,2-Trichlorotrifluoroethane	U	JO	0.164	0.500	1	10/27/2019 16:28	WG1370146
Tetrachloroethene	61.5		0.199	0.500	1	10/27/2019 16:28	WG1370146
Toluene	U		0.412	0.500	1	10/27/2019 16:28	WG1370146
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/27/2019 16:28	WG1370146
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/27/2019 16:28	WG1370146
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/27/2019 16:28	WG1370146
1,1,2-Trichloroethane	U		0.186	0.500	1	10/27/2019 16:28	WG1370146
Trichloroethene	22.3		0.153	0.500	1	10/27/2019 16:28	WG1370146
Trichlorofluoromethane	U		0.130	2.50	1	10/27/2019 16:28	WG1370146
1,2,3-Trichloropropane	U		0.247	2.50	1	10/27/2019 16:28	WG1370146
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/27/2019 16:28	WG1370146
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/27/2019 16:28	WG1370146
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/27/2019 16:28	WG1370146

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/27/2019 16:28	WG1370146
Vinyl chloride	2.31		0.118	0.500	1	10/27/2019 16:28	WG1370146
Xylenes, Total	U		0.316	1.50	1	10/27/2019 16:28	WG1370146
<i>(S) Toluene-d8</i>	96.1			80.0-120		10/27/2019 16:28	WG1370146
<i>(S) 4-Bromofluorobenzene</i>	97.0			77.0-126		10/27/2019 16:28	WG1370146
<i>(S) 1,2-Dichloroethane-d4</i>	101			70.0-130		10/27/2019 16:28	WG1370146

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	183000		2710	20000	1	10/23/2019 19:49	WG1367736

Sample Narrative:

L1151401-05 WG1367736: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	8210		51.9	1000	1	10/18/2019 19:31	WG1365245
Nitrate	U		22.7	100	1	10/18/2019 19:31	WG1365245
Sulfate	2060	J	77.4	5000	1	10/18/2019 19:31	WG1365245

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	2310	B	102	1000	1	10/22/2019 20:09	WG1367168

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	10500		15.0	100	1	10/23/2019 09:39	WG1366327
Manganese	522		0.250	5.00	1	10/23/2019 09:39	WG1366327

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/24/2019 19:35	WG1368064
(S) a,a,a-Trifluorotoluene(FID)	97.1			78.0-120		10/24/2019 19:35	WG1368064

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	537		0.287	0.678	1	10/22/2019 06:11	WG1366961
Ethane	U		0.296	1.29	1	10/22/2019 06:11	WG1366961
Ethene	U		0.422	1.27	1	10/22/2019 06:11	WG1366961

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	3.26	J JO	1.05	25.0	1	10/26/2019 02:54	WG1369955
Acrylonitrile	U		0.873	5.00	1	10/26/2019 02:54	WG1369955
Benzene	U		0.0896	0.500	1	10/26/2019 02:54	WG1369955
Bromobenzene	U	JO	0.133	0.500	1	10/26/2019 02:54	WG1369955
Bromodichloromethane	U		0.0800	0.500	1	10/26/2019 02:54	WG1369955
Bromochloromethane	U		0.145	0.500	1	10/26/2019 02:54	WG1369955
Bromoform	U		0.186	0.500	1	10/26/2019 02:54	WG1369955
Bromomethane	U		0.157	2.50	1	10/26/2019 02:54	WG1369955
n-Butylbenzene	U		0.143	0.500	1	10/26/2019 02:54	WG1369955
sec-Butylbenzene	U		0.134	0.500	1	10/26/2019 02:54	WG1369955
tert-Butylbenzene	U		0.183	0.500	1	10/26/2019 02:54	WG1369955
Carbon disulfide	U		0.101	0.500	1	10/26/2019 02:54	WG1369955
Carbon tetrachloride	U		0.159	0.500	1	10/26/2019 02:54	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/26/2019 02:54	WG1369955
Chlorodibromomethane	U		0.128	0.500	1	10/26/2019 02:54	WG1369955
Chloroethane	U		0.141	2.50	1	10/26/2019 02:54	WG1369955
Chloroform	U		0.0860	0.500	1	10/26/2019 02:54	WG1369955
Chloromethane	U	JO	0.153	1.25	1	10/26/2019 02:54	WG1369955
2-Chlorotoluene	U		0.111	0.500	1	10/26/2019 02:54	WG1369955
4-Chlorotoluene	U		0.0972	0.500	1	10/26/2019 02:54	WG1369955
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/26/2019 02:54	WG1369955
1,2-Dibromoethane	U		0.193	0.500	1	10/26/2019 02:54	WG1369955
Dibromomethane	U		0.117	0.500	1	10/26/2019 02:54	WG1369955
1,2-Dichlorobenzene	U		0.101	0.500	1	10/26/2019 02:54	WG1369955
1,3-Dichlorobenzene	U		0.130	0.500	1	10/26/2019 02:54	WG1369955
1,4-Dichlorobenzene	U		0.121	0.500	1	10/26/2019 02:54	WG1369955
Dichlorodifluoromethane	U		0.127	2.50	1	10/26/2019 02:54	WG1369955
1,1-Dichloroethane	U		0.114	0.500	1	10/26/2019 02:54	WG1369955
1,2-Dichloroethane	U		0.108	0.500	1	10/26/2019 02:54	WG1369955
1,1-Dichloroethene	U		0.188	0.500	1	10/26/2019 02:54	WG1369955
cis-1,2-Dichloroethene	0.445	U	0.0933	0.500	1	10/26/2019 02:54	WG1369955
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/26/2019 02:54	WG1369955
1,2-Dichloropropane	U		0.190	0.500	1	10/26/2019 02:54	WG1369955
1,1-Dichloropropene	U		0.128	0.500	1	10/26/2019 02:54	WG1369955
1,3-Dichloropropane	U		0.147	1.00	1	10/26/2019 02:54	WG1369955
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/26/2019 02:54	WG1369955
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/26/2019 02:54	WG1369955
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/26/2019 02:54	WG1369955
2,2-Dichloropropane	U		0.0929	0.500	1	10/26/2019 02:54	WG1369955
Di-isopropyl ether	U		0.0924	0.500	1	10/26/2019 02:54	WG1369955
Ethylbenzene	U		0.158	0.500	1	10/26/2019 02:54	WG1369955
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/26/2019 02:54	WG1369955
2-Hexanone	U		0.757	5.00	1	10/26/2019 02:54	WG1369955
n-Hexane	U		0.305	5.00	1	10/26/2019 02:54	WG1369955
Iodomethane	U		0.377	10.0	1	10/26/2019 02:54	WG1369955
Isopropylbenzene	U		0.126	0.500	1	10/26/2019 02:54	WG1369955
p-Isopropyltoluene	U		0.138	0.500	1	10/26/2019 02:54	WG1369955
2-Butanone (MEK)	U		1.28	5.00	1	10/26/2019 02:54	WG1369955
Methylene Chloride	U		1.07	2.50	1	10/26/2019 02:54	WG1369955
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/26/2019 02:54	WG1369955
Methyl tert-butyl ether	U		0.102	0.500	1	10/26/2019 02:54	WG1369955
Naphthalene	U		0.174	2.50	1	10/26/2019 02:54	WG1369955
n-Propylbenzene	U		0.162	0.500	1	10/26/2019 02:54	WG1369955
Styrene	U		0.117	0.500	1	10/26/2019 02:54	WG1369955
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/26/2019 02:54	WG1369955
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/26/2019 02:54	WG1369955
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/26/2019 02:54	WG1369955
Tetrachloroethene	U		0.199	0.500	1	10/26/2019 02:54	WG1369955
Toluene	U		0.412	0.500	1	10/26/2019 02:54	WG1369955
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/26/2019 02:54	WG1369955
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/26/2019 02:54	WG1369955
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/26/2019 02:54	WG1369955
1,1,2-Trichloroethane	U		0.186	0.500	1	10/26/2019 02:54	WG1369955
Trichloroethene	U		0.153	0.500	1	10/26/2019 02:54	WG1369955
Trichlorofluoromethane	U		0.130	2.50	1	10/26/2019 02:54	WG1369955
1,2,3-Trichloropropane	U		0.247	2.50	1	10/26/2019 02:54	WG1369955
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/26/2019 02:54	WG1369955
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/26/2019 02:54	WG1369955
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/26/2019 02:54	WG1369955

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/26/2019 02:54	WG1369955
Vinyl chloride	U		0.118	0.500	1	10/26/2019 02:54	WG1369955
Xylenes, Total	U		0.316	1.50	1	10/26/2019 02:54	WG1369955
(S) Toluene-d8	113			80.0-120		10/26/2019 02:54	WG1369955
(S) 4-Bromofluorobenzene	112			77.0-126		10/26/2019 02:54	WG1369955
(S) 1,2-Dichloroethane-d4	111			70.0-130		10/26/2019 02:54	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	133000		2710	20000	1	10/23/2019 19:57	WG1367736

Sample Narrative:

L1151401-06 WG1367736: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	27200		51.9	1000	1	10/18/2019 20:21	WG1365245
Nitrate	323		22.7	100	1	10/18/2019 20:21	WG1365245
Sulfate	71600		77.4	5000	1	10/18/2019 20:21	WG1365245

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	1900	<u>B</u>	102	1000	1	10/22/2019 22:04	WG1367168

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	920		15.0	100	1	10/23/2019 09:42	WG1366327
Manganese	161		0.250	5.00	1	10/23/2019 09:42	WG1366327

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/24/2019 19:58	WG1368064
(S) a,a,a-Trifluorotoluene(FID)	96.6			78.0-120		10/24/2019 19:58	WG1368064

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	U		0.287	0.678	1	10/22/2019 06:13	WG1366961
Ethane	U		0.296	1.29	1	10/22/2019 06:13	WG1366961
Ethene	U		0.422	1.27	1	10/22/2019 06:13	WG1366961

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.43	<u>J JO</u>	1.05	25.0	1	10/26/2019 03:15	WG1369955
Acrylonitrile	U		0.873	5.00	1	10/26/2019 03:15	WG1369955
Benzene	U		0.0896	0.500	1	10/26/2019 03:15	WG1369955
Bromobenzene	U	<u>JO</u>	0.133	0.500	1	10/26/2019 03:15	WG1369955
Bromodichloromethane	U		0.0800	0.500	1	10/26/2019 03:15	WG1369955
Bromochloromethane	U		0.145	0.500	1	10/26/2019 03:15	WG1369955
Bromoform	U		0.186	0.500	1	10/26/2019 03:15	WG1369955
Bromomethane	U		0.157	2.50	1	10/26/2019 03:15	WG1369955
n-Butylbenzene	U		0.143	0.500	1	10/26/2019 03:15	WG1369955
sec-Butylbenzene	U		0.134	0.500	1	10/26/2019 03:15	WG1369955
tert-Butylbenzene	U		0.183	0.500	1	10/26/2019 03:15	WG1369955
Carbon disulfide	U		0.101	0.500	1	10/26/2019 03:15	WG1369955
Carbon tetrachloride	U		0.159	0.500	1	10/26/2019 03:15	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/17/19 14:22

L1151401

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/26/2019 03:15	WG1369955
Chlorodibromomethane	U		0.128	0.500	1	10/26/2019 03:15	WG1369955
Chloroethane	U		0.141	2.50	1	10/26/2019 03:15	WG1369955
Chloroform	U		0.0860	0.500	1	10/26/2019 03:15	WG1369955
Chloromethane	U	JO	0.153	1.25	1	10/26/2019 03:15	WG1369955
2-Chlorotoluene	U		0.111	0.500	1	10/26/2019 03:15	WG1369955
4-Chlorotoluene	U		0.0972	0.500	1	10/26/2019 03:15	WG1369955
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/26/2019 03:15	WG1369955
1,2-Dibromoethane	U		0.193	0.500	1	10/26/2019 03:15	WG1369955
Dibromomethane	U		0.117	0.500	1	10/26/2019 03:15	WG1369955
1,2-Dichlorobenzene	U		0.101	0.500	1	10/26/2019 03:15	WG1369955
1,3-Dichlorobenzene	U		0.130	0.500	1	10/26/2019 03:15	WG1369955
1,4-Dichlorobenzene	U		0.121	0.500	1	10/26/2019 03:15	WG1369955
Dichlorodifluoromethane	U		0.127	2.50	1	10/26/2019 03:15	WG1369955
1,1-Dichloroethane	0.547		0.114	0.500	1	10/26/2019 03:15	WG1369955
1,2-Dichloroethane	U		0.108	0.500	1	10/26/2019 03:15	WG1369955
1,1-Dichloroethene	U		0.188	0.500	1	10/26/2019 03:15	WG1369955
cis-1,2-Dichloroethene	0.656		0.0933	0.500	1	10/26/2019 03:15	WG1369955
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/26/2019 03:15	WG1369955
1,2-Dichloropropane	U		0.190	0.500	1	10/26/2019 03:15	WG1369955
1,1-Dichloropropene	U		0.128	0.500	1	10/26/2019 03:15	WG1369955
1,3-Dichloropropane	U		0.147	1.00	1	10/26/2019 03:15	WG1369955
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/26/2019 03:15	WG1369955
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/26/2019 03:15	WG1369955
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/26/2019 03:15	WG1369955
2,2-Dichloropropane	U		0.0929	0.500	1	10/26/2019 03:15	WG1369955
Di-isopropyl ether	U		0.0924	0.500	1	10/26/2019 03:15	WG1369955
Ethylbenzene	U		0.158	0.500	1	10/26/2019 03:15	WG1369955
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/26/2019 03:15	WG1369955
2-Hexanone	U		0.757	5.00	1	10/26/2019 03:15	WG1369955
n-Hexane	U		0.305	5.00	1	10/26/2019 03:15	WG1369955
Iodomethane	U		0.377	10.0	1	10/26/2019 03:15	WG1369955
Isopropylbenzene	U		0.126	0.500	1	10/26/2019 03:15	WG1369955
p-Isopropyltoluene	U		0.138	0.500	1	10/26/2019 03:15	WG1369955
2-Butanone (MEK)	U		1.28	5.00	1	10/26/2019 03:15	WG1369955
Methylene Chloride	U		1.07	2.50	1	10/26/2019 03:15	WG1369955
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/26/2019 03:15	WG1369955
Methyl tert-butyl ether	U		0.102	0.500	1	10/26/2019 03:15	WG1369955
Naphthalene	U		0.174	2.50	1	10/26/2019 03:15	WG1369955
n-Propylbenzene	U		0.162	0.500	1	10/26/2019 03:15	WG1369955
Styrene	U		0.117	0.500	1	10/26/2019 03:15	WG1369955
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/26/2019 03:15	WG1369955
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/26/2019 03:15	WG1369955
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/26/2019 03:15	WG1369955
Tetrachloroethene	U		0.199	0.500	1	10/26/2019 03:15	WG1369955
Toluene	U		0.412	0.500	1	10/26/2019 03:15	WG1369955
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/26/2019 03:15	WG1369955
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/26/2019 03:15	WG1369955
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/26/2019 03:15	WG1369955
1,1,2-Trichloroethane	U		0.186	0.500	1	10/26/2019 03:15	WG1369955
Trichloroethene	U		0.153	0.500	1	10/26/2019 03:15	WG1369955
Trichlorofluoromethane	U		0.130	2.50	1	10/26/2019 03:15	WG1369955
1,2,3-Trichloropropane	U		0.247	2.50	1	10/26/2019 03:15	WG1369955
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/26/2019 03:15	WG1369955
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/26/2019 03:15	WG1369955
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/26/2019 03:15	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/26/2019 03:15	WG1369955
Vinyl chloride	U		0.118	0.500	1	10/26/2019 03:15	WG1369955
Xylenes, Total	U		0.316	1.50	1	10/26/2019 03:15	WG1369955
<i>(S) Toluene-d8</i>	112			80.0-120		10/26/2019 03:15	WG1369955
<i>(S) 4-Bromofluorobenzene</i>	112			77.0-126		10/26/2019 03:15	WG1369955
<i>(S) 1,2-Dichloroethane-d4</i>	112			70.0-130		10/26/2019 03:15	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/17/19 00:00

L1151401

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/24/2019 18:47	WG1368064
(S) a,a,a-Trifluorotoluene(FID)	96.7			78.0-120		10/24/2019 18:47	WG1368064

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	1.82	<u>J JO</u>	1.05	25.0	1	10/25/2019 21:50	WG1369955
Acrylonitrile	U		0.873	5.00	1	10/25/2019 21:50	WG1369955
Benzene	U		0.0896	0.500	1	10/25/2019 21:50	WG1369955
Bromobenzene	U	<u>JO</u>	0.133	0.500	1	10/25/2019 21:50	WG1369955
Bromodichloromethane	U		0.0800	0.500	1	10/25/2019 21:50	WG1369955
Bromochloromethane	U		0.145	0.500	1	10/25/2019 21:50	WG1369955
Bromoform	U		0.186	0.500	1	10/25/2019 21:50	WG1369955
Bromomethane	U		0.157	2.50	1	10/25/2019 21:50	WG1369955
n-Butylbenzene	U		0.143	0.500	1	10/25/2019 21:50	WG1369955
sec-Butylbenzene	U		0.134	0.500	1	10/25/2019 21:50	WG1369955
tert-Butylbenzene	U		0.183	0.500	1	10/25/2019 21:50	WG1369955
Carbon disulfide	0.167	<u>J</u>	0.101	0.500	1	10/25/2019 21:50	WG1369955
Carbon tetrachloride	U		0.159	0.500	1	10/25/2019 21:50	WG1369955
Chlorobenzene	U		0.140	0.500	1	10/25/2019 21:50	WG1369955
Chlorodibromomethane	U		0.128	0.500	1	10/25/2019 21:50	WG1369955
Chloroethane	U		0.141	2.50	1	10/25/2019 21:50	WG1369955
Chloroform	U		0.0860	0.500	1	10/25/2019 21:50	WG1369955
Chloromethane	U	<u>JO</u>	0.153	1.25	1	10/25/2019 21:50	WG1369955
2-Chlorotoluene	U		0.111	0.500	1	10/25/2019 21:50	WG1369955
4-Chlorotoluene	U		0.0972	0.500	1	10/25/2019 21:50	WG1369955
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/25/2019 21:50	WG1369955
1,2-Dibromoethane	U		0.193	0.500	1	10/25/2019 21:50	WG1369955
Dibromomethane	U		0.117	0.500	1	10/25/2019 21:50	WG1369955
1,2-Dichlorobenzene	U		0.101	0.500	1	10/25/2019 21:50	WG1369955
1,3-Dichlorobenzene	U		0.130	0.500	1	10/25/2019 21:50	WG1369955
1,4-Dichlorobenzene	U		0.121	0.500	1	10/25/2019 21:50	WG1369955
Dichlorodifluoromethane	U		0.127	2.50	1	10/25/2019 21:50	WG1369955
1,1-Dichloroethane	U		0.114	0.500	1	10/25/2019 21:50	WG1369955
1,2-Dichloroethane	U		0.108	0.500	1	10/25/2019 21:50	WG1369955
1,1-Dichloroethene	U		0.188	0.500	1	10/25/2019 21:50	WG1369955
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/25/2019 21:50	WG1369955
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/25/2019 21:50	WG1369955
1,2-Dichloropropane	U		0.190	0.500	1	10/25/2019 21:50	WG1369955
1,1-Dichloropropene	U		0.128	0.500	1	10/25/2019 21:50	WG1369955
1,3-Dichloropropane	U		0.147	1.00	1	10/25/2019 21:50	WG1369955
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/25/2019 21:50	WG1369955
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/25/2019 21:50	WG1369955
trans-1,4-Dichloro-2-butene	U	<u>JO</u>	0.257	5.00	1	10/25/2019 21:50	WG1369955
2,2-Dichloropropane	U		0.0929	0.500	1	10/25/2019 21:50	WG1369955
Di-isopropyl ether	U		0.0924	0.500	1	10/25/2019 21:50	WG1369955
Ethylbenzene	U		0.158	0.500	1	10/25/2019 21:50	WG1369955
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/25/2019 21:50	WG1369955
2-Hexanone	U		0.757	5.00	1	10/25/2019 21:50	WG1369955
n-Hexane	U		0.305	5.00	1	10/25/2019 21:50	WG1369955
Iodomethane	U		0.377	10.0	1	10/25/2019 21:50	WG1369955
Isopropylbenzene	U		0.126	0.500	1	10/25/2019 21:50	WG1369955
p-Isopropyltoluene	U		0.138	0.500	1	10/25/2019 21:50	WG1369955
2-Butanone (MEK)	U		1.28	5.00	1	10/25/2019 21:50	WG1369955



Collected date/time: 10/17/19 00:00

L1151401

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methylene Chloride	U		1.07	2.50	1	10/25/2019 21:50	WG1369955
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/25/2019 21:50	WG1369955
Methyl tert-butyl ether	U		0.102	0.500	1	10/25/2019 21:50	WG1369955
Naphthalene	U		0.174	2.50	1	10/25/2019 21:50	WG1369955
n-Propylbenzene	U		0.162	0.500	1	10/25/2019 21:50	WG1369955
Styrene	U		0.117	0.500	1	10/25/2019 21:50	WG1369955
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/25/2019 21:50	WG1369955
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/25/2019 21:50	WG1369955
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/25/2019 21:50	WG1369955
Tetrachloroethene	U		0.199	0.500	1	10/25/2019 21:50	WG1369955
Toluene	U		0.412	0.500	1	10/25/2019 21:50	WG1369955
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/25/2019 21:50	WG1369955
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/25/2019 21:50	WG1369955
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/25/2019 21:50	WG1369955
1,1,2-Trichloroethane	U		0.186	0.500	1	10/25/2019 21:50	WG1369955
Trichloroethene	U		0.153	0.500	1	10/25/2019 21:50	WG1369955
Trichlorofluoromethane	U		0.130	2.50	1	10/25/2019 21:50	WG1369955
1,2,3-Trichloropropane	U		0.247	2.50	1	10/25/2019 21:50	WG1369955
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/25/2019 21:50	WG1369955
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/25/2019 21:50	WG1369955
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/25/2019 21:50	WG1369955
Vinyl acetate	U		0.645	5.00	1	10/25/2019 21:50	WG1369955
Vinyl chloride	U		0.118	0.500	1	10/25/2019 21:50	WG1369955
Xylenes, Total	U		0.316	1.50	1	10/25/2019 21:50	WG1369955
(S) Toluene-d8	111			80.0-120		10/25/2019 21:50	WG1369955
(S) 4-Bromofluorobenzene	111			77.0-126		10/25/2019 21:50	WG1369955
(S) 1,2-Dichloroethane-d4	103			70.0-130		10/25/2019 21:50	WG1369955

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3464297-1 10/23/19 17:06

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	4070	↓	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1151324-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1151324-01 10/23/19 18:10 • (DUP) R3464297-3 10/23/19 18:19

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	33800	33900	1	0.182		20

Sample Narrative:

OS: Endpoint pH 4.5 HEADSPACE

DUP: Endpoint pH 4.5

L1151411-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1151411-01 10/23/19 20:20 • (DUP) R3464297-6 10/23/19 20:28

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	254000	255000	1	0.300		20

Sample Narrative:

OS: Endpoint pH 4.5 HEADSPACE

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3464297-5 10/23/19 18:45

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	101000	101	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3462678-1 10/18/19 10:14

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	U		51.9	1000
Nitrate	U		22.7	100
Sulfate	U		77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1151341-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1151341-01 10/18/19 15:58 • (DUP) R3462678-3 10/18/19 16:14

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	27100	27200	1	0.121		15
Nitrate	ND	0.000	1	0.000		15
Sulfate	13700	13700	1	0.281		15

L1151425-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1151425-03 10/18/19 20:53 • (DUP) R3462678-6 10/18/19 21:10

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	4080	4020	1	1.56		15
Nitrate	389	384	1	1.40		15
Sulfate	1640	1640	1	0.189	↓	15

Laboratory Control Sample (LCS)

(LCS) R3462678-2 10/18/19 10:30

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Chloride	40000	38500	96.2	80.0-120	
Nitrate	8000	7800	97.5	80.0-120	
Sulfate	40000	39000	97.6	80.0-120	



L1151343-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1151343-01 10/18/19 17:04 • (MS) R3462678-4 10/18/19 17:20 • (MSD) R3462678-5 10/18/19 17:36

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	49200	97300	97200	96.2	96.1	1	80.0-120			0.0394	15
Nitrate	5000	364	5380	5450	100	102	1	80.0-120			1.17	15
Sulfate	50000	49900	97300	96700	94.8	93.5	1	80.0-120			0.648	15

L1151431-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1151431-01 10/18/19 21:59 • (MS) R3462678-7 10/18/19 22:15

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	2100	51900	99.7	1	80.0-120	
Nitrate	5000	313	5360	101	1	80.0-120	
Sulfate	50000	9720	58800	98.1	1	80.0-120	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3464154-1 10/22/19 12:38

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	655	↓	102	1000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

L1151401-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1151401-05 10/22/19 20:09 • (DUP) R3464154-6 10/22/19 20:28

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	2310	2310	1	0.0433		20

L1151201-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1151201-07 10/23/19 12:52 • (DUP) R3464154-9 10/23/19 13:13

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	2350000	2460000	50	4.24		20

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS)

(LCS) R3464154-2 10/22/19 13:23

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC (Total Organic Carbon)	75000	65900	87.9	85.0-115	

L1151401-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1151401-03 10/22/19 18:51 • (MS) R3464154-4 10/22/19 19:14 • (MSD) R3464154-5 10/22/19 19:36

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	4420	52000	54900	95.2	101	1	80.0-120			5.46	20

L1151445-14 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1151445-14 10/23/19 09:17 • (MS) R3464154-7 10/23/19 09:38 • (MSD) R3464154-8 10/23/19 10:00

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	1130	49100	50800	95.9	99.3	1	80.0-120			3.37	20



Method Blank (MB)

(MB) R3463934-1 10/23/19 08:40

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Iron	U		15.0	100
Manganese	1.67	J	0.250	5.00

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3463934-2 10/23/19 08:44 • (LCSD) R3463934-3 10/23/19 08:47

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Iron	5000	5150	5280	103	106	80.0-120			2.59	20
Manganese	50.0	51.9	58.6	104	117	80.0-120			12.1	20

5 Sr

6 Qc

L1151538-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1151538-01 10/23/19 08:51 • (MS) R3463934-5 10/23/19 08:58 • (MSD) R3463934-6 10/23/19 09:02

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Iron	5000	U	4980	4850	99.5	97.0	1	75.0-125			2.51	20
Manganese	50.0	0.699	50.5	48.9	99.6	96.3	1	75.0-125			3.28	20

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3465055-2 10/23/19 15:50

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	75.8	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	103			78.0-120

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS)

(LCS) R3465055-1 10/23/19 15:06

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5700	104	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			99.3	78.0-120	

L1151770-16 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1151770-16 10/23/19 22:31 • (MS) R3465055-3 10/23/19 23:38 • (MSD) R3465055-4 10/24/19 00:00

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	ND	6580	5030	118	90.1	1	10.0-155		J3	26.7	21
(S) a,a,a-Trifluorotoluene(FID)					107	104		78.0-120				



Method Blank (MB)

(MB) R3464797-2 10/24/19 15:39

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	96.4			78.0-120

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS)

(LCS) R3464797-1 10/24/19 14:52

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5930	108	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			105	78.0-120	

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3465433-5 10/26/19 12:34

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	42.4	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	96.5			78.0-120

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3465433-3 10/26/19 11:33 • (LCSD) R3465433-4 10/26/19 11:53

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	6070	6080	110	111	70.0-124			0.165	20
(S) a,a,a-Trifluorotoluene(FID)				111	112	78.0-120				

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3463455-1 10/22/19 05:14

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1151856-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1151856-01 10/22/19 05:19 • (DUP) R3463455-2 10/22/19 06:08

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	ND	0.000	1	0.000		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

L1151877-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1151877-02 10/22/19 07:26 • (DUP) R3463455-3 10/22/19 07:31

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	U	0.000	1	0.000		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3463455-4 10/22/19 07:34 • (LCSD) R3463455-5 10/22/19 07:37

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	70.4	73.0	104	108	85.0-115			3.61	20
Ethane	129	127	128	98.2	99.5	85.0-115			1.29	20
Ethene	127	133	133	104	105	85.0-115			0.727	20



Method Blank (MB)

(MB) R3465284-3 10/25/19 21:00

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3465284-3 10/25/19 21:00

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	0.238	U	0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,2,4-Trimethylbenzene	U		0.123	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	113			80.0-120
(S) 4-Bromofluorobenzene	114			77.0-126
(S) 1,2-Dichloroethane-d4	102			70.0-130

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Laboratory Control Sample (LCS)

(LCS) R3465284-1 10/25/19 19:59

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Acetone	125	94.6	75.7	19.0-160	
Acrylonitrile	125	128	102	55.0-149	
Benzene	25.0	23.6	94.4	70.0-123	
Bromobenzene	25.0	20.2	80.8	73.0-121	
Bromodichloromethane	25.0	25.0	100	75.0-120	
Bromochloromethane	25.0	27.5	110	76.0-122	
Bromoform	25.0	30.8	123	68.0-132	
Bromomethane	25.0	26.6	106	10.0-160	
n-Butylbenzene	25.0	22.6	90.4	73.0-125	
sec-Butylbenzene	25.0	22.5	90.0	75.0-125	
tert-Butylbenzene	25.0	24.8	99.2	76.0-124	
Carbon disulfide	25.0	23.7	94.8	61.0-128	
Carbon tetrachloride	25.0	29.8	119	68.0-126	
Chlorobenzene	25.0	26.6	106	80.0-121	
Chlorodibromomethane	25.0	30.2	121	77.0-125	
Chloroethane	25.0	25.9	104	47.0-150	
Chloroform	25.0	23.2	92.8	73.0-120	
Chloromethane	25.0	21.7	86.8	41.0-142	
2-Chlorotoluene	25.0	21.7	86.8	76.0-123	
4-Chlorotoluene	25.0	21.9	87.6	75.0-122	
1,2-Dibromo-3-Chloropropane	25.0	26.6	106	58.0-134	
1,2-Dibromoethane	25.0	25.7	103	80.0-122	
Dibromomethane	25.0	25.7	103	80.0-120	
1,2-Dichlorobenzene	25.0	26.6	106	79.0-121	
1,3-Dichlorobenzene	25.0	25.6	102	79.0-120	
1,4-Dichlorobenzene	25.0	23.7	94.8	79.0-120	
trans-1,4-Dichloro-2-butene	25.0	18.8	75.2	33.0-144	
Dichlorodifluoromethane	25.0	22.3	89.2	51.0-149	
1,1-Dichloroethane	25.0	24.4	97.6	70.0-126	
1,2-Dichloroethane	25.0	23.8	95.2	70.0-128	
1,1-Dichloroethene	25.0	26.6	106	71.0-124	
cis-1,2-Dichloroethene	25.0	25.5	102	73.0-120	
trans-1,2-Dichloroethene	25.0	25.6	102	73.0-120	
1,2-Dichloropropane	25.0	23.7	94.8	77.0-125	
1,1-Dichloropropene	25.0	25.3	101	74.0-126	
1,3-Dichloropropane	25.0	24.5	98.0	80.0-120	
cis-1,3-Dichloropropene	25.0	25.2	101	80.0-123	
trans-1,3-Dichloropropene	25.0	25.9	104	78.0-124	
2,2-Dichloropropane	25.0	26.8	107	58.0-130	
Di-isopropyl ether	25.0	25.1	100	58.0-138	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3465284-1 10/25/19 19:59

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Ethylbenzene	25.0	25.7	103	79.0-123	
Hexachloro-1,3-butadiene	25.0	25.6	102	54.0-138	
2-Hexanone	125	132	106	67.0-149	
n-Hexane	25.0	23.9	95.6	57.0-133	
Iodomethane	125	145	116	33.0-147	
Isopropylbenzene	25.0	28.4	114	76.0-127	
p-Isopropyltoluene	25.0	24.2	96.8	76.0-125	
2-Butanone (MEK)	125	119	95.2	44.0-160	
Methylene Chloride	25.0	23.2	92.8	67.0-120	
4-Methyl-2-pentanone (MIBK)	125	133	106	68.0-142	
Methyl tert-butyl ether	25.0	26.0	104	68.0-125	
Naphthalene	25.0	25.7	103	54.0-135	
n-Propylbenzene	25.0	22.0	88.0	77.0-124	
Styrene	25.0	28.2	113	73.0-130	
1,1,1,2-Tetrachloroethane	25.0	30.2	121	75.0-125	
1,1,2,2-Tetrachloroethane	25.0	20.9	83.6	65.0-130	
Tetrachloroethene	25.0	29.2	117	72.0-132	
Toluene	25.0	25.2	101	79.0-120	
1,1,2-Trichlorotrifluoroethane	25.0	27.8	111	69.0-132	
1,2,3-Trichlorobenzene	25.0	27.0	108	50.0-138	
1,2,4-Trichlorobenzene	25.0	26.3	105	57.0-137	
1,1,1-Trichloroethane	25.0	28.2	113	73.0-124	
1,1,2-Trichloroethane	25.0	25.8	103	80.0-120	
Trichloroethene	25.0	28.0	112	78.0-124	
Trichlorofluoromethane	25.0	27.9	112	59.0-147	
1,2,3-Trichloropropane	25.0	22.6	90.4	73.0-130	
1,2,3-Trimethylbenzene	25.0	22.7	90.8	77.0-120	
1,2,4-Trimethylbenzene	25.0	22.3	89.2	76.0-121	
1,3,5-Trimethylbenzene	25.0	23.0	92.0	76.0-122	
Vinyl acetate	125	134	107	11.0-160	
Vinyl chloride	25.0	26.1	104	67.0-131	
Xylenes, Total	75.0	80.7	108	79.0-123	
(S) Toluene-d8			112	80.0-120	
(S) 4-Bromofluorobenzene			109	77.0-126	
(S) 1,2-Dichloroethane-d4			107	70.0-130	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3465605-3 10/27/19 09:18

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	1.11	U	1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3465605-3 10/27/19 09:18

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	0.970	U	0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	0.374	U	0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	96.6			80.0-120
(S) 4-Bromofluorobenzene	92.5			77.0-126
(S) 1,2-Dichloroethane-d4	102			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3465605-1 10/27/19 08:19 • (LCSD) R3465605-2 10/27/19 08:38

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	125	142	142	114	114	19.0-160			0.000	27
Acrylonitrile	125	171	164	137	131	55.0-149			4.18	20
Benzene	25.0	22.8	22.8	91.2	91.2	70.0-123			0.000	20
Bromobenzene	25.0	27.0	26.2	108	105	73.0-121			3.01	20
Bromodichloromethane	25.0	22.4	22.2	89.6	88.8	75.0-120			0.897	20
Bromochloromethane	25.0	25.7	25.3	103	101	76.0-122			1.57	20
Bromoform	25.0	24.1	21.5	96.4	86.0	68.0-132			11.4	20
Bromomethane	25.0	13.5	12.5	54.0	50.0	10.0-160			7.69	25
n-Butylbenzene	25.0	26.7	26.1	107	104	73.0-125			2.27	20
sec-Butylbenzene	25.0	25.0	24.2	100	96.8	75.0-125			3.25	20
tert-Butylbenzene	25.0	23.4	22.9	93.6	91.6	76.0-124			2.16	20
Carbon disulfide	25.0	20.4	20.6	81.6	82.4	61.0-128			0.976	20
Carbon tetrachloride	25.0	20.3	20.7	81.2	82.8	68.0-126			1.95	20
Chlorobenzene	25.0	23.7	22.2	94.8	88.8	80.0-121			6.54	20
Chlorodibromomethane	25.0	24.6	22.8	98.4	91.2	77.0-125			7.59	20
Chloroethane	25.0	25.8	26.5	103	106	47.0-150			2.68	20
Chloroform	25.0	22.0	22.0	88.0	88.0	73.0-120			0.000	20
Chloromethane	25.0	22.6	22.4	90.4	89.6	41.0-142			0.889	20
2-Chlorotoluene	25.0	26.3	25.1	105	100	76.0-123			4.67	20
4-Chlorotoluene	25.0	25.5	25.0	102	100	75.0-122			1.98	20
1,2-Dibromo-3-Chloropropane	25.0	24.8	23.2	99.2	92.8	58.0-134			6.67	20
1,2-Dibromoethane	25.0	25.5	23.2	102	92.8	80.0-122			9.45	20
Dibromomethane	25.0	25.9	25.4	104	102	80.0-120			1.95	20
1,2-Dichlorobenzene	25.0	27.2	26.4	109	106	79.0-121			2.99	20
1,3-Dichlorobenzene	25.0	27.3	26.5	109	106	79.0-120			2.97	20
1,4-Dichlorobenzene	25.0	26.2	25.8	105	103	79.0-120			1.54	20
Dichlorodifluoromethane	25.0	16.5	16.9	66.0	67.6	51.0-149			2.40	20
1,1-Dichloroethane	25.0	27.1	26.8	108	107	70.0-126			1.11	20
1,2-Dichloroethane	25.0	27.8	27.1	111	108	70.0-128			2.55	20
1,1-Dichloroethene	25.0	23.2	22.9	92.8	91.6	71.0-124			1.30	20
cis-1,2-Dichloroethene	25.0	23.1	22.9	92.4	91.6	73.0-120			0.870	20
trans-1,2-Dichloroethene	25.0	21.3	21.7	85.2	86.8	73.0-120			1.86	20
1,2-Dichloropropane	25.0	28.5	28.3	114	113	77.0-125			0.704	20
1,1-Dichloropropene	25.0	23.0	23.0	92.0	92.0	74.0-126			0.000	20
1,3-Dichloropropane	25.0	27.1	24.8	108	99.2	80.0-120			8.86	20
cis-1,3-Dichloropropene	25.0	23.5	22.9	94.0	91.6	80.0-123			2.59	20
trans-1,3-Dichloropropene	25.0	26.1	23.9	104	95.6	78.0-124			8.80	20
trans-1,4-Dichloro-2-butene	25.0	32.2	30.4	129	122	33.0-144			5.75	20
2,2-Dichloropropane	25.0	21.0	20.5	84.0	82.0	58.0-130			2.41	20
Di-isopropyl ether	25.0	29.2	28.5	117	114	58.0-138			2.43	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3465605-1 10/27/19 08:19 • (LCSD) R3465605-2 10/27/19 08:38

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethylbenzene	25.0	22.4	20.4	89.6	81.6	79.0-123			9.35	20
Hexachloro-1,3-butadiene	25.0	28.1	28.8	112	115	54.0-138			2.46	20
2-Hexanone	125	179	165	143	132	67.0-149			8.14	20
n-Hexane	25.0	24.9	25.9	99.6	104	57.0-133			3.94	20
Iodomethane	125	79.6	92.5	63.7	74.0	33.0-147			15.0	26
Isopropylbenzene	25.0	21.1	20.1	84.4	80.4	76.0-127			4.85	20
p-Isopropyltoluene	25.0	25.2	25.0	101	100	76.0-125			0.797	20
2-Butanone (MEK)	125	145	141	116	113	44.0-160			2.80	20
Methylene Chloride	25.0	21.6	21.6	86.4	86.4	67.0-120			0.000	20
4-Methyl-2-pentanone (MIBK)	125	151	137	121	110	68.0-142			9.72	20
Methyl tert-butyl ether	25.0	24.2	23.5	96.8	94.0	68.0-125			2.94	20
Naphthalene	25.0	22.4	22.5	89.6	90.0	54.0-135			0.445	20
n-Propylbenzene	25.0	24.0	23.7	96.0	94.8	77.0-124			1.26	20
Styrene	25.0	23.1	22.4	92.4	89.6	73.0-130			3.08	20
1,1,1,2-Tetrachloroethane	25.0	23.9	21.7	95.6	86.8	75.0-125			9.65	20
1,1,2,2-Tetrachloroethane	25.0	25.8	23.5	103	94.0	65.0-130			9.33	20
1,1,2-Trichlorotrifluoroethane	25.0	18.1	19.2	72.4	76.8	69.0-132			5.90	20
Tetrachloroethene	25.0	22.6	21.2	90.4	84.8	72.0-132			6.39	20
Toluene	25.0	23.7	22.4	94.8	89.6	79.0-120			5.64	20
1,2,3-Trichlorobenzene	25.0	25.8	26.1	103	104	50.0-138			1.16	20
1,2,4-Trichlorobenzene	25.0	26.9	27.0	108	108	57.0-137			0.371	20
1,1,1-Trichloroethane	25.0	21.2	20.8	84.8	83.2	73.0-124			1.90	20
1,1,2-Trichloroethane	25.0	24.4	22.2	97.6	88.8	80.0-120			9.44	20
Trichloroethene	25.0	22.2	21.6	88.8	86.4	78.0-124			2.74	20
Trichlorofluoromethane	25.0	23.5	23.8	94.0	95.2	59.0-147			1.27	20
1,2,3-Trichloropropane	25.0	27.3	26.5	109	106	73.0-130			2.97	20
1,2,4-Trimethylbenzene	25.0	25.0	24.1	100	96.4	76.0-121			3.67	20
1,2,3-Trimethylbenzene	25.0	25.7	25.2	103	101	77.0-120			1.96	20
1,3,5-Trimethylbenzene	25.0	23.4	22.8	93.6	91.2	76.0-122			2.60	20
Vinyl acetate	125	117	106	93.6	84.8	11.0-160			9.87	20
Vinyl chloride	25.0	29.8	30.8	119	123	67.0-131			3.30	20
Xylenes, Total	75.0	67.3	63.1	89.7	84.1	79.0-123			6.44	20
(S) Toluene-d8				97.5	92.4	80.0-120				
(S) 4-Bromofluorobenzene				96.1	91.1	77.0-126				
(S) 1,2-Dichloroethane-d4				101	103	70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration method criteria.
J3	The associated batch QC was outside the established quality control range for precision.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

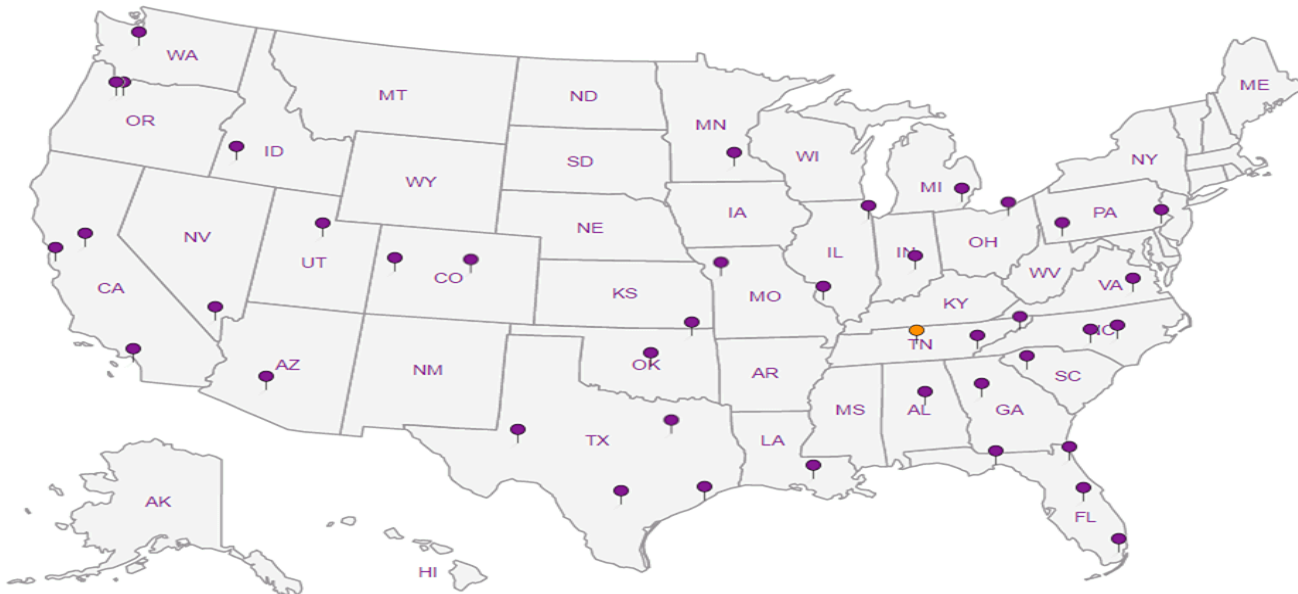
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



PES-Seattle
 Billing Information: PES-Seattle
 Chain of Custody Page 1 of 1
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Report to: Bill Haldeman/Brian O'neal
 Email To: on file
 Project Description: AMERICAN LINEN
 City/State: Seattle, WA
 Collected: [blank]

Phone: on file
 Client Project #: 1413.001.02.501E
 Lab Project #: PESENVSWA-ALP
 Collected by (print): K. ZYGAS
 Site/Facility ID #: 1413.001.02.501E
 P.O. #: [blank]

Collected by (signature): [Signature]
 Rush? (Lab MUST Be Notified)
 ___ Same Day ___ Five Day
 ___ Next Day ___ 5 Day (Rad Only)
 ___ Two Day ___ 10 Day (Rad Only)
 ___ Three Day
 Quote #: [blank]
 Date Results Needed: [blank]
 No. of Cntrs: [blank]

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	**NO3, SO4, Chloride**	48 hour hold	NWTPHGX	VOCs (V8260LLC)	Total Fe Mn 6020	TOC	Alkalinity	EEM (RSK175LL)
MW-918-10179	GRAB	GW	45	10/17/19	0830	12	X	X	X	X	X	X	X	X
MW-150-101719		GW	45		0940	12	X	X	X	X	X	X	X	X
MW-9-101719		GW	21		1020	12	X	X	X	X	X	X	X	X
MW120-101719		GW	45		1235	12	X	X	X	X	X	X	X	X
MW-160-101719		GW	123		1245	12	X	X	X	X	X	X	X	X
MW-127-101719	↓	GW	45		1422	12	X	X	X	X	X	X	X	X
TRIPBLANK-101719	—	GW	—	10/17/19	—	1	X	X	X	X	X	X	X	X
		GW												
		GW												
		GW												

* Matrix: SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other
 Remarks: [blank]
 Samples returned via: ___ UPS ___ FedEx ___ Courier ___
 Tracking # 127586008043
 pH ___ Temp ___
 Flow ___ Other ___
 Sample Receipt Checklist
 COC Seal Present/Intact: Y N
 COC Signed/Accurate: Y N
 Bottles arrive intact: Y N
 Correct bottles used: Y N
 Sufficient volume sent: Y N
 If Applicable
 VOA Zero Headspace: Y N
 Preservation Correct/Checked: Y N
 RAD SCREEN: <0.5 mR/hr

Relinquished by: (Signature) [Signature] Date: 10/17/19 Time: 1600
 Received by: (Signature) [Signature] Trip Blank Received: Yes/No [1] HCL / MeOH TBR
 Temp: °C 57.2-55.1 Bottles Received: 72
 If preservation required by Login: Date/Time
 Relinquished by: (Signature) [Signature] Date: 10/18/19 Time: 9:00
 Received for lab by: (Signature) [Signature] Date: 10/18/19 Time: 9:00
 Hold: [blank] Condition: NCF (OK)



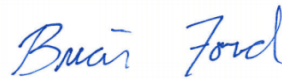
L# L1191401
 Tab D107
 Acctnum: PESENVSWA
 Template: [blank]
 Prelogin: [blank]
 TSR: Brian Ford
 PB: [blank]
 Shipped Via: [blank]

Remarks	Sample # (lab only)
	01
	02
	03
	04
	05
	06
	07

PES Environmental, Inc.- WA

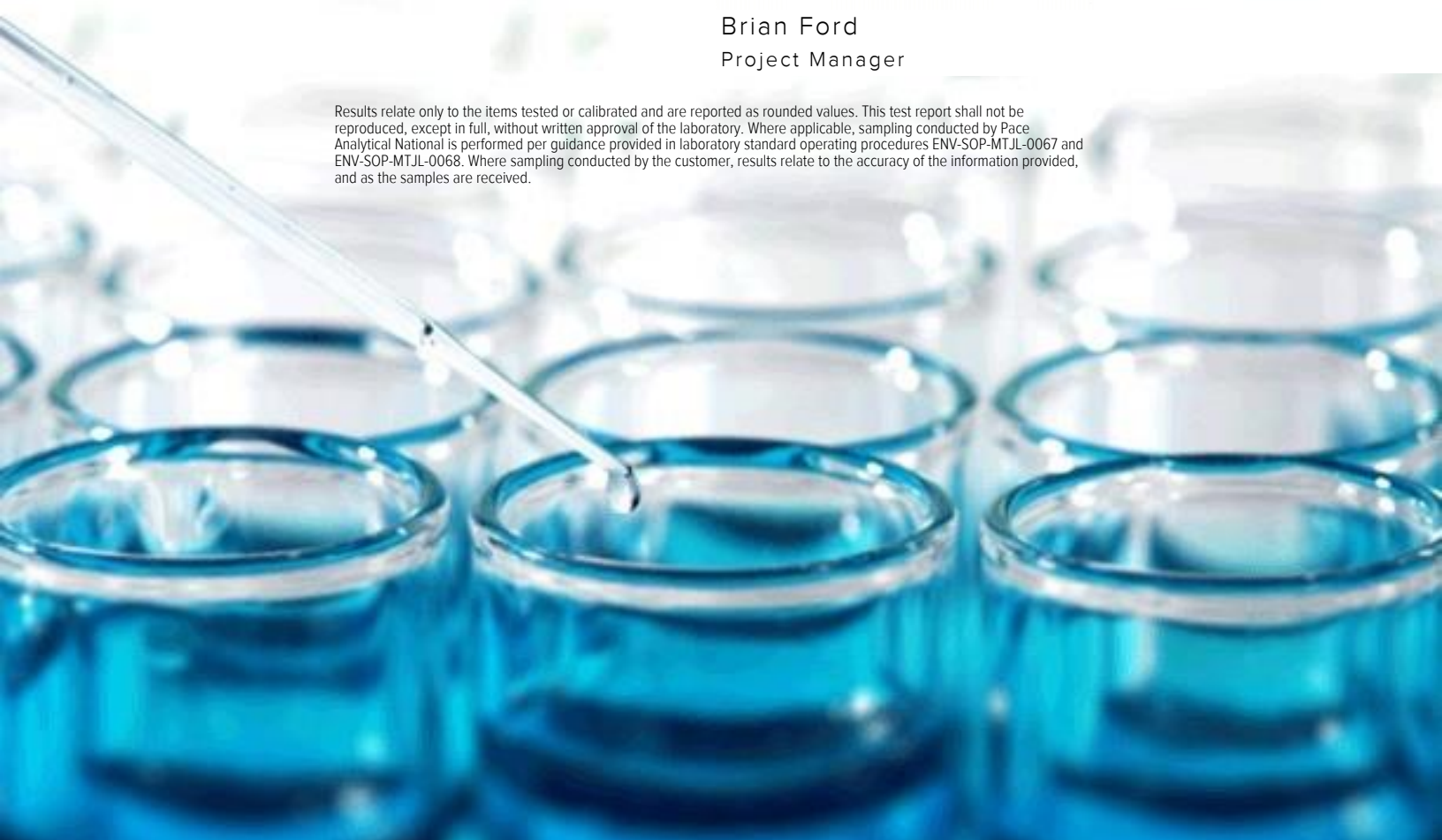
Sample Delivery Group: L1151886
Samples Received: 10/19/2019
Project Number: 1413.001.02.501E
Description: American Linen
Site: AMERICAN LINEN
Report To: Brian O'Neal/Bill Haldeman
1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





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SAMPLE SUMMARY

MW-123-101819 L1151886-01 GW

Collected by
K. Zygus
Collected date/time
10/18/19 09:55
Received date/time
10/19/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1368516	1	10/24/19 17:52	10/24/19 17:52	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1365799	1	10/19/19 15:43	10/19/19 15:43	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1368322	1	10/25/19 13:47	10/25/19 13:47	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1366331	10	10/25/19 08:01	10/28/19 11:15	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1366962	1	10/22/19 08:04	10/22/19 08:04	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1370189	1	10/26/19 19:23	10/26/19 19:23	ACG	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

4
Cn

MW-125-101819 L1151886-02 GW

Collected by
K. Zygus
Collected date/time
10/18/19 11:05
Received date/time
10/19/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1368516	1	10/24/19 18:00	10/24/19 18:00	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1365799	1	10/19/19 16:34	10/19/19 16:34	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1368322	1	10/25/19 14:06	10/25/19 14:06	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1366331	20	10/25/19 08:01	10/28/19 11:19	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1368064	1	10/24/19 23:09	10/24/19 23:09	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1366962	1	10/22/19 08:07	10/22/19 08:07	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1370189	1	10/26/19 19:43	10/26/19 19:43	ACG	Mt. Juliet, TN

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

W-MW-02-101819 L1151886-03 GW

Collected by
K. Zygus
Collected date/time
10/18/19 12:10
Received date/time
10/19/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1368516	1	10/24/19 18:07	10/24/19 18:07	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1365799	1	10/19/19 17:00	10/19/19 17:00	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1368322	1	10/25/19 14:25	10/25/19 14:25	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1366331	20	10/25/19 08:01	10/28/19 11:22	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1368064	10	10/24/19 23:55	10/24/19 23:55	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1366962	10	10/22/19 08:59	10/22/19 08:59	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1370189	1	10/26/19 20:02	10/26/19 20:02	ACG	Mt. Juliet, TN

MW-104-101819 L1151886-04 GW

Collected by
K. Zygus
Collected date/time
10/18/19 13:00
Received date/time
10/19/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1368516	1	10/24/19 18:16	10/24/19 18:16	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1365799	1	10/19/19 17:26	10/19/19 17:26	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1368322	1	10/25/19 15:55	10/25/19 15:55	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1366331	10	10/25/19 08:01	10/28/19 11:25	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1368064	1	10/25/19 00:23	10/25/19 00:23	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1366962	1	10/22/19 08:26	10/22/19 08:26	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1370189	1	10/26/19 20:22	10/26/19 20:22	ACG	Mt. Juliet, TN

MW-106-101819 L1151886-05 GW

Collected by
K. Zygus
Collected date/time
10/18/19 15:15
Received date/time
10/19/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1368516	1	10/24/19 18:24	10/24/19 18:24	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1365799	1	10/19/19 17:38	10/19/19 17:38	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1368322	1	10/25/19 16:09	10/25/19 16:09	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1366331	10	10/25/19 08:01	10/28/19 11:29	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1368064	1	10/25/19 00:50	10/25/19 00:50	ADM	Mt. Juliet, TN

SAMPLE SUMMARY

MW-106-101819 L1151886-05 GW

Collected by: K. Zygas
 Collected date/time: 10/18/19 15:15
 Received date/time: 10/19/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method RSK175	WG1366962	1	10/22/19 08:30	10/22/19 08:30	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1370189	1	10/26/19 20:42	10/26/19 20:42	ACG	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

TB-101819 L1151886-06 GW

Collected by: K. Zygas
 Collected date/time: 10/18/19 15:30
 Received date/time: 10/19/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1368064	1	10/24/19 19:11	10/24/19 19:11	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1370189	1	10/26/19 15:48	10/26/19 15:48	ACG	Mt. Juliet, TN

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

Sample Delivery Group (SDG) Narrative

VOC pH outside of method requirement.

<u>Lab Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L1151886-03	W-MW-02-101819	8260C

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	409000		2710	20000	1	10/24/2019 17:52	WG1368516

Sample Narrative:

L1151886-01 WG1368516: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	22900		51.9	1000	1	10/19/2019 15:43	WG1365799
Nitrate	U		22.7	100	1	10/19/2019 15:43	WG1365799
Sulfate	5610		77.4	5000	1	10/19/2019 15:43	WG1365799

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	5560		102	1000	1	10/25/2019 13:47	WG1368322

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	5140		150	1000	10	10/28/2019 11:15	WG1366331
Manganese	1860		2.50	50.0	10	10/28/2019 11:15	WG1366331

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	4380		0.287	0.678	1	10/22/2019 08:04	WG1366962
Ethane	U		0.296	1.29	1	10/22/2019 08:04	WG1366962
Ethene	U		0.422	1.27	1	10/22/2019 08:04	WG1366962

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	3.19	<u>J</u>	1.05	25.0	1	10/26/2019 19:23	WG1370189
Acrylonitrile	U		0.873	5.00	1	10/26/2019 19:23	WG1370189
Benzene	U		0.0896	0.500	1	10/26/2019 19:23	WG1370189
Bromobenzene	U		0.133	0.500	1	10/26/2019 19:23	WG1370189
Bromodichloromethane	U		0.0800	0.500	1	10/26/2019 19:23	WG1370189
Bromochloromethane	U		0.145	0.500	1	10/26/2019 19:23	WG1370189
Bromoform	U		0.186	0.500	1	10/26/2019 19:23	WG1370189
Bromomethane	U	<u>JO</u>	0.157	2.50	1	10/26/2019 19:23	WG1370189
n-Butylbenzene	U		0.143	0.500	1	10/26/2019 19:23	WG1370189
sec-Butylbenzene	U		0.134	0.500	1	10/26/2019 19:23	WG1370189
tert-Butylbenzene	U		0.183	0.500	1	10/26/2019 19:23	WG1370189
Carbon disulfide	U		0.101	0.500	1	10/26/2019 19:23	WG1370189
Carbon tetrachloride	U		0.159	0.500	1	10/26/2019 19:23	WG1370189
Chlorobenzene	U		0.140	0.500	1	10/26/2019 19:23	WG1370189
Chlorodibromomethane	U		0.128	0.500	1	10/26/2019 19:23	WG1370189
Chloroethane	U		0.141	2.50	1	10/26/2019 19:23	WG1370189
Chloroform	U		0.0860	0.500	1	10/26/2019 19:23	WG1370189
Chloromethane	U		0.153	1.25	1	10/26/2019 19:23	WG1370189
2-Chlorotoluene	U		0.111	0.500	1	10/26/2019 19:23	WG1370189
4-Chlorotoluene	U		0.0972	0.500	1	10/26/2019 19:23	WG1370189

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/26/2019 19:23	WG1370189
1,2-Dibromoethane	U		0.193	0.500	1	10/26/2019 19:23	WG1370189
Dibromomethane	U		0.117	0.500	1	10/26/2019 19:23	WG1370189
1,2-Dichlorobenzene	U		0.101	0.500	1	10/26/2019 19:23	WG1370189
1,3-Dichlorobenzene	U		0.130	0.500	1	10/26/2019 19:23	WG1370189
1,4-Dichlorobenzene	U		0.121	0.500	1	10/26/2019 19:23	WG1370189
Dichlorodifluoromethane	U		0.127	2.50	1	10/26/2019 19:23	WG1370189
1,1-Dichloroethane	U		0.114	0.500	1	10/26/2019 19:23	WG1370189
1,2-Dichloroethane	U		0.108	0.500	1	10/26/2019 19:23	WG1370189
1,1-Dichloroethene	U		0.188	0.500	1	10/26/2019 19:23	WG1370189
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/26/2019 19:23	WG1370189
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/26/2019 19:23	WG1370189
1,2-Dichloropropane	U		0.190	0.500	1	10/26/2019 19:23	WG1370189
1,1-Dichloropropene	U		0.128	0.500	1	10/26/2019 19:23	WG1370189
1,3-Dichloropropane	U		0.147	1.00	1	10/26/2019 19:23	WG1370189
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/26/2019 19:23	WG1370189
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/26/2019 19:23	WG1370189
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/26/2019 19:23	WG1370189
2,2-Dichloropropane	U		0.0929	0.500	1	10/26/2019 19:23	WG1370189
Di-isopropyl ether	0.163	<u>J</u>	0.0924	0.500	1	10/26/2019 19:23	WG1370189
Ethylbenzene	U		0.158	0.500	1	10/26/2019 19:23	WG1370189
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/26/2019 19:23	WG1370189
2-Hexanone	U		0.757	5.00	1	10/26/2019 19:23	WG1370189
n-Hexane	U		0.305	5.00	1	10/26/2019 19:23	WG1370189
Iodomethane	U	<u>JO</u>	0.377	10.0	1	10/26/2019 19:23	WG1370189
Isopropylbenzene	U	<u>JO</u>	0.126	0.500	1	10/26/2019 19:23	WG1370189
p-Isopropyltoluene	U		0.138	0.500	1	10/26/2019 19:23	WG1370189
2-Butanone (MEK)	U		1.28	5.00	1	10/26/2019 19:23	WG1370189
Methylene Chloride	U		1.07	2.50	1	10/26/2019 19:23	WG1370189
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/26/2019 19:23	WG1370189
Methyl tert-butyl ether	U		0.102	0.500	1	10/26/2019 19:23	WG1370189
Naphthalene	U		0.174	2.50	1	10/26/2019 19:23	WG1370189
n-Propylbenzene	U		0.162	0.500	1	10/26/2019 19:23	WG1370189
Styrene	U		0.117	0.500	1	10/26/2019 19:23	WG1370189
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/26/2019 19:23	WG1370189
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/26/2019 19:23	WG1370189
1,1,2-Trichlorotrifluoroethane	U	<u>JO</u>	0.164	0.500	1	10/26/2019 19:23	WG1370189
Tetrachloroethene	U		0.199	0.500	1	10/26/2019 19:23	WG1370189
Toluene	U		0.412	0.500	1	10/26/2019 19:23	WG1370189
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/26/2019 19:23	WG1370189
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/26/2019 19:23	WG1370189
1,1,1-Trichloroethane	U	<u>JO</u>	0.0940	0.500	1	10/26/2019 19:23	WG1370189
1,1,2-Trichloroethane	U		0.186	0.500	1	10/26/2019 19:23	WG1370189
Trichloroethene	U	<u>JO</u>	0.153	0.500	1	10/26/2019 19:23	WG1370189
Trichlorofluoromethane	U		0.130	2.50	1	10/26/2019 19:23	WG1370189
1,2,3-Trichloropropane	U		0.247	2.50	1	10/26/2019 19:23	WG1370189
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/26/2019 19:23	WG1370189
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/26/2019 19:23	WG1370189
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/26/2019 19:23	WG1370189
Vinyl acetate	U		0.645	5.00	1	10/26/2019 19:23	WG1370189
Vinyl chloride	U		0.118	0.500	1	10/26/2019 19:23	WG1370189
Xylenes, Total	U		0.316	1.50	1	10/26/2019 19:23	WG1370189
(S) Toluene-d8	97.6			80.0-120		10/26/2019 19:23	WG1370189
(S) 4-Bromofluorobenzene	93.7			77.0-126		10/26/2019 19:23	WG1370189
(S) 1,2-Dichloroethane-d4	101			70.0-130		10/26/2019 19:23	WG1370189

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	481000		2710	20000	1	10/24/2019 18:00	WG1368516

Sample Narrative:

L1151886-02 WG1368516: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	10900		51.9	1000	1	10/19/2019 16:34	WG1365799
Nitrate	31.9	J	22.7	100	1	10/19/2019 16:34	WG1365799
Sulfate	17100		77.4	5000	1	10/19/2019 16:34	WG1365799

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	15300		102	1000	1	10/25/2019 14:06	WG1368322

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	11700		300	2000	20	10/28/2019 11:19	WG1366331
Manganese	3670		5.00	100	20	10/28/2019 11:19	WG1366331

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/24/2019 23:09	WG1368064
(S) a,a,a-Trifluorotoluene(FID)	96.7			78.0-120		10/24/2019 23:09	WG1368064

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	997		0.287	0.678	1	10/22/2019 08:07	WG1366962
Ethane	U		0.296	1.29	1	10/22/2019 08:07	WG1366962
Ethene	U		0.422	1.27	1	10/22/2019 08:07	WG1366962

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.79	J	1.05	25.0	1	10/26/2019 19:43	WG1370189
Acrylonitrile	U		0.873	5.00	1	10/26/2019 19:43	WG1370189
Benzene	U		0.0896	0.500	1	10/26/2019 19:43	WG1370189
Bromobenzene	U		0.133	0.500	1	10/26/2019 19:43	WG1370189
Bromodichloromethane	U		0.0800	0.500	1	10/26/2019 19:43	WG1370189
Bromochloromethane	U		0.145	0.500	1	10/26/2019 19:43	WG1370189
Bromoform	U		0.186	0.500	1	10/26/2019 19:43	WG1370189
Bromomethane	U	JO	0.157	2.50	1	10/26/2019 19:43	WG1370189
n-Butylbenzene	U		0.143	0.500	1	10/26/2019 19:43	WG1370189
sec-Butylbenzene	U		0.134	0.500	1	10/26/2019 19:43	WG1370189
tert-Butylbenzene	U		0.183	0.500	1	10/26/2019 19:43	WG1370189
Carbon disulfide	U		0.101	0.500	1	10/26/2019 19:43	WG1370189
Carbon tetrachloride	U		0.159	0.500	1	10/26/2019 19:43	WG1370189

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/26/2019 19:43	WG1370189
Chlorodibromomethane	U		0.128	0.500	1	10/26/2019 19:43	WG1370189
Chloroethane	U		0.141	2.50	1	10/26/2019 19:43	WG1370189
Chloroform	U		0.0860	0.500	1	10/26/2019 19:43	WG1370189
Chloromethane	U		0.153	1.25	1	10/26/2019 19:43	WG1370189
2-Chlorotoluene	U		0.111	0.500	1	10/26/2019 19:43	WG1370189
4-Chlorotoluene	U		0.0972	0.500	1	10/26/2019 19:43	WG1370189
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/26/2019 19:43	WG1370189
1,2-Dibromoethane	U		0.193	0.500	1	10/26/2019 19:43	WG1370189
Dibromomethane	U		0.117	0.500	1	10/26/2019 19:43	WG1370189
1,2-Dichlorobenzene	U		0.101	0.500	1	10/26/2019 19:43	WG1370189
1,3-Dichlorobenzene	U		0.130	0.500	1	10/26/2019 19:43	WG1370189
1,4-Dichlorobenzene	U		0.121	0.500	1	10/26/2019 19:43	WG1370189
Dichlorodifluoromethane	U		0.127	2.50	1	10/26/2019 19:43	WG1370189
1,1-Dichloroethane	U		0.114	0.500	1	10/26/2019 19:43	WG1370189
1,2-Dichloroethane	U		0.108	0.500	1	10/26/2019 19:43	WG1370189
1,1-Dichloroethene	U		0.188	0.500	1	10/26/2019 19:43	WG1370189
cis-1,2-Dichloroethene	0.496	U	0.0933	0.500	1	10/26/2019 19:43	WG1370189
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/26/2019 19:43	WG1370189
1,2-Dichloropropane	U		0.190	0.500	1	10/26/2019 19:43	WG1370189
1,1-Dichloropropene	U		0.128	0.500	1	10/26/2019 19:43	WG1370189
1,3-Dichloropropane	U		0.147	1.00	1	10/26/2019 19:43	WG1370189
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/26/2019 19:43	WG1370189
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/26/2019 19:43	WG1370189
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/26/2019 19:43	WG1370189
2,2-Dichloropropane	U		0.0929	0.500	1	10/26/2019 19:43	WG1370189
Di-isopropyl ether	U		0.0924	0.500	1	10/26/2019 19:43	WG1370189
Ethylbenzene	U		0.158	0.500	1	10/26/2019 19:43	WG1370189
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/26/2019 19:43	WG1370189
2-Hexanone	U		0.757	5.00	1	10/26/2019 19:43	WG1370189
n-Hexane	U		0.305	5.00	1	10/26/2019 19:43	WG1370189
Iodomethane	U	JO	0.377	10.0	1	10/26/2019 19:43	WG1370189
Isopropylbenzene	U	JO	0.126	0.500	1	10/26/2019 19:43	WG1370189
p-Isopropyltoluene	U		0.138	0.500	1	10/26/2019 19:43	WG1370189
2-Butanone (MEK)	U		1.28	5.00	1	10/26/2019 19:43	WG1370189
Methylene Chloride	U		1.07	2.50	1	10/26/2019 19:43	WG1370189
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/26/2019 19:43	WG1370189
Methyl tert-butyl ether	U		0.102	0.500	1	10/26/2019 19:43	WG1370189
Naphthalene	U		0.174	2.50	1	10/26/2019 19:43	WG1370189
n-Propylbenzene	U		0.162	0.500	1	10/26/2019 19:43	WG1370189
Styrene	U		0.117	0.500	1	10/26/2019 19:43	WG1370189
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/26/2019 19:43	WG1370189
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/26/2019 19:43	WG1370189
1,1,2-Trichlorotrifluoroethane	U	JO	0.164	0.500	1	10/26/2019 19:43	WG1370189
Tetrachloroethene	U		0.199	0.500	1	10/26/2019 19:43	WG1370189
Toluene	U		0.412	0.500	1	10/26/2019 19:43	WG1370189
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/26/2019 19:43	WG1370189
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/26/2019 19:43	WG1370189
1,1,1-Trichloroethane	U	JO	0.0940	0.500	1	10/26/2019 19:43	WG1370189
1,1,2-Trichloroethane	U		0.186	0.500	1	10/26/2019 19:43	WG1370189
Trichloroethene	U	JO	0.153	0.500	1	10/26/2019 19:43	WG1370189
Trichlorofluoromethane	U		0.130	2.50	1	10/26/2019 19:43	WG1370189
1,2,3-Trichloropropane	U		0.247	2.50	1	10/26/2019 19:43	WG1370189
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/26/2019 19:43	WG1370189
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/26/2019 19:43	WG1370189
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/26/2019 19:43	WG1370189

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/26/2019 19:43	WG1370189
Vinyl chloride	U		0.118	0.500	1	10/26/2019 19:43	WG1370189
Xylenes, Total	U		0.316	1.50	1	10/26/2019 19:43	WG1370189
<i>(S) Toluene-d8</i>	95.8			80.0-120		10/26/2019 19:43	WG1370189
<i>(S) 4-Bromofluorobenzene</i>	91.8			77.0-126		10/26/2019 19:43	WG1370189
<i>(S) 1,2-Dichloroethane-d4</i>	101			70.0-130		10/26/2019 19:43	WG1370189

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	1230000		2710	20000	1	10/24/2019 18:07	WG1368516

Sample Narrative:

L1151886-03 WG1368516: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	89500		51.9	1000	1	10/19/2019 17:00	WG1365799
Nitrate	U		22.7	100	1	10/19/2019 17:00	WG1365799
Sulfate	U		77.4	5000	1	10/19/2019 17:00	WG1365799

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	37600		102	1000	1	10/25/2019 14:25	WG1368322

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	20500		300	2000	20	10/28/2019 11:22	WG1366331
Manganese	3820		5.00	100	20	10/28/2019 11:22	WG1366331

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		316	1000	10	10/24/2019 23:55	WG1368064
(S) a,a,a-Trifluorotoluene(FID)	97.4			78.0-120		10/24/2019 23:55	WG1368064

Sample Narrative:

L1151886-03 WG1368064: Elevated RL due to foamy matrix.

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	32100		2.87	6.78	10	10/22/2019 08:59	WG1366962
Ethane	42.0		2.96	12.9	10	10/22/2019 08:59	WG1366962
Ethene	U		4.22	12.7	10	10/22/2019 08:59	WG1366962

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	2.54	J	1.05	25.0	1	10/26/2019 20:02	WG1370189
Acrylonitrile	U		0.873	5.00	1	10/26/2019 20:02	WG1370189
Benzene	U		0.0896	0.500	1	10/26/2019 20:02	WG1370189
Bromobenzene	U		0.133	0.500	1	10/26/2019 20:02	WG1370189
Bromodichloromethane	U		0.0800	0.500	1	10/26/2019 20:02	WG1370189
Bromochloromethane	U		0.145	0.500	1	10/26/2019 20:02	WG1370189
Bromoform	U		0.186	0.500	1	10/26/2019 20:02	WG1370189
Bromomethane	U	JO	0.157	2.50	1	10/26/2019 20:02	WG1370189
n-Butylbenzene	U		0.143	0.500	1	10/26/2019 20:02	WG1370189
sec-Butylbenzene	U		0.134	0.500	1	10/26/2019 20:02	WG1370189

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/18/19 12:10

L1151886

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
tert-Butylbenzene	U		0.183	0.500	1	10/26/2019 20:02	WG1370189
Carbon disulfide	0.262	J	0.101	0.500	1	10/26/2019 20:02	WG1370189
Carbon tetrachloride	U		0.159	0.500	1	10/26/2019 20:02	WG1370189
Chlorobenzene	U		0.140	0.500	1	10/26/2019 20:02	WG1370189
Chlorodibromomethane	U		0.128	0.500	1	10/26/2019 20:02	WG1370189
Chloroethane	U		0.141	2.50	1	10/26/2019 20:02	WG1370189
Chloroform	U		0.0860	0.500	1	10/26/2019 20:02	WG1370189
Chloromethane	U		0.153	1.25	1	10/26/2019 20:02	WG1370189
2-Chlorotoluene	U		0.111	0.500	1	10/26/2019 20:02	WG1370189
4-Chlorotoluene	U		0.0972	0.500	1	10/26/2019 20:02	WG1370189
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/26/2019 20:02	WG1370189
1,2-Dibromoethane	U		0.193	0.500	1	10/26/2019 20:02	WG1370189
Dibromomethane	U		0.117	0.500	1	10/26/2019 20:02	WG1370189
1,2-Dichlorobenzene	U		0.101	0.500	1	10/26/2019 20:02	WG1370189
1,3-Dichlorobenzene	U		0.130	0.500	1	10/26/2019 20:02	WG1370189
1,4-Dichlorobenzene	U		0.121	0.500	1	10/26/2019 20:02	WG1370189
Dichlorodifluoromethane	U		0.127	2.50	1	10/26/2019 20:02	WG1370189
1,1-Dichloroethane	U		0.114	0.500	1	10/26/2019 20:02	WG1370189
1,2-Dichloroethane	U		0.108	0.500	1	10/26/2019 20:02	WG1370189
1,1-Dichloroethene	U		0.188	0.500	1	10/26/2019 20:02	WG1370189
cis-1,2-Dichloroethene	2.07		0.0933	0.500	1	10/26/2019 20:02	WG1370189
trans-1,2-Dichloroethene	0.278	J	0.152	0.500	1	10/26/2019 20:02	WG1370189
1,2-Dichloropropane	U		0.190	0.500	1	10/26/2019 20:02	WG1370189
1,1-Dichloropropene	U		0.128	0.500	1	10/26/2019 20:02	WG1370189
1,3-Dichloropropane	U		0.147	1.00	1	10/26/2019 20:02	WG1370189
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/26/2019 20:02	WG1370189
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/26/2019 20:02	WG1370189
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/26/2019 20:02	WG1370189
2,2-Dichloropropane	U		0.0929	0.500	1	10/26/2019 20:02	WG1370189
Di-isopropyl ether	U		0.0924	0.500	1	10/26/2019 20:02	WG1370189
Ethylbenzene	U		0.158	0.500	1	10/26/2019 20:02	WG1370189
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/26/2019 20:02	WG1370189
2-Hexanone	U		0.757	5.00	1	10/26/2019 20:02	WG1370189
n-Hexane	U		0.305	5.00	1	10/26/2019 20:02	WG1370189
Iodomethane	U	JO	0.377	10.0	1	10/26/2019 20:02	WG1370189
Isopropylbenzene	U	JO	0.126	0.500	1	10/26/2019 20:02	WG1370189
p-Isopropyltoluene	U		0.138	0.500	1	10/26/2019 20:02	WG1370189
2-Butanone (MEK)	U		1.28	5.00	1	10/26/2019 20:02	WG1370189
Methylene Chloride	U		1.07	2.50	1	10/26/2019 20:02	WG1370189
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/26/2019 20:02	WG1370189
Methyl tert-butyl ether	U		0.102	0.500	1	10/26/2019 20:02	WG1370189
Naphthalene	U		0.174	2.50	1	10/26/2019 20:02	WG1370189
n-Propylbenzene	U		0.162	0.500	1	10/26/2019 20:02	WG1370189
Styrene	U		0.117	0.500	1	10/26/2019 20:02	WG1370189
1,1,1-Tetrachloroethane	U		0.120	0.500	1	10/26/2019 20:02	WG1370189
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/26/2019 20:02	WG1370189
1,1,2-Trichlorotrifluoroethane	U	JO	0.164	0.500	1	10/26/2019 20:02	WG1370189
Tetrachloroethene	U		0.199	0.500	1	10/26/2019 20:02	WG1370189
Toluene	1.79		0.412	0.500	1	10/26/2019 20:02	WG1370189
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/26/2019 20:02	WG1370189
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/26/2019 20:02	WG1370189
1,1,1-Trichloroethane	U	JO	0.0940	0.500	1	10/26/2019 20:02	WG1370189
1,1,2-Trichloroethane	U		0.186	0.500	1	10/26/2019 20:02	WG1370189
Trichloroethene	U	JO	0.153	0.500	1	10/26/2019 20:02	WG1370189
Trichlorofluoromethane	U		0.130	2.50	1	10/26/2019 20:02	WG1370189
1,2,3-Trichloropropane	U		0.247	2.50	1	10/26/2019 20:02	WG1370189

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/26/2019 20:02	WG1370189
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/26/2019 20:02	WG1370189
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/26/2019 20:02	WG1370189
Vinyl acetate	U		0.645	5.00	1	10/26/2019 20:02	WG1370189
Vinyl chloride	3.56		0.118	0.500	1	10/26/2019 20:02	WG1370189
Xylenes, Total	U		0.316	1.50	1	10/26/2019 20:02	WG1370189
(S) Toluene-d8	91.6			80.0-120		10/26/2019 20:02	WG1370189
(S) 4-Bromofluorobenzene	89.3			77.0-126		10/26/2019 20:02	WG1370189
(S) 1,2-Dichloroethane-d4	106			70.0-130		10/26/2019 20:02	WG1370189

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	203000		2710	20000	1	10/24/2019 18:16	WG1368516

Sample Narrative:

L1151886-04 WG1368516: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	13500		51.9	1000	1	10/19/2019 17:26	WG1365799
Nitrate	U		22.7	100	1	10/19/2019 17:26	WG1365799
Sulfate	5970		77.4	5000	1	10/19/2019 17:26	WG1365799

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2300	<u>B</u>	102	1000	1	10/25/2019 15:55	WG1368322

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	1330		150	1000	10	10/28/2019 11:25	WG1366331
Manganese	268		2.50	50.0	10	10/28/2019 11:25	WG1366331

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/25/2019 00:23	WG1368064
(S) a,a,a-Trifluorotoluene(FID)	96.6			78.0-120		10/25/2019 00:23	WG1368064

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	316		0.287	0.678	1	10/22/2019 08:26	WG1366962
Ethane	U		0.296	1.29	1	10/22/2019 08:26	WG1366962
Ethene	23.7		0.422	1.27	1	10/22/2019 08:26	WG1366962

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	2.88	<u>J</u>	1.05	25.0	1	10/26/2019 20:22	WG1370189
Acrylonitrile	U		0.873	5.00	1	10/26/2019 20:22	WG1370189
Benzene	U		0.0896	0.500	1	10/26/2019 20:22	WG1370189
Bromobenzene	U		0.133	0.500	1	10/26/2019 20:22	WG1370189
Bromodichloromethane	U		0.0800	0.500	1	10/26/2019 20:22	WG1370189
Bromochloromethane	U		0.145	0.500	1	10/26/2019 20:22	WG1370189
Bromoform	U		0.186	0.500	1	10/26/2019 20:22	WG1370189
Bromomethane	U	<u>JO</u>	0.157	2.50	1	10/26/2019 20:22	WG1370189
n-Butylbenzene	U		0.143	0.500	1	10/26/2019 20:22	WG1370189
sec-Butylbenzene	U		0.134	0.500	1	10/26/2019 20:22	WG1370189
tert-Butylbenzene	U		0.183	0.500	1	10/26/2019 20:22	WG1370189
Carbon disulfide	U		0.101	0.500	1	10/26/2019 20:22	WG1370189
Carbon tetrachloride	U		0.159	0.500	1	10/26/2019 20:22	WG1370189

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/18/19 13:00

L1151886

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/26/2019 20:22	WG1370189
Chlorodibromomethane	U		0.128	0.500	1	10/26/2019 20:22	WG1370189
Chloroethane	U		0.141	2.50	1	10/26/2019 20:22	WG1370189
Chloroform	U		0.0860	0.500	1	10/26/2019 20:22	WG1370189
Chloromethane	U		0.153	1.25	1	10/26/2019 20:22	WG1370189
2-Chlorotoluene	U		0.111	0.500	1	10/26/2019 20:22	WG1370189
4-Chlorotoluene	U		0.0972	0.500	1	10/26/2019 20:22	WG1370189
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/26/2019 20:22	WG1370189
1,2-Dibromoethane	U		0.193	0.500	1	10/26/2019 20:22	WG1370189
Dibromomethane	U		0.117	0.500	1	10/26/2019 20:22	WG1370189
1,2-Dichlorobenzene	U		0.101	0.500	1	10/26/2019 20:22	WG1370189
1,3-Dichlorobenzene	U		0.130	0.500	1	10/26/2019 20:22	WG1370189
1,4-Dichlorobenzene	U		0.121	0.500	1	10/26/2019 20:22	WG1370189
Dichlorodifluoromethane	U		0.127	2.50	1	10/26/2019 20:22	WG1370189
1,1-Dichloroethane	U		0.114	0.500	1	10/26/2019 20:22	WG1370189
1,2-Dichloroethane	U		0.108	0.500	1	10/26/2019 20:22	WG1370189
1,1-Dichloroethene	0.799		0.188	0.500	1	10/26/2019 20:22	WG1370189
cis-1,2-Dichloroethene	16.3		0.0933	0.500	1	10/26/2019 20:22	WG1370189
trans-1,2-Dichloroethene	0.329	J	0.152	0.500	1	10/26/2019 20:22	WG1370189
1,2-Dichloropropane	U		0.190	0.500	1	10/26/2019 20:22	WG1370189
1,1-Dichloropropene	U		0.128	0.500	1	10/26/2019 20:22	WG1370189
1,3-Dichloropropane	U		0.147	1.00	1	10/26/2019 20:22	WG1370189
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/26/2019 20:22	WG1370189
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/26/2019 20:22	WG1370189
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/26/2019 20:22	WG1370189
2,2-Dichloropropane	U		0.0929	0.500	1	10/26/2019 20:22	WG1370189
Di-isopropyl ether	U		0.0924	0.500	1	10/26/2019 20:22	WG1370189
Ethylbenzene	U		0.158	0.500	1	10/26/2019 20:22	WG1370189
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/26/2019 20:22	WG1370189
2-Hexanone	U		0.757	5.00	1	10/26/2019 20:22	WG1370189
n-Hexane	U		0.305	5.00	1	10/26/2019 20:22	WG1370189
Iodomethane	U	JO	0.377	10.0	1	10/26/2019 20:22	WG1370189
Isopropylbenzene	U	JO	0.126	0.500	1	10/26/2019 20:22	WG1370189
p-Isopropyltoluene	U		0.138	0.500	1	10/26/2019 20:22	WG1370189
2-Butanone (MEK)	U		1.28	5.00	1	10/26/2019 20:22	WG1370189
Methylene Chloride	U		1.07	2.50	1	10/26/2019 20:22	WG1370189
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/26/2019 20:22	WG1370189
Methyl tert-butyl ether	U		0.102	0.500	1	10/26/2019 20:22	WG1370189
Naphthalene	U		0.174	2.50	1	10/26/2019 20:22	WG1370189
n-Propylbenzene	U		0.162	0.500	1	10/26/2019 20:22	WG1370189
Styrene	U		0.117	0.500	1	10/26/2019 20:22	WG1370189
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/26/2019 20:22	WG1370189
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/26/2019 20:22	WG1370189
1,1,2-Trichlorotrifluoroethane	U	JO	0.164	0.500	1	10/26/2019 20:22	WG1370189
Tetrachloroethene	U		0.199	0.500	1	10/26/2019 20:22	WG1370189
Toluene	U		0.412	0.500	1	10/26/2019 20:22	WG1370189
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/26/2019 20:22	WG1370189
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/26/2019 20:22	WG1370189
1,1,1-Trichloroethane	U	JO	0.0940	0.500	1	10/26/2019 20:22	WG1370189
1,1,2-Trichloroethane	U		0.186	0.500	1	10/26/2019 20:22	WG1370189
Trichloroethene	1.54	JO	0.153	0.500	1	10/26/2019 20:22	WG1370189
Trichlorofluoromethane	U		0.130	2.50	1	10/26/2019 20:22	WG1370189
1,2,3-Trichloropropane	U		0.247	2.50	1	10/26/2019 20:22	WG1370189
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/26/2019 20:22	WG1370189
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/26/2019 20:22	WG1370189
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/26/2019 20:22	WG1370189

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/26/2019 20:22	WG1370189
Vinyl chloride	33.2		0.118	0.500	1	10/26/2019 20:22	WG1370189
Xylenes, Total	U		0.316	1.50	1	10/26/2019 20:22	WG1370189
<i>(S) Toluene-d8</i>	94.7			80.0-120		10/26/2019 20:22	WG1370189
<i>(S) 4-Bromofluorobenzene</i>	91.6			77.0-126		10/26/2019 20:22	WG1370189
<i>(S) 1,2-Dichloroethane-d4</i>	101			70.0-130		10/26/2019 20:22	WG1370189

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	276000		2710	20000	1	10/24/2019 18:24	WG1368516

Sample Narrative:

L1151886-05 WG1368516: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	25800		51.9	1000	1	10/19/2019 17:38	WG1365799
Nitrate	U		22.7	100	1	10/19/2019 17:38	WG1365799
Sulfate	17000		77.4	5000	1	10/19/2019 17:38	WG1365799

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	2320	<u>B</u>	102	1000	1	10/25/2019 16:09	WG1368322

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	2640		150	1000	10	10/28/2019 11:29	WG1366331
Manganese	792		2.50	50.0	10	10/28/2019 11:29	WG1366331

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/25/2019 00:50	WG1368064
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	94.0			78.0-120		10/25/2019 00:50	WG1368064

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	47.2		0.287	0.678	1	10/22/2019 08:30	WG1366962
Ethane	U		0.296	1.29	1	10/22/2019 08:30	WG1366962
Ethene	U		0.422	1.27	1	10/22/2019 08:30	WG1366962

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	2.01	<u>J</u>	1.05	25.0	1	10/26/2019 20:42	WG1370189
Acrylonitrile	U		0.873	5.00	1	10/26/2019 20:42	WG1370189
Benzene	U		0.0896	0.500	1	10/26/2019 20:42	WG1370189
Bromobenzene	U		0.133	0.500	1	10/26/2019 20:42	WG1370189
Bromodichloromethane	U		0.0800	0.500	1	10/26/2019 20:42	WG1370189
Bromochloromethane	U		0.145	0.500	1	10/26/2019 20:42	WG1370189
Bromoform	U		0.186	0.500	1	10/26/2019 20:42	WG1370189
Bromomethane	U	<u>JO</u>	0.157	2.50	1	10/26/2019 20:42	WG1370189
n-Butylbenzene	U		0.143	0.500	1	10/26/2019 20:42	WG1370189
sec-Butylbenzene	U		0.134	0.500	1	10/26/2019 20:42	WG1370189
tert-Butylbenzene	U		0.183	0.500	1	10/26/2019 20:42	WG1370189
Carbon disulfide	U		0.101	0.500	1	10/26/2019 20:42	WG1370189
Carbon tetrachloride	U		0.159	0.500	1	10/26/2019 20:42	WG1370189

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/18/19 15:15

L1151886

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/26/2019 20:42	WG1370189
Chlorodibromomethane	U		0.128	0.500	1	10/26/2019 20:42	WG1370189
Chloroethane	U		0.141	2.50	1	10/26/2019 20:42	WG1370189
Chloroform	U		0.0860	0.500	1	10/26/2019 20:42	WG1370189
Chloromethane	U		0.153	1.25	1	10/26/2019 20:42	WG1370189
2-Chlorotoluene	U		0.111	0.500	1	10/26/2019 20:42	WG1370189
4-Chlorotoluene	U		0.0972	0.500	1	10/26/2019 20:42	WG1370189
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/26/2019 20:42	WG1370189
1,2-Dibromoethane	U		0.193	0.500	1	10/26/2019 20:42	WG1370189
Dibromomethane	U		0.117	0.500	1	10/26/2019 20:42	WG1370189
1,2-Dichlorobenzene	U		0.101	0.500	1	10/26/2019 20:42	WG1370189
1,3-Dichlorobenzene	U		0.130	0.500	1	10/26/2019 20:42	WG1370189
1,4-Dichlorobenzene	U		0.121	0.500	1	10/26/2019 20:42	WG1370189
Dichlorodifluoromethane	U		0.127	2.50	1	10/26/2019 20:42	WG1370189
1,1-Dichloroethane	U		0.114	0.500	1	10/26/2019 20:42	WG1370189
1,2-Dichloroethane	U		0.108	0.500	1	10/26/2019 20:42	WG1370189
1,1-Dichloroethene	U		0.188	0.500	1	10/26/2019 20:42	WG1370189
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/26/2019 20:42	WG1370189
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/26/2019 20:42	WG1370189
1,2-Dichloropropane	U		0.190	0.500	1	10/26/2019 20:42	WG1370189
1,1-Dichloropropene	U		0.128	0.500	1	10/26/2019 20:42	WG1370189
1,3-Dichloropropane	U		0.147	1.00	1	10/26/2019 20:42	WG1370189
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/26/2019 20:42	WG1370189
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/26/2019 20:42	WG1370189
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/26/2019 20:42	WG1370189
2,2-Dichloropropane	U		0.0929	0.500	1	10/26/2019 20:42	WG1370189
Di-isopropyl ether	U		0.0924	0.500	1	10/26/2019 20:42	WG1370189
Ethylbenzene	U		0.158	0.500	1	10/26/2019 20:42	WG1370189
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/26/2019 20:42	WG1370189
2-Hexanone	U		0.757	5.00	1	10/26/2019 20:42	WG1370189
n-Hexane	U		0.305	5.00	1	10/26/2019 20:42	WG1370189
Iodomethane	U	<u>JO</u>	0.377	10.0	1	10/26/2019 20:42	WG1370189
Isopropylbenzene	U	<u>JO</u>	0.126	0.500	1	10/26/2019 20:42	WG1370189
p-Isopropyltoluene	U		0.138	0.500	1	10/26/2019 20:42	WG1370189
2-Butanone (MEK)	U		1.28	5.00	1	10/26/2019 20:42	WG1370189
Methylene Chloride	U		1.07	2.50	1	10/26/2019 20:42	WG1370189
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/26/2019 20:42	WG1370189
Methyl tert-butyl ether	U		0.102	0.500	1	10/26/2019 20:42	WG1370189
Naphthalene	U		0.174	2.50	1	10/26/2019 20:42	WG1370189
n-Propylbenzene	U		0.162	0.500	1	10/26/2019 20:42	WG1370189
Styrene	U		0.117	0.500	1	10/26/2019 20:42	WG1370189
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/26/2019 20:42	WG1370189
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/26/2019 20:42	WG1370189
1,1,2-Trichlorotrifluoroethane	U	<u>JO</u>	0.164	0.500	1	10/26/2019 20:42	WG1370189
Tetrachloroethene	U		0.199	0.500	1	10/26/2019 20:42	WG1370189
Toluene	U		0.412	0.500	1	10/26/2019 20:42	WG1370189
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/26/2019 20:42	WG1370189
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/26/2019 20:42	WG1370189
1,1,1-Trichloroethane	U	<u>JO</u>	0.0940	0.500	1	10/26/2019 20:42	WG1370189
1,1,2-Trichloroethane	U		0.186	0.500	1	10/26/2019 20:42	WG1370189
Trichloroethene	U	<u>JO</u>	0.153	0.500	1	10/26/2019 20:42	WG1370189
Trichlorofluoromethane	U		0.130	2.50	1	10/26/2019 20:42	WG1370189
1,2,3-Trichloropropane	U		0.247	2.50	1	10/26/2019 20:42	WG1370189
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/26/2019 20:42	WG1370189
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/26/2019 20:42	WG1370189
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/26/2019 20:42	WG1370189

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/26/2019 20:42	WG1370189
Vinyl chloride	U		0.118	0.500	1	10/26/2019 20:42	WG1370189
Xylenes, Total	U		0.316	1.50	1	10/26/2019 20:42	WG1370189
<i>(S) Toluene-d8</i>	94.4			80.0-120		10/26/2019 20:42	WG1370189
<i>(S) 4-Bromofluorobenzene</i>	92.6			77.0-126		10/26/2019 20:42	WG1370189
<i>(S) 1,2-Dichloroethane-d4</i>	105			70.0-130		10/26/2019 20:42	WG1370189

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/24/2019 19:11	WG1368064
(S) a,a,a-Trifluorotoluene(FID)	96.1			78.0-120		10/24/2019 19:11	WG1368064

1 Cp

2 Tc

3 Ss

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		1.05	25.0	1	10/26/2019 15:48	WG1370189
Acrylonitrile	U		0.873	5.00	1	10/26/2019 15:48	WG1370189
Benzene	U		0.0896	0.500	1	10/26/2019 15:48	WG1370189
Bromobenzene	U		0.133	0.500	1	10/26/2019 15:48	WG1370189
Bromodichloromethane	U		0.0800	0.500	1	10/26/2019 15:48	WG1370189
Bromochloromethane	U		0.145	0.500	1	10/26/2019 15:48	WG1370189
Bromoform	U		0.186	0.500	1	10/26/2019 15:48	WG1370189
Bromomethane	U	JO	0.157	2.50	1	10/26/2019 15:48	WG1370189
n-Butylbenzene	U		0.143	0.500	1	10/26/2019 15:48	WG1370189
sec-Butylbenzene	U		0.134	0.500	1	10/26/2019 15:48	WG1370189
tert-Butylbenzene	U		0.183	0.500	1	10/26/2019 15:48	WG1370189
Carbon disulfide	U		0.101	0.500	1	10/26/2019 15:48	WG1370189
Carbon tetrachloride	U		0.159	0.500	1	10/26/2019 15:48	WG1370189
Chlorobenzene	U		0.140	0.500	1	10/26/2019 15:48	WG1370189
Chlorodibromomethane	U		0.128	0.500	1	10/26/2019 15:48	WG1370189
Chloroethane	U		0.141	2.50	1	10/26/2019 15:48	WG1370189
Chloroform	U		0.0860	0.500	1	10/26/2019 15:48	WG1370189
Chloromethane	U		0.153	1.25	1	10/26/2019 15:48	WG1370189
2-Chlorotoluene	U		0.111	0.500	1	10/26/2019 15:48	WG1370189
4-Chlorotoluene	U		0.0972	0.500	1	10/26/2019 15:48	WG1370189
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/26/2019 15:48	WG1370189
1,2-Dibromoethane	U		0.193	0.500	1	10/26/2019 15:48	WG1370189
Dibromomethane	U		0.117	0.500	1	10/26/2019 15:48	WG1370189
1,2-Dichlorobenzene	U		0.101	0.500	1	10/26/2019 15:48	WG1370189
1,3-Dichlorobenzene	U		0.130	0.500	1	10/26/2019 15:48	WG1370189
1,4-Dichlorobenzene	U		0.121	0.500	1	10/26/2019 15:48	WG1370189
Dichlorodifluoromethane	U		0.127	2.50	1	10/26/2019 15:48	WG1370189
1,1-Dichloroethane	U		0.114	0.500	1	10/26/2019 15:48	WG1370189
1,2-Dichloroethane	U		0.108	0.500	1	10/26/2019 15:48	WG1370189
1,1-Dichloroethene	U		0.188	0.500	1	10/26/2019 15:48	WG1370189
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/26/2019 15:48	WG1370189
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/26/2019 15:48	WG1370189
1,2-Dichloropropane	U		0.190	0.500	1	10/26/2019 15:48	WG1370189
1,1-Dichloropropene	U		0.128	0.500	1	10/26/2019 15:48	WG1370189
1,3-Dichloropropane	U		0.147	1.00	1	10/26/2019 15:48	WG1370189
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/26/2019 15:48	WG1370189
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/26/2019 15:48	WG1370189
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/26/2019 15:48	WG1370189
2,2-Dichloropropane	U		0.0929	0.500	1	10/26/2019 15:48	WG1370189
Di-isopropyl ether	U		0.0924	0.500	1	10/26/2019 15:48	WG1370189
Ethylbenzene	U		0.158	0.500	1	10/26/2019 15:48	WG1370189
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/26/2019 15:48	WG1370189
2-Hexanone	U		0.757	5.00	1	10/26/2019 15:48	WG1370189
n-Hexane	U		0.305	5.00	1	10/26/2019 15:48	WG1370189
Iodomethane	U	JO	0.377	10.0	1	10/26/2019 15:48	WG1370189
Isopropylbenzene	U	JO	0.126	0.500	1	10/26/2019 15:48	WG1370189
p-Isopropyltoluene	U		0.138	0.500	1	10/26/2019 15:48	WG1370189
2-Butanone (MEK)	U		1.28	5.00	1	10/26/2019 15:48	WG1370189

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methylene Chloride	U		1.07	2.50	1	10/26/2019 15:48	WG1370189
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/26/2019 15:48	WG1370189
Methyl tert-butyl ether	U		0.102	0.500	1	10/26/2019 15:48	WG1370189
Naphthalene	U		0.174	2.50	1	10/26/2019 15:48	WG1370189
n-Propylbenzene	U		0.162	0.500	1	10/26/2019 15:48	WG1370189
Styrene	U		0.117	0.500	1	10/26/2019 15:48	WG1370189
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/26/2019 15:48	WG1370189
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/26/2019 15:48	WG1370189
1,1,2-Trichlorotrifluoroethane	U	<u>JO</u>	0.164	0.500	1	10/26/2019 15:48	WG1370189
Tetrachloroethene	U		0.199	0.500	1	10/26/2019 15:48	WG1370189
Toluene	U		0.412	0.500	1	10/26/2019 15:48	WG1370189
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/26/2019 15:48	WG1370189
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/26/2019 15:48	WG1370189
1,1,1-Trichloroethane	U	<u>JO</u>	0.0940	0.500	1	10/26/2019 15:48	WG1370189
1,1,2-Trichloroethane	U		0.186	0.500	1	10/26/2019 15:48	WG1370189
Trichloroethene	U	<u>JO</u>	0.153	0.500	1	10/26/2019 15:48	WG1370189
Trichlorofluoromethane	U		0.130	2.50	1	10/26/2019 15:48	WG1370189
1,2,3-Trichloropropane	U		0.247	2.50	1	10/26/2019 15:48	WG1370189
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/26/2019 15:48	WG1370189
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/26/2019 15:48	WG1370189
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/26/2019 15:48	WG1370189
Vinyl acetate	U		0.645	5.00	1	10/26/2019 15:48	WG1370189
Vinyl chloride	U		0.118	0.500	1	10/26/2019 15:48	WG1370189
Xylenes, Total	U		0.316	1.50	1	10/26/2019 15:48	WG1370189
(S) Toluene-d8	93.2			80.0-120		10/26/2019 15:48	WG1370189
(S) 4-Bromofluorobenzene	91.8			77.0-126		10/26/2019 15:48	WG1370189
(S) 1,2-Dichloroethane-d4	103			70.0-130		10/26/2019 15:48	WG1370189

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3464818-1 10/24/19 17:06

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	U		2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1152061-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1152061-01 10/24/19 18:41 • (DUP) R3464818-3 10/24/19 18:49

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	469000	470000	1	0.229		20

Sample Narrative:

OS: Endpoint pH 4.5
DUP: Endpoint pH 4.5

L1152362-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1152362-01 10/24/19 20:25 • (DUP) R3464818-4 10/24/19 20:33

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	265000	265000	1	0.149		20

Sample Narrative:

OS: Endpoint pH 4.5 HEADSPACE
DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3464818-2 10/24/19 18:32

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	98700	98.7	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3462972-1 10/19/19 09:09

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Chloride	U		51.9	1000
Nitrate	U		22.7	100
Sulfate	U		77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1151823-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1151823-01 10/19/19 12:44 • (DUP) R3462972-3 10/19/19 12:57

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	171000	175000	1	2.03	E	15
Nitrate	2750	2820	1	2.74		15
Sulfate	322000	325000	1	0.903	E	15

L1151886-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1151886-05 10/19/19 17:38 • (DUP) R3462972-6 10/19/19 17:51

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	25800	25000	1	3.14		15
Nitrate	U	0.000	1	0.000		15
Sulfate	17000	16600	1	2.28		15

Laboratory Control Sample (LCS)

(LCS) R3462972-2 10/19/19 09:22

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Chloride	40000	40300	101	80.0-120	
Nitrate	8000	8290	104	80.0-120	
Sulfate	40000	40500	101	80.0-120	



L1151823-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1151823-02 10/19/19 13:10 • (MS) R3462972-4 10/19/19 13:48 • (MSD) R3462972-5 10/19/19 14:01

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	702000	717000	713000	29.2	20.9	1	80.0-120	<u>EV</u>	<u>EV</u>	0.580	15
Nitrate	5000	ND	4940	4900	98.7	98.1	1	80.0-120			0.638	15
Sulfate	50000	461000	474000	471000	25.0	20.1	1	80.0-120	<u>EV</u>	<u>EV</u>	0.519	15

L1151886-05 Original Sample (OS) • Matrix Spike (MS)

(OS) L1151886-05 10/19/19 17:38 • (MS) R3462972-7 10/19/19 18:04

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	25800	72800	94.0	1	80.0-120	
Nitrate	5000	U	4980	99.6	1	80.0-120	
Sulfate	50000	17000	64700	95.5	1	80.0-120	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3465280-1 10/25/19 12:26

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	375	↓	102	1000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1151886-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1151886-03 10/25/19 14:25 • (DUP) R3465280-3 10/25/19 14:44

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC	37600	37200	1	0.882		20

L1152055-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1152055-05 10/25/19 17:41 • (DUP) R3465280-6 10/25/19 17:53

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC	3590	3600	1	0.445		20

Laboratory Control Sample (LCS)

(LCS) R3465280-2 10/25/19 12:54

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC	75000	73300	97.7	85.0-115	

L1152055-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1152055-01 10/25/19 16:24 • (MS) R3465280-4 10/25/19 16:43 • (MSD) R3465280-5 10/25/19 16:59

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC	50000	1950	50400	50400	96.8	96.9	1	80.0-120			0.0794	20

L1152055-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1152055-02 10/25/19 19:48 • (MS) R3465280-7 10/25/19 20:04 • (MSD) R3465280-8 10/25/19 20:20

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC	50000	1900	51400	51100	99.0	98.5	1	80.0-120			0.468	20



Method Blank (MB)

(MB) R3465732-1 10/27/19 22:22

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Iron	U		15.0	100
Manganese	0.390	J	0.250	5.00

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3465732-2 10/27/19 22:25 • (LCSD) R3465732-3 10/27/19 22:29

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Iron	5000	4830	4960	96.6	99.3	80.0-120			2.79	20
Manganese	50.0	49.7	51.1	99.3	102	80.0-120			2.82	20

5 Sr

6 Qc

L1151885-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1151885-05 10/27/19 22:32 • (MS) R3465732-5 10/27/19 22:39 • (MSD) R3465732-6 10/27/19 22:43

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Iron	5000	103	5010	4950	98.1	96.9	1	75.0-125			1.14	20
Manganese	50.0	8.50	57.3	57.0	97.5	97.0	1	75.0-125			0.462	20

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3464797-2 10/24/19 15:39

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	96.4			78.0-120

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS)

(LCS) R3464797-1 10/24/19 14:52

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5930	108	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			105	78.0-120	

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3463477-1 10/22/19 07:49

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1151886-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1151886-04 10/22/19 08:26 • (DUP) R3463477-2 10/22/19 08:46

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	316	321	1	1.61		20
Ethane	U	0.000	1	0.000		20
Ethene	23.7	23.2	1	1.94		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3463477-7 10/22/19 09:11 • (LCSD) R3463477-8 10/22/19 09:15

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	74.2	72.1	109	106	85.0-115			2.95	20
Ethane	129	130	129	101	99.8	85.0-115			1.02	20
Ethene	127	135	133	107	104	85.0-115			2.16	20

L1152024-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1152024-01 10/22/19 07:52 • (MS) R3463477-3 10/22/19 09:01 • (MSD) R3463477-4 10/22/19 09:04

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Methane	67.8	U	73.2	78.3	108	115	1	85.0-115			6.81	20
Ethane	129	U	124	134	95.7	104	1	85.0-115			7.96	20
Ethene	127	U	130	140	102	110	1	85.0-115			7.32	20

L1152055-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1152055-02 10/22/19 08:40 • (MS) R3463477-5 10/22/19 09:06 • (MSD) R3463477-6 10/22/19 09:08

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Methane	67.8	756	758	774	3.08	26.5	1	85.0-115	√	√	2.08	20
Ethane	129	U	133	129	103	100	1	85.0-115			2.41	20



L1152055-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1152055-02 10/22/19 08:40 • (MS) R3463477-5 10/22/19 09:06 • (MSD) R3463477-6 10/22/19 09:08

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Ethene	127	U	138	135	109	106	1	85.0-115			2.50	20

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3465451-2 10/26/19 12:44

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3465451-2 10/26/19 12:44

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	0.982	U	0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	0.356	U	0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	95.5			80.0-120
(S) 4-Bromofluorobenzene	92.7			77.0-126
(S) 1,2-Dichloroethane-d4	100			70.0-130

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Laboratory Control Sample (LCS)

(LCS) R3465451-1 10/26/19 12:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Acetone	125	146	117	19.0-160	
Acrylonitrile	125	168	134	55.0-149	
Benzene	25.0	23.8	95.2	70.0-123	
Bromobenzene	25.0	27.7	111	73.0-121	
Bromodichloromethane	25.0	23.4	93.6	75.0-120	
Bromochloromethane	25.0	26.6	106	76.0-122	
Bromoform	25.0	24.6	98.4	68.0-132	
Bromomethane	25.0	16.1	64.4	10.0-160	
n-Butylbenzene	25.0	29.4	118	73.0-125	
sec-Butylbenzene	25.0	26.3	105	75.0-125	
tert-Butylbenzene	25.0	24.7	98.8	76.0-124	
Carbon disulfide	25.0	22.7	90.8	61.0-128	
Carbon tetrachloride	25.0	21.5	86.0	68.0-126	
Chlorobenzene	25.0	24.1	96.4	80.0-121	
Chlorodibromomethane	25.0	24.8	99.2	77.0-125	
Chloroethane	25.0	28.4	114	47.0-150	
Chloroform	25.0	22.7	90.8	73.0-120	
Chloromethane	25.0	25.8	103	41.0-142	
2-Chlorotoluene	25.0	26.9	108	76.0-123	
4-Chlorotoluene	25.0	26.6	106	75.0-122	
1,2-Dibromo-3-Chloropropane	25.0	25.6	102	58.0-134	
1,2-Dibromoethane	25.0	25.6	102	80.0-122	
Dibromomethane	25.0	26.4	106	80.0-120	
1,2-Dichlorobenzene	25.0	27.8	111	79.0-121	
1,3-Dichlorobenzene	25.0	28.5	114	79.0-120	
1,4-Dichlorobenzene	25.0	27.8	111	79.0-120	
Dichlorodifluoromethane	25.0	22.5	90.0	51.0-149	
1,1-Dichloroethane	25.0	27.6	110	70.0-126	
1,2-Dichloroethane	25.0	28.4	114	70.0-128	
1,1-Dichloroethene	25.0	24.2	96.8	71.0-124	
cis-1,2-Dichloroethene	25.0	24.0	96.0	73.0-120	
trans-1,2-Dichloroethene	25.0	22.5	90.0	73.0-120	
1,2-Dichloropropane	25.0	29.5	118	77.0-125	
1,1-Dichloropropene	25.0	24.6	98.4	74.0-126	
1,3-Dichloropropane	25.0	27.0	108	80.0-120	
cis-1,3-Dichloropropene	25.0	24.9	99.6	80.0-123	
trans-1,3-Dichloropropene	25.0	26.8	107	78.0-124	
trans-1,4-Dichloro-2-butene	25.0	33.7	135	33.0-144	
2,2-Dichloropropane	25.0	23.0	92.0	58.0-130	
Di-isopropyl ether	25.0	29.5	118	58.0-138	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3465451-1 10/26/19 12:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Ethylbenzene	25.0	22.5	90.0	79.0-123	
Hexachloro-1,3-butadiene	25.0	31.4	126	54.0-138	
2-Hexanone	125	172	138	67.0-149	
n-Hexane	25.0	29.8	119	57.0-133	
Iodomethane	125	104	83.2	33.0-147	
Isopropylbenzene	25.0	21.3	85.2	76.0-127	
p-Isopropyltoluene	25.0	27.1	108	76.0-125	
2-Butanone (MEK)	125	139	111	44.0-160	
Methylene Chloride	25.0	22.5	90.0	67.0-120	
4-Methyl-2-pentanone (MIBK)	125	142	114	68.0-142	
Methyl tert-butyl ether	25.0	25.3	101	68.0-125	
Naphthalene	25.0	23.9	95.6	54.0-135	
n-Propylbenzene	25.0	25.2	101	77.0-124	
Styrene	25.0	23.9	95.6	73.0-130	
1,1,1,2-Tetrachloroethane	25.0	23.3	93.2	75.0-125	
1,1,2,2-Tetrachloroethane	25.0	25.9	104	65.0-130	
1,1,2-Trichlorotrifluoroethane	25.0	21.4	85.6	69.0-132	
Tetrachloroethene	25.0	22.9	91.6	72.0-132	
Toluene	25.0	23.7	94.8	79.0-120	
1,2,3-Trichlorobenzene	25.0	27.3	109	50.0-138	
1,2,4-Trichlorobenzene	25.0	30.0	120	57.0-137	
1,1,1-Trichloroethane	25.0	21.4	85.6	73.0-124	
1,1,2-Trichloroethane	25.0	24.5	98.0	80.0-120	
Trichloroethene	25.0	22.2	88.8	78.0-124	
Trichlorofluoromethane	25.0	26.9	108	59.0-147	
1,2,3-Trichloropropane	25.0	26.0	104	73.0-130	
1,2,4-Trimethylbenzene	25.0	25.9	104	76.0-121	
1,2,3-Trimethylbenzene	25.0	26.6	106	77.0-120	
1,3,5-Trimethylbenzene	25.0	25.0	100	76.0-122	
Vinyl acetate	125	164	131	11.0-160	
Vinyl chloride	25.0	32.6	130	67.0-131	
Xylenes, Total	75.0	68.0	90.7	79.0-123	
(S) Toluene-d8			93.8	80.0-120	
(S) 4-Bromofluorobenzene			91.0	77.0-126	
(S) 1,2-Dichloroethane-d4			101	70.0-130	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration method criteria.
V	The sample concentration is too high to evaluate accurate spike recoveries.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

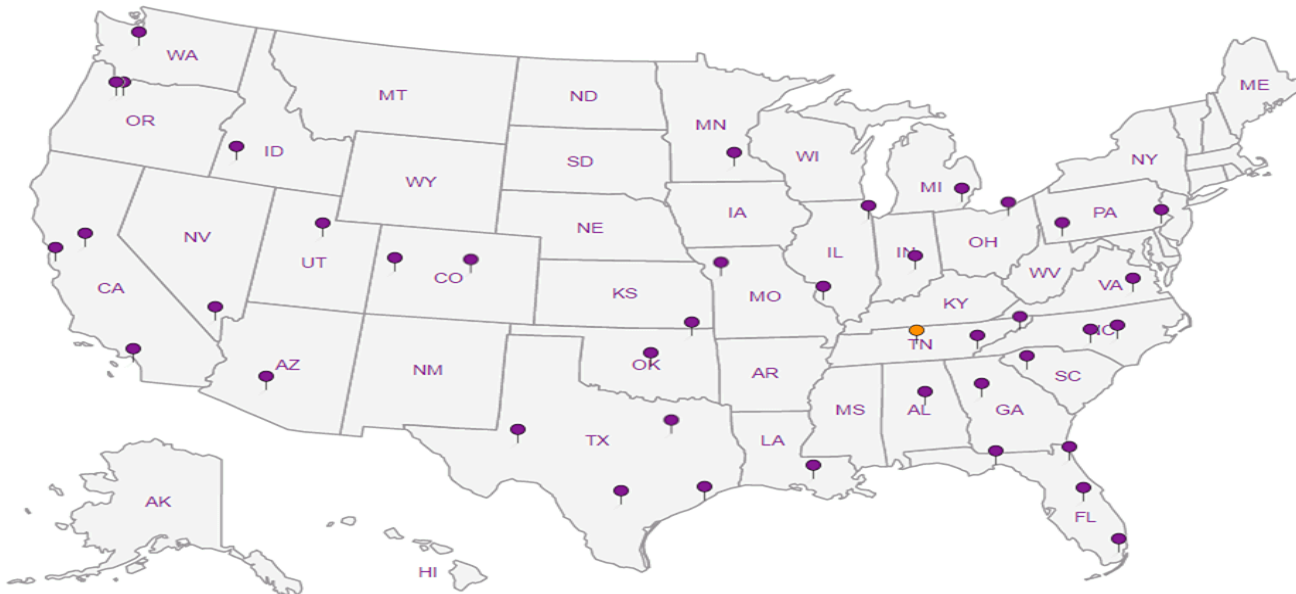
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

PES-Seattle

Billing Information: PES-Seattle

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pres Chk


12 12

Pace Analytical
National Center for Testing & Innovation

Report to: Bill Haldeman/Brian O'neal

Email To: on file

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



Project Description: American Linen

City/State: Seattle, WA

Collected:

Phone: on file

Fax:

Client Project #: 1413.001.02.501E

Lab Project #: PESENVSWA-ALP

Collected by (print): K. Zygas

Site/Facility ID #: American Linen

P.O. #:

Collected by (signature): [Signature]

Rush? (Lab MUST Be Notified)

Quote #:

Immediately Packed on Ice: N Y

Same Day Five Day

Next Day 5 Day (Rad Only)

Two Day 10 Day (Rad Only)

Three Day

Date Results Needed

No. of Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	**NO3,SO4,Chloride**	NWTPHGX	VOCs (V8260LLC)	Total Fe Mn 6020	TOC	Alkalinity	EEM (RSK175LL)
MW-123-101819	Grab	GW	75	10/18/19	0955	12	X	X	X	X	X	X	X
MW125-101819		GW	28		1105	12	X	X	X	X	X	X	X
W-MW-02-101819		GW	75		1210	12	X	X	X	X	X	X	X
MW104-101819		GW	124		1300	12	X	X	X	X	X	X	X
MW106-101819	↓	GW	135	↓	1515	12	X	X	X	X	X	X	X
TB-101819	—	GW	—	↓	1530	1	X	X	X	X	X	X	X
		GW											
		GW											
		GW											
		GW											

* Matrix: SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

Samples returned via: UPS FedEx Courier

Tracking # 9275 8600 8238

pH _____ Temp _____

Flow _____ Other _____

Sample Receipt Checklist

COC Seal Present/Intact: NP N

COC Signed/Accurate: Y N

Bottles arrive intact: Y N

Correct bottles used: Y N

Sufficient volume sent: Y N

If Applicable

VOA Zero Headspace: Y N

Preservation Correct/Checked: Y N

RAD SCREEN: <0.5 mP/hr

Relinquished by: (Signature) [Signature] Date: 10/18/19 Time: 1600

Received by: (Signature) _____ Trip Blank Received: 1 Yes/No HCl/MeOH TBR

Relinquished by: (Signature) [Signature] Date: _____ Time: _____

Received by: (Signature) _____ Temp: 5.1-2=49 Bottles Received: 57

If preservation required by Login: Date/Time

Relinquished by: (Signature) _____ Date: _____ Time: _____

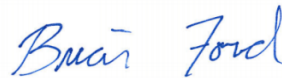
Received for lab by: (Signature) [Signature] Date: 10/19/19 Time: 8:45

Condition: NCF / OK

PES Environmental, Inc.- WA

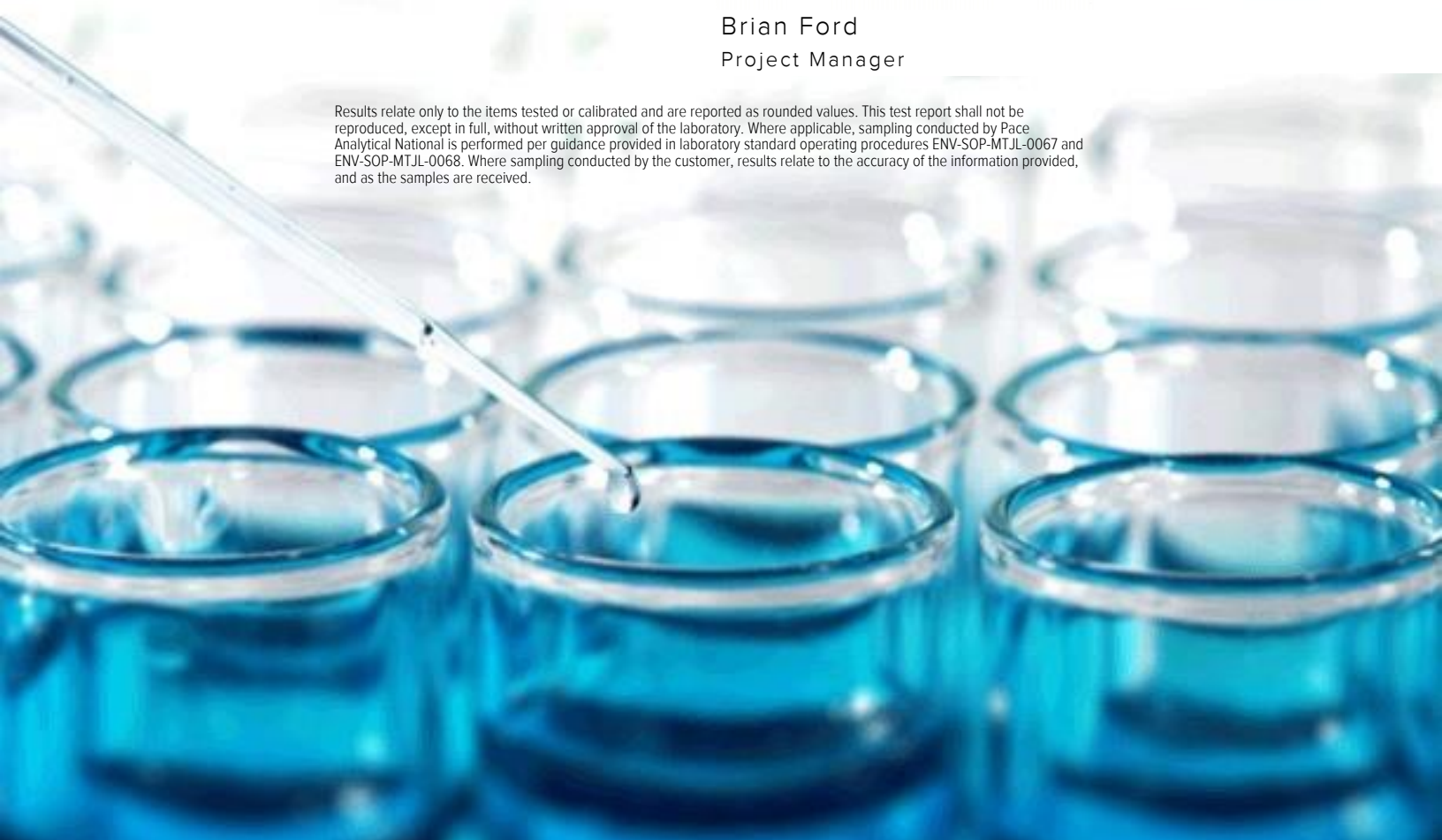
Sample Delivery Group: L1152333
Samples Received: 10/22/2019
Project Number: 1413 001 02 501E
Description: ALS
Site: 1413 001 02 501E
Report To: Brian O'Neal/Bill Haldeman
1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





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FMW-131-102119 L1152333-03	9	
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SAMPLE SUMMARY



GEI-1-102119 L1152333-01 GW

Collected by
Chris Deboer
Collected date/time
10/21/19 11:11
Received date/time
10/22/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1369144	1	10/24/19 21:24	10/24/19 21:24	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1367181	1	10/23/19 02:15	10/23/19 02:15	NJM	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1368783	1	10/24/19 22:09	10/24/19 22:09	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1368592	1	10/24/19 14:45	10/26/19 16:13	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1367825	1	10/23/19 12:12	10/23/19 12:12	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1368615	10	10/24/19 11:33	10/24/19 11:33	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1371177	1	10/29/19 05:43	10/29/19 05:43	ADM	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

GEI-2-102119 L1152333-02 GW

Collected by
Chris Deboer
Collected date/time
10/21/19 12:04
Received date/time
10/22/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1369144	1	10/24/19 21:38	10/24/19 21:38	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1367181	1	10/23/19 02:31	10/23/19 02:31	NJM	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1368783	50	10/24/19 23:36	10/24/19 23:36	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1368592	1	10/24/19 14:45	10/26/19 16:17	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1367825	1	10/23/19 13:03	10/23/19 13:03	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1368615	10	10/24/19 11:39	10/24/19 11:39	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1371177	1	10/29/19 06:03	10/29/19 06:03	ADM	Mt. Juliet, TN

FMW-131-102119 L1152333-03 GW

Collected by
Chris Deboer
Collected date/time
10/21/19 13:15
Received date/time
10/22/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1369144	1	10/24/19 21:46	10/24/19 21:46	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1367181	1	10/23/19 02:48	10/23/19 02:48	NJM	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1370126	1	10/26/19 13:31	10/26/19 13:31	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1368592	1	10/24/19 14:45	10/26/19 16:20	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1367825	1	10/23/19 13:15	10/23/19 13:15	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1371177	1	10/29/19 06:23	10/29/19 06:23	ADM	Mt. Juliet, TN

MW-112-102119 L1152333-04 GW

Collected by
Chris Deboer
Collected date/time
10/21/19 14:35
Received date/time
10/22/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1369144	1	10/24/19 21:55	10/24/19 21:55	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1367181	1	10/23/19 03:04	10/23/19 03:04	NJM	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1370126	1	10/26/19 13:54	10/26/19 13:54	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1368592	1	10/24/19 14:45	10/26/19 16:24	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1373020	1	11/02/19 23:35	11/02/19 23:35	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1367825	1	10/23/19 13:29	10/23/19 13:29	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1371177	1	10/29/19 06:43	10/29/19 06:43	ADM	Mt. Juliet, TN

TRIPBLANK-102119 L1152333-05 GW

Collected by
Chris Deboer
Collected date/time
10/21/19 00:00
Received date/time
10/22/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1371177	1	10/29/19 04:02	10/29/19 04:02	ADM	Mt. Juliet, TN



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

Sample Delivery Group (SDG) Narrative

VOC pH outside of method requirement.

<u>Lab Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L1152333-04	MW-112-102119	NWTPHGX

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	589000		2710	20000	1	10/24/2019 21:24	WG1369144

Sample Narrative:

L1152333-01 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	14700		51.9	1000	1	10/23/2019 02:15	WG1367181
Nitrate	U		22.7	100	1	10/23/2019 02:15	WG1367181
Sulfate	2760	J	77.4	5000	1	10/23/2019 02:15	WG1367181

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	7550		102	1000	1	10/24/2019 22:09	WG1368783

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	16500		15.0	100	1	10/26/2019 16:13	WG1368592
Manganese	2820		0.250	5.00	1	10/26/2019 16:13	WG1368592

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	21400		2.87	6.78	10	10/24/2019 11:33	WG1368615
Ethane	U		0.296	1.29	1	10/23/2019 12:12	WG1367825
Ethene	U		0.422	1.27	1	10/23/2019 12:12	WG1367825

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.45	J J4	1.05	25.0	1	10/29/2019 05:43	WG1371177
Acrylonitrile	U	J4	0.873	5.00	1	10/29/2019 05:43	WG1371177
Benzene	U		0.0896	0.500	1	10/29/2019 05:43	WG1371177
Bromobenzene	U		0.133	0.500	1	10/29/2019 05:43	WG1371177
Bromodichloromethane	U	J4	0.0800	0.500	1	10/29/2019 05:43	WG1371177
Bromochloromethane	U		0.145	0.500	1	10/29/2019 05:43	WG1371177
Bromoform	U		0.186	0.500	1	10/29/2019 05:43	WG1371177
Bromomethane	U		0.157	2.50	1	10/29/2019 05:43	WG1371177
n-Butylbenzene	U		0.143	0.500	1	10/29/2019 05:43	WG1371177
sec-Butylbenzene	U		0.134	0.500	1	10/29/2019 05:43	WG1371177
tert-Butylbenzene	U		0.183	0.500	1	10/29/2019 05:43	WG1371177
Carbon disulfide	U		0.101	0.500	1	10/29/2019 05:43	WG1371177
Carbon tetrachloride	U		0.159	0.500	1	10/29/2019 05:43	WG1371177
Chlorobenzene	U		0.140	0.500	1	10/29/2019 05:43	WG1371177
Chlorodibromomethane	U		0.128	0.500	1	10/29/2019 05:43	WG1371177
Chloroethane	U		0.141	2.50	1	10/29/2019 05:43	WG1371177
Chloroform	U		0.0860	0.500	1	10/29/2019 05:43	WG1371177
Chloromethane	U	JO	0.153	1.25	1	10/29/2019 05:43	WG1371177
2-Chlorotoluene	U		0.111	0.500	1	10/29/2019 05:43	WG1371177
4-Chlorotoluene	U		0.0972	0.500	1	10/29/2019 05:43	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 05:43	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 05:43	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 05:43	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 05:43	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 05:43	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 05:43	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 05:43	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 05:43	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 05:43	WG1371177
1,1-Dichloroethene	U		0.188	0.500	1	10/29/2019 05:43	WG1371177
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/29/2019 05:43	WG1371177
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/29/2019 05:43	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 05:43	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 05:43	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 05:43	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 05:43	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 05:43	WG1371177
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/29/2019 05:43	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 05:43	WG1371177
Di-isopropyl ether	U	JO	0.0924	0.500	1	10/29/2019 05:43	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 05:43	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 05:43	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 05:43	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 05:43	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 05:43	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 05:43	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 05:43	WG1371177
2-Butanone (MEK)	U	JO	1.28	5.00	1	10/29/2019 05:43	WG1371177
Methylene Chloride	U		1.07	2.50	1	10/29/2019 05:43	WG1371177
4-Methyl-2-pentanone (MIBK)	U	JO	0.823	5.00	1	10/29/2019 05:43	WG1371177
Methyl tert-butyl ether	U		0.102	0.500	1	10/29/2019 05:43	WG1371177
Naphthalene	0.239	J	0.174	2.50	1	10/29/2019 05:43	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 05:43	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 05:43	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 05:43	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 05:43	WG1371177
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 05:43	WG1371177
Tetrachloroethene	U		0.199	0.500	1	10/29/2019 05:43	WG1371177
Toluene	U		0.412	0.500	1	10/29/2019 05:43	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 05:43	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 05:43	WG1371177
1,1,1-Trichloroethane	U	J4	0.0940	0.500	1	10/29/2019 05:43	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 05:43	WG1371177
Trichloroethene	U		0.153	0.500	1	10/29/2019 05:43	WG1371177
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 05:43	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 05:43	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 05:43	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 05:43	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 05:43	WG1371177
Vinyl acetate	U	JO	0.645	5.00	1	10/29/2019 05:43	WG1371177
Vinyl chloride	U		0.118	0.500	1	10/29/2019 05:43	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 05:43	WG1371177
(S) Toluene-d8	94.8			80.0-120		10/29/2019 05:43	WG1371177
(S) 4-Bromofluorobenzene	109			77.0-126		10/29/2019 05:43	WG1371177
(S) 1,2-Dichloroethane-d4	97.2			70.0-130		10/29/2019 05:43	WG1371177

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	512000		2710	20000	1	10/24/2019 21:38	WG1369144

Sample Narrative:

L1152333-02 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	24800		51.9	1000	1	10/23/2019 02:31	WG1367181
Nitrate	U		22.7	100	1	10/23/2019 02:31	WG1367181
Sulfate	47800		77.4	5000	1	10/23/2019 02:31	WG1367181

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	343000		5100	50000	50	10/24/2019 23:36	WG1368783

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	13200		15.0	100	1	10/26/2019 16:17	WG1368592
Manganese	496		0.250	5.00	1	10/26/2019 16:17	WG1368592

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	10000		2.87	6.78	10	10/24/2019 11:39	WG1368615
Ethane	59.2		0.296	1.29	1	10/23/2019 13:03	WG1367825
Ethene	27.5		0.422	1.27	1	10/23/2019 13:03	WG1367825

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.37	J J4	1.05	25.0	1	10/29/2019 06:03	WG1371177
Acrylonitrile	U	J4	0.873	5.00	1	10/29/2019 06:03	WG1371177
Benzene	3.80		0.0896	0.500	1	10/29/2019 06:03	WG1371177
Bromobenzene	U		0.133	0.500	1	10/29/2019 06:03	WG1371177
Bromodichloromethane	U	J4	0.0800	0.500	1	10/29/2019 06:03	WG1371177
Bromochloromethane	U		0.145	0.500	1	10/29/2019 06:03	WG1371177
Bromoform	U		0.186	0.500	1	10/29/2019 06:03	WG1371177
Bromomethane	U		0.157	2.50	1	10/29/2019 06:03	WG1371177
n-Butylbenzene	U		0.143	0.500	1	10/29/2019 06:03	WG1371177
sec-Butylbenzene	U		0.134	0.500	1	10/29/2019 06:03	WG1371177
tert-Butylbenzene	U		0.183	0.500	1	10/29/2019 06:03	WG1371177
Carbon disulfide	U		0.101	0.500	1	10/29/2019 06:03	WG1371177
Carbon tetrachloride	U		0.159	0.500	1	10/29/2019 06:03	WG1371177
Chlorobenzene	U		0.140	0.500	1	10/29/2019 06:03	WG1371177
Chlorodibromomethane	U		0.128	0.500	1	10/29/2019 06:03	WG1371177
Chloroethane	U		0.141	2.50	1	10/29/2019 06:03	WG1371177
Chloroform	U		0.0860	0.500	1	10/29/2019 06:03	WG1371177
Chloromethane	U	JO	0.153	1.25	1	10/29/2019 06:03	WG1371177
2-Chlorotoluene	U		0.111	0.500	1	10/29/2019 06:03	WG1371177
4-Chlorotoluene	U		0.0972	0.500	1	10/29/2019 06:03	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/21/19 12:04

L1152333

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 06:03	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 06:03	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 06:03	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 06:03	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 06:03	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 06:03	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 06:03	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 06:03	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 06:03	WG1371177
1,1-Dichloroethene	U		0.188	0.500	1	10/29/2019 06:03	WG1371177
cis-1,2-Dichloroethene	20.1		0.0933	0.500	1	10/29/2019 06:03	WG1371177
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/29/2019 06:03	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 06:03	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 06:03	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 06:03	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 06:03	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 06:03	WG1371177
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/29/2019 06:03	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 06:03	WG1371177
Di-isopropyl ether	0.194	JJO	0.0924	0.500	1	10/29/2019 06:03	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 06:03	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 06:03	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 06:03	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 06:03	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 06:03	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 06:03	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 06:03	WG1371177
2-Butanone (MEK)	U	JO	1.28	5.00	1	10/29/2019 06:03	WG1371177
Methylene Chloride	U		1.07	2.50	1	10/29/2019 06:03	WG1371177
4-Methyl-2-pentanone (MIBK)	U	JO	0.823	5.00	1	10/29/2019 06:03	WG1371177
Methyl tert-butyl ether	0.252	J	0.102	0.500	1	10/29/2019 06:03	WG1371177
Naphthalene	U		0.174	2.50	1	10/29/2019 06:03	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 06:03	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 06:03	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 06:03	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 06:03	WG1371177
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 06:03	WG1371177
Tetrachloroethene	U		0.199	0.500	1	10/29/2019 06:03	WG1371177
Toluene	U		0.412	0.500	1	10/29/2019 06:03	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 06:03	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 06:03	WG1371177
1,1,1-Trichloroethane	U	J4	0.0940	0.500	1	10/29/2019 06:03	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 06:03	WG1371177
Trichloroethene	U		0.153	0.500	1	10/29/2019 06:03	WG1371177
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 06:03	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 06:03	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 06:03	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 06:03	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 06:03	WG1371177
Vinyl acetate	U	JO	0.645	5.00	1	10/29/2019 06:03	WG1371177
Vinyl chloride	88.2		0.118	0.500	1	10/29/2019 06:03	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 06:03	WG1371177
(S) Toluene-d8	94.4			80.0-120		10/29/2019 06:03	WG1371177
(S) 4-Bromofluorobenzene	107			77.0-126		10/29/2019 06:03	WG1371177
(S) 1,2-Dichloroethane-d4	98.9			70.0-130		10/29/2019 06:03	WG1371177

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	108000		2710	20000	1	10/24/2019 21:46	WG1369144

Sample Narrative:

L1152333-03 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	6000		51.9	1000	1	10/23/2019 02:48	WG1367181
Nitrate	U		22.7	100	1	10/23/2019 02:48	WG1367181
Sulfate	2560	J	77.4	5000	1	10/23/2019 02:48	WG1367181

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	1910	B	102	1000	1	10/26/2019 13:31	WG1370126

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	608		15.0	100	1	10/26/2019 16:20	WG1368592
Manganese	589		0.250	5.00	1	10/26/2019 16:20	WG1368592

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	45.6		0.287	0.678	1	10/23/2019 13:15	WG1367825
Ethane	U		0.296	1.29	1	10/23/2019 13:15	WG1367825
Ethene	U		0.422	1.27	1	10/23/2019 13:15	WG1367825

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	2.58	J J4	1.05	25.0	1	10/29/2019 06:23	WG1371177
Acrylonitrile	U	J4	0.873	5.00	1	10/29/2019 06:23	WG1371177
Benzene	U		0.0896	0.500	1	10/29/2019 06:23	WG1371177
Bromobenzene	U		0.133	0.500	1	10/29/2019 06:23	WG1371177
Bromodichloromethane	U	J4	0.0800	0.500	1	10/29/2019 06:23	WG1371177
Bromochloromethane	U		0.145	0.500	1	10/29/2019 06:23	WG1371177
Bromoform	U		0.186	0.500	1	10/29/2019 06:23	WG1371177
Bromomethane	U		0.157	2.50	1	10/29/2019 06:23	WG1371177
n-Butylbenzene	U		0.143	0.500	1	10/29/2019 06:23	WG1371177
sec-Butylbenzene	U		0.134	0.500	1	10/29/2019 06:23	WG1371177
tert-Butylbenzene	U		0.183	0.500	1	10/29/2019 06:23	WG1371177
Carbon disulfide	U		0.101	0.500	1	10/29/2019 06:23	WG1371177
Carbon tetrachloride	U		0.159	0.500	1	10/29/2019 06:23	WG1371177
Chlorobenzene	U		0.140	0.500	1	10/29/2019 06:23	WG1371177
Chlorodibromomethane	U		0.128	0.500	1	10/29/2019 06:23	WG1371177
Chloroethane	U		0.141	2.50	1	10/29/2019 06:23	WG1371177
Chloroform	U		0.0860	0.500	1	10/29/2019 06:23	WG1371177
Chloromethane	U	JO	0.153	1.25	1	10/29/2019 06:23	WG1371177
2-Chlorotoluene	U		0.111	0.500	1	10/29/2019 06:23	WG1371177
4-Chlorotoluene	U		0.0972	0.500	1	10/29/2019 06:23	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/21/19 13:15

L1152333

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 06:23	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 06:23	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 06:23	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 06:23	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 06:23	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 06:23	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 06:23	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 06:23	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 06:23	WG1371177
1,1-Dichloroethene	U		0.188	0.500	1	10/29/2019 06:23	WG1371177
cis-1,2-Dichloroethene	10.5		0.0933	0.500	1	10/29/2019 06:23	WG1371177
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/29/2019 06:23	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 06:23	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 06:23	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 06:23	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 06:23	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 06:23	WG1371177
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/29/2019 06:23	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 06:23	WG1371177
Di-isopropyl ether	U	JO	0.0924	0.500	1	10/29/2019 06:23	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 06:23	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 06:23	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 06:23	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 06:23	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 06:23	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 06:23	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 06:23	WG1371177
2-Butanone (MEK)	U	JO	1.28	5.00	1	10/29/2019 06:23	WG1371177
Methylene Chloride	U		1.07	2.50	1	10/29/2019 06:23	WG1371177
4-Methyl-2-pentanone (MIBK)	U	JO	0.823	5.00	1	10/29/2019 06:23	WG1371177
Methyl tert-butyl ether	U		0.102	0.500	1	10/29/2019 06:23	WG1371177
Naphthalene	U		0.174	2.50	1	10/29/2019 06:23	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 06:23	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 06:23	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 06:23	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 06:23	WG1371177
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 06:23	WG1371177
Tetrachloroethene	U		0.199	0.500	1	10/29/2019 06:23	WG1371177
Toluene	U		0.412	0.500	1	10/29/2019 06:23	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 06:23	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 06:23	WG1371177
1,1,1-Trichloroethane	U	J4	0.0940	0.500	1	10/29/2019 06:23	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 06:23	WG1371177
Trichloroethene	U		0.153	0.500	1	10/29/2019 06:23	WG1371177
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 06:23	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 06:23	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 06:23	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 06:23	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 06:23	WG1371177
Vinyl acetate	U	JO	0.645	5.00	1	10/29/2019 06:23	WG1371177
Vinyl chloride	0.140	J	0.118	0.500	1	10/29/2019 06:23	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 06:23	WG1371177
(S) Toluene-d8	97.4			80.0-120		10/29/2019 06:23	WG1371177
(S) 4-Bromofluorobenzene	109			77.0-126		10/29/2019 06:23	WG1371177
(S) 1,2-Dichloroethane-d4	99.4			70.0-130		10/29/2019 06:23	WG1371177

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	58600		2710	20000	1	10/24/2019 21:55	WG1369144

Sample Narrative:

L1152333-04 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	5470		51.9	1000	1	10/23/2019 03:04	WG1367181
Nitrate	U		22.7	100	1	10/23/2019 03:04	WG1367181
Sulfate	1820	J	77.4	5000	1	10/23/2019 03:04	WG1367181

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	11100		102	1000	1	10/26/2019 13:54	WG1370126

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	1700		15.0	100	1	10/26/2019 16:24	WG1368592
Manganese	169		0.250	5.00	1	10/26/2019 16:24	WG1368592

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	96.6	B, J	31.6	100	1	11/02/2019 23:35	WG1373020
(S) a,a,a-Trifluorotoluene(FID)	96.1			78.0-120		11/02/2019 23:35	WG1373020

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	388		0.287	0.678	1	10/23/2019 13:29	WG1367825
Ethane	5.75		0.296	1.29	1	10/23/2019 13:29	WG1367825
Ethene	U		0.422	1.27	1	10/23/2019 13:29	WG1367825

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	2.72	J, J4	1.05	25.0	1	10/29/2019 06:43	WG1371177
Acrylonitrile	U	J4	0.873	5.00	1	10/29/2019 06:43	WG1371177
Benzene	U		0.0896	0.500	1	10/29/2019 06:43	WG1371177
Bromobenzene	U		0.133	0.500	1	10/29/2019 06:43	WG1371177
Bromodichloromethane	U	J4	0.0800	0.500	1	10/29/2019 06:43	WG1371177
Bromochloromethane	U		0.145	0.500	1	10/29/2019 06:43	WG1371177
Bromoform	U		0.186	0.500	1	10/29/2019 06:43	WG1371177
Bromomethane	U		0.157	2.50	1	10/29/2019 06:43	WG1371177
n-Butylbenzene	U		0.143	0.500	1	10/29/2019 06:43	WG1371177
sec-Butylbenzene	U		0.134	0.500	1	10/29/2019 06:43	WG1371177
tert-Butylbenzene	U		0.183	0.500	1	10/29/2019 06:43	WG1371177
Carbon disulfide	U		0.101	0.500	1	10/29/2019 06:43	WG1371177
Carbon tetrachloride	U		0.159	0.500	1	10/29/2019 06:43	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/21/19 14:35

L1152333

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/29/2019 06:43	WG1371177
Chlorodibromomethane	U		0.128	0.500	1	10/29/2019 06:43	WG1371177
Chloroethane	U		0.141	2.50	1	10/29/2019 06:43	WG1371177
Chloroform	U		0.0860	0.500	1	10/29/2019 06:43	WG1371177
Chloromethane	U	JO	0.153	1.25	1	10/29/2019 06:43	WG1371177
2-Chlorotoluene	U		0.111	0.500	1	10/29/2019 06:43	WG1371177
4-Chlorotoluene	U		0.0972	0.500	1	10/29/2019 06:43	WG1371177
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 06:43	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 06:43	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 06:43	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 06:43	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 06:43	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 06:43	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 06:43	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 06:43	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 06:43	WG1371177
1,1-Dichloroethene	U		0.188	0.500	1	10/29/2019 06:43	WG1371177
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/29/2019 06:43	WG1371177
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/29/2019 06:43	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 06:43	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 06:43	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 06:43	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 06:43	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 06:43	WG1371177
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/29/2019 06:43	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 06:43	WG1371177
Di-isopropyl ether	U	JO	0.0924	0.500	1	10/29/2019 06:43	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 06:43	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 06:43	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 06:43	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 06:43	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 06:43	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 06:43	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 06:43	WG1371177
2-Butanone (MEK)	U	JO	1.28	5.00	1	10/29/2019 06:43	WG1371177
Methylene Chloride	U		1.07	2.50	1	10/29/2019 06:43	WG1371177
4-Methyl-2-pentanone (MIBK)	U	JO	0.823	5.00	1	10/29/2019 06:43	WG1371177
Methyl tert-butyl ether	U		0.102	0.500	1	10/29/2019 06:43	WG1371177
Naphthalene	U		0.174	2.50	1	10/29/2019 06:43	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 06:43	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 06:43	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 06:43	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 06:43	WG1371177
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 06:43	WG1371177
Tetrachloroethene	U		0.199	0.500	1	10/29/2019 06:43	WG1371177
Toluene	U		0.412	0.500	1	10/29/2019 06:43	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 06:43	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 06:43	WG1371177
1,1,1-Trichloroethane	U	J4	0.0940	0.500	1	10/29/2019 06:43	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 06:43	WG1371177
Trichloroethene	U		0.153	0.500	1	10/29/2019 06:43	WG1371177
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 06:43	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 06:43	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 06:43	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 06:43	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 06:43	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/29/2019 06:43	WG1371177
Vinyl chloride	U		0.118	0.500	1	10/29/2019 06:43	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 06:43	WG1371177
<i>(S) Toluene-d8</i>	96.1			80.0-120		10/29/2019 06:43	WG1371177
<i>(S) 4-Bromofluorobenzene</i>	108			77.0-126		10/29/2019 06:43	WG1371177
<i>(S) 1,2-Dichloroethane-d4</i>	97.8			70.0-130		10/29/2019 06:43	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U	J4	1.05	25.0	1	10/29/2019 04:02	WG1371177
Acrylonitrile	U	J4	0.873	5.00	1	10/29/2019 04:02	WG1371177
Benzene	U		0.0896	0.500	1	10/29/2019 04:02	WG1371177
Bromobenzene	U		0.133	0.500	1	10/29/2019 04:02	WG1371177
Bromodichloromethane	U	J4	0.0800	0.500	1	10/29/2019 04:02	WG1371177
Bromochloromethane	U		0.145	0.500	1	10/29/2019 04:02	WG1371177
Bromoform	U		0.186	0.500	1	10/29/2019 04:02	WG1371177
Bromomethane	U		0.157	2.50	1	10/29/2019 04:02	WG1371177
n-Butylbenzene	U		0.143	0.500	1	10/29/2019 04:02	WG1371177
sec-Butylbenzene	U		0.134	0.500	1	10/29/2019 04:02	WG1371177
tert-Butylbenzene	U		0.183	0.500	1	10/29/2019 04:02	WG1371177
Carbon disulfide	U		0.101	0.500	1	10/29/2019 04:02	WG1371177
Carbon tetrachloride	U		0.159	0.500	1	10/29/2019 04:02	WG1371177
Chlorobenzene	U		0.140	0.500	1	10/29/2019 04:02	WG1371177
Chlorodibromomethane	U		0.128	0.500	1	10/29/2019 04:02	WG1371177
Chloroethane	U		0.141	2.50	1	10/29/2019 04:02	WG1371177
Chloroform	U		0.0860	0.500	1	10/29/2019 04:02	WG1371177
Chloromethane	U	JO	0.153	1.25	1	10/29/2019 04:02	WG1371177
2-Chlorotoluene	U		0.111	0.500	1	10/29/2019 04:02	WG1371177
4-Chlorotoluene	U		0.0972	0.500	1	10/29/2019 04:02	WG1371177
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 04:02	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 04:02	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 04:02	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 04:02	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 04:02	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 04:02	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 04:02	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 04:02	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 04:02	WG1371177
1,1-Dichloroethene	U		0.188	0.500	1	10/29/2019 04:02	WG1371177
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/29/2019 04:02	WG1371177
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/29/2019 04:02	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 04:02	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 04:02	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 04:02	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 04:02	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 04:02	WG1371177
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/29/2019 04:02	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 04:02	WG1371177
Di-isopropyl ether	U	JO	0.0924	0.500	1	10/29/2019 04:02	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 04:02	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 04:02	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 04:02	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 04:02	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 04:02	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 04:02	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 04:02	WG1371177
2-Butanone (MEK)	U	JO	1.28	5.00	1	10/29/2019 04:02	WG1371177
Methylene Chloride	U		1.07	2.50	1	10/29/2019 04:02	WG1371177
4-Methyl-2-pentanone (MIBK)	U	JO	0.823	5.00	1	10/29/2019 04:02	WG1371177
Methyl tert-butyl ether	U		0.102	0.500	1	10/29/2019 04:02	WG1371177
Naphthalene	U		0.174	2.50	1	10/29/2019 04:02	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 04:02	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 04:02	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 04:02	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 04:02	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/21/19 00:00

L1152333

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 04:02	WG1371177
Tetrachloroethene	U		0.199	0.500	1	10/29/2019 04:02	WG1371177
Toluene	U		0.412	0.500	1	10/29/2019 04:02	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 04:02	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 04:02	WG1371177
1,1,1-Trichloroethane	U	<u>J4</u>	0.0940	0.500	1	10/29/2019 04:02	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 04:02	WG1371177
Trichloroethene	U		0.153	0.500	1	10/29/2019 04:02	WG1371177
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 04:02	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 04:02	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 04:02	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 04:02	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 04:02	WG1371177
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/29/2019 04:02	WG1371177
Vinyl chloride	U		0.118	0.500	1	10/29/2019 04:02	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 04:02	WG1371177
(S) Toluene-d8	98.4			80.0-120		10/29/2019 04:02	WG1371177
(S) 4-Bromofluorobenzene	110			77.0-126		10/29/2019 04:02	WG1371177
(S) 1,2-Dichloroethane-d4	96.8			70.0-130		10/29/2019 04:02	WG1371177

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3464935-1 10/24/19 21:15

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	U		2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1152333-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1152333-01 10/24/19 21:24 • (DUP) R3464935-2 10/24/19 21:31

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	589000	589000	1	0.0563		20

Sample Narrative:

OS: Endpoint pH 4.5
DUP: Endpoint pH 4.5

L1152791-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1152791-01 10/24/19 23:11 • (DUP) R3464935-4 10/24/19 23:20

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	519000	520000	1	0.243		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace
DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3464935-3 10/24/19 22:38

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	98500	98.5	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3463970-1 10/22/19 09:41

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Chloride	U		51.9	1000
Nitrate	U		22.7	100
Sulfate	U		77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1152322-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1152322-01 10/22/19 14:34 • (DUP) R3463970-9 10/23/19 03:53

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	6100	6720	1	9.68		15
Nitrate	210	233	1	10.7		15
Sulfate	89600	0.000	1	200	J3	15

L1152340-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1152340-02 10/23/19 04:26 • (DUP) R3463970-10 10/23/19 05:15

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	20200	19800	1	1.66		15
Nitrate	U	0.000	1	0.000		15
Sulfate	26800	26800	1	0.133		15

Laboratory Control Sample (LCS)

(LCS) R3463970-2 10/22/19 09:58

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Chloride	40000	37700	94.3	80.0-120	
Nitrate	8000	7790	97.4	80.0-120	
Sulfate	40000	37800	94.4	80.0-120	



L1152324-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1152324-03 10/23/19 03:21 • (MS) R3463970-8 10/23/19 03:37

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Chloride	50000	1960	53800	104	1	80.0-120	
Nitrate	5000	110	5070	99.1	1	80.0-120	
Sulfate	50000	ND	55900	104	1	80.0-120	

L1152346-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1152346-01 10/23/19 06:37 • (MS) R3463970-11 10/23/19 06:54 • (MSD) R3463970-12 10/23/19 07:10

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Chloride	50000	2070	48300	48100	92.4	92.1	1	80.0-120			0.294	15
Nitrate	5000	ND	4600	4730	90.7	93.4	1	80.0-120			2.84	15
Sulfate	50000	29900	75600	75300	91.4	90.9	1	80.0-120			0.297	15

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3465005-1 10/24/19 10:49

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	277	↓	102	1000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1152303-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1152303-03 10/24/19 18:56 • (DUP) R3465005-3 10/24/19 19:07

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	1770	1750	1	1.42		20

L1152333-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1152333-01 10/24/19 22:09 • (DUP) R3465005-6 10/24/19 22:23

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	7550	7550	1	0.106		20

Laboratory Control Sample (LCS)

(LCS) R3465005-2 10/24/19 11:18

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC (Total Organic Carbon)	75000	71900	95.8	85.0-115	

L1152303-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1152303-04 10/24/19 20:21 • (MS) R3465005-4 10/24/19 20:40 • (MSD) R3465005-5 10/24/19 20:56

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	1480	49000	49100	95.1	95.3	1	80.0-120			0.224	20

L1153269-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1153269-02 10/25/19 00:08 • (MS) R3465005-7 10/25/19 00:25 • (MSD) R3465005-8 10/25/19 00:42

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	1200	50700	48800	98.9	95.3	1	80.0-120			3.68	20



Method Blank (MB)

(MB) R3466121-1 10/26/19 11:45

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	434	J	102	1000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1152741-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1152741-04 10/26/19 15:20 • (DUP) R3466121-3 10/26/19 15:34

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC	ND	300	1	0.000		20

L1152823-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1152823-04 10/26/19 20:20 • (DUP) R3466121-6 10/26/19 20:39

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC	5510	5450	1	1.04		20

Laboratory Control Sample (LCS)

(LCS) R3466121-2 10/26/19 12:26

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC	75000	73300	97.7	85.0-115	

L1152741-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1152741-06 10/26/19 17:52 • (MS) R3466121-4 10/26/19 18:20 • (MSD) R3466121-5 10/26/19 18:43

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC	50000	ND	48400	48500	96.4	96.7	1	80.0-120			0.310	20

L1152823-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1152823-08 10/27/19 00:02 • (MS) R3466121-7 10/27/19 00:26 • (MSD) R3466121-8 10/27/19 00:53

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC	50000	168	50800	50800	101	101	1	80.0-120			0.0788	20



Method Blank (MB)

(MB) R3465394-1 10/26/19 15:18

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Iron	U		15.0	100
Manganese	0.346	J	0.250	5.00

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3465394-2 10/26/19 15:21 • (LCSD) R3465394-3 10/26/19 15:25

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Iron	5000	5100	4990	102	99.9	80.0-120			2.20	20
Manganese	50.0	51.5	50.9	103	102	80.0-120			1.15	20

5 Sr

6 Qc

L1152302-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1152302-01 10/26/19 15:28 • (MS) R3465394-5 10/26/19 15:35 • (MSD) R3465394-6 10/26/19 15:38

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Iron	5000	158	5230	4990	101	96.6	1	75.0-125			4.76	20
Manganese	50.0	5.28	56.9	54.1	103	97.6	1	75.0-125			5.01	20

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3467812-2 11/02/19 22:54

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	97.6	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	96.1			78.0-120

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS)

(LCS) R3467812-1 11/02/19 20:04

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	4900	89.1	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			103	78.0-120	

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3464142-1 10/23/19 11:04

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1152333-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1152333-03 10/23/19 13:15 • (DUP) R3464142-2 10/23/19 13:36

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	45.6	42.6	1	6.80		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

L1152347-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1152347-01 10/23/19 14:09 • (DUP) R3464142-3 10/23/19 14:25

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	1810	1930	1	6.42		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3464142-4 10/23/19 14:27 • (LCSD) R3464142-5 10/23/19 14:34

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	69.4	71.2	102	105	85.0-115			2.56	20
Ethane	129	125	127	96.9	98.4	85.0-115			1.59	20
Ethene	127	131	133	103	105	85.0-115			1.52	20



Method Blank (MB)

(MB) R3464593-1 10/24/19 11:26

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Methane	U		0.287	0.678

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1152823-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1152823-06 10/24/19 11:56 • (DUP) R3464593-2 10/24/19 12:54

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	731	765	1	4.55		20

L1152959-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1152959-09 10/24/19 13:31 • (DUP) R3464593-3 10/24/19 13:37

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3464593-4 10/24/19 13:42 • (LCSD) R3464593-5 10/24/19 13:54

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Methane	67.8	64.6	68.2	95.3	101	85.0-115			5.42	20



Method Blank (MB)

(MB) R3466378-3 10/29/19 03:41

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3466378-3 10/29/19 03:41

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	97.6			80.0-120
(S) 4-Bromofluorobenzene	107			77.0-126
(S) 1,2-Dichloroethane-d4	103			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3466378-1 10/29/19 02:20

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Acetone	125	91.7	73.4	19.0-160	J4
Acrylonitrile	125	90.2	72.2	55.0-149	J4
Benzene	25.0	27.6	110	70.0-123	
Bromobenzene	25.0	23.0	92.0	73.0-121	
Bromodichloromethane	25.0	30.2	121	75.0-120	J4
Bromochloromethane	25.0	29.1	116	76.0-122	
Bromoform	25.0	22.1	88.4	68.0-132	
Bromomethane	25.0	25.1	100	10.0-160	
n-Butylbenzene	25.0	26.1	104	73.0-125	
sec-Butylbenzene	25.0	24.5	98.0	75.0-125	
tert-Butylbenzene	25.0	25.3	101	76.0-124	
Carbon disulfide	25.0	24.5	98.0	61.0-128	
Carbon tetrachloride	25.0	30.0	120	68.0-126	
Chlorobenzene	25.0	24.6	98.4	80.0-121	
Chlorodibromomethane	25.0	26.6	106	77.0-125	
Chloroethane	25.0	23.2	92.8	47.0-150	
Chloroform	25.0	27.3	109	73.0-120	
Chloromethane	25.0	16.4	65.6	41.0-142	
2-Chlorotoluene	25.0	25.1	100	76.0-123	
4-Chlorotoluene	25.0	25.2	101	75.0-122	
1,2-Dibromo-3-Chloropropane	25.0	24.8	99.2	58.0-134	
1,2-Dibromoethane	25.0	23.3	93.2	80.0-122	
Dibromomethane	25.0	29.6	118	80.0-120	
1,2-Dichlorobenzene	25.0	23.2	92.8	79.0-121	
1,3-Dichlorobenzene	25.0	23.6	94.4	79.0-120	
1,4-Dichlorobenzene	25.0	22.6	90.4	79.0-120	
Dichlorodifluoromethane	25.0	27.2	109	51.0-149	
1,1-Dichloroethane	25.0	24.5	98.0	70.0-126	
1,2-Dichloroethane	25.0	26.6	106	70.0-128	
1,1-Dichloroethene	25.0	28.4	114	71.0-124	
cis-1,2-Dichloroethene	25.0	26.6	106	73.0-120	
trans-1,2-Dichloroethene	25.0	27.7	111	73.0-120	
1,2-Dichloropropane	25.0	24.0	96.0	77.0-125	
1,1-Dichloropropene	25.0	29.6	118	74.0-126	
1,3-Dichloropropane	25.0	24.7	98.8	80.0-120	
cis-1,3-Dichloropropene	25.0	29.6	118	80.0-123	
trans-1,3-Dichloropropene	25.0	26.7	107	78.0-124	
trans-1,4-Dichloro-2-butene	25.0	17.0	68.0	33.0-144	
2,2-Dichloropropane	25.0	30.5	122	58.0-130	
Di-isopropyl ether	25.0	17.5	70.0	58.0-138	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3466378-1 10/29/19 02:20

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Ethylbenzene	25.0	24.6	98.4	79.0-123	
Hexachloro-1,3-butadiene	25.0	26.8	107	54.0-138	
2-Hexanone	125	97.6	78.1	67.0-149	
n-Hexane	25.0	22.1	88.4	57.0-133	
Iodomethane	125	152	122	33.0-147	
Isopropylbenzene	25.0	25.1	100	76.0-127	
p-Isopropyltoluene	25.0	25.3	101	76.0-125	
2-Butanone (MEK)	125	90.9	72.7	44.0-160	
Methylene Chloride	25.0	22.8	91.2	67.0-120	
4-Methyl-2-pentanone (MIBK)	125	88.6	70.9	68.0-142	
Methyl tert-butyl ether	25.0	25.7	103	68.0-125	
Naphthalene	25.0	24.4	97.6	54.0-135	
n-Propylbenzene	25.0	25.9	104	77.0-124	
Styrene	25.0	23.9	95.6	73.0-130	
1,1,1,2-Tetrachloroethane	25.0	24.8	99.2	75.0-125	
1,1,2,2-Tetrachloroethane	25.0	21.8	87.2	65.0-130	
1,1,2-Trichlorotrifluoroethane	25.0	26.2	105	69.0-132	
Tetrachloroethene	25.0	27.3	109	72.0-132	
Toluene	25.0	26.3	105	79.0-120	
1,2,3-Trichlorobenzene	25.0	26.2	105	50.0-138	
1,2,4-Trichlorobenzene	25.0	25.6	102	57.0-137	
1,1,1-Trichloroethane	25.0	31.7	127	73.0-124	J4
1,1,2-Trichloroethane	25.0	26.3	105	80.0-120	
Trichloroethene	25.0	29.1	116	78.0-124	
Trichlorofluoromethane	25.0	29.1	116	59.0-147	
1,2,3-Trichloropropane	25.0	24.5	98.0	73.0-130	
1,2,4-Trimethylbenzene	25.0	24.7	98.8	76.0-121	
1,2,3-Trimethylbenzene	25.0	23.8	95.2	77.0-120	
1,3,5-Trimethylbenzene	25.0	24.7	98.8	76.0-122	
Vinyl acetate	125	88.5	70.8	11.0-160	
Vinyl chloride	25.0	21.0	84.0	67.0-131	
Xylenes, Total	75.0	72.0	96.0	79.0-123	
(S) Toluene-d8			99.9	80.0-120	
(S) 4-Bromofluorobenzene			105	77.0-126	
(S) 1,2-Dichloroethane-d4			98.5	70.0-130	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration method criteria.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

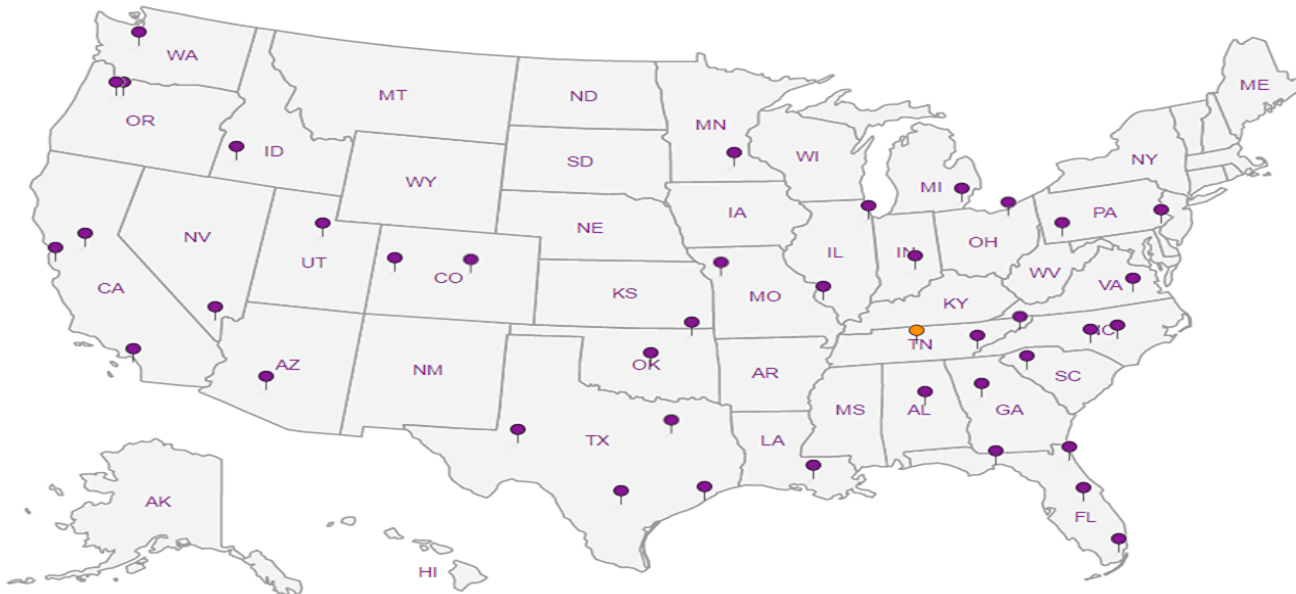
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



PES-Seattle
 Billing Information: PES-Seattle
 Chain of Custody Page 1 of 1
 Analysis / Container / Preservative
 Pres Chk



12065 Lebanon Rd
 Mount Juliet, TN 37122
 Phone: 615-758-5858
 Phone: 800-767-5859
 Fax: 615-758-5859



Report to: Bill Haldeman/Brian O'neal
 Email To: on file

Project Description: ALS
 City/State: Seattle, WA
 Collected:

Phone: on file
 Client Project #: 1413 001 02 501E
 Lab Project #: PESENVSWA-ALP

Collected by (print): Chris DeBoe
 Site/Facility ID #: 1413 001 02 501E
 P.O. #

Collected by (signature): Chris DeBoe
 Rush? (Lab MUST Be Notified)
 ___ Same Day ___ Five Day
 ___ Next Day ___ 5 Day (Rad Only)
 ___ Two Day ___ 10 Day (Rad Only)
 ___ Three Day
 Date Results Needed
 Immediately
 Packed on Ice N ___ Y X

L# 1152333
E150
 Acctnum: PESENVSWA
 Template:
 Prelogin:
 TSR: Brian Ford
 PB:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	**NO3,SO4,Chloride**	48 hour hold	NWTPHGX	VOCs (V8260LLC)	Total Fe Mn 6020	TOC	Alkalinity	EEM (RSK175LL)
GEI-1-102119	Grab	GW	32'	10/21/19	1111	9 X2	X	X	X	X	X	X	X	X
GEI-2-102119	↓	GW	55'	↓	1204	9 15	X	X	X	X	X	X	X	X
Fmw-131-102119	↓	GW	68'	↓	1315	9 13	X	X	X	X	X	X	X	X
MWH2-102119	↓	GW	80'	↓	1435	11 18	X	X	X	X	X	X	X	X
TRIP BLANK-102119	-	GW	-	-	-	1	X	X	X	X	X	X	X	X
TRIP BLANK-102119	-	GW	-	-	-	-	X	X	X	X	X	X	X	X
		GW												
		GW												
		GW												
		GW												

Shipped Via:
 Remarks
 Sample # (lab only)

* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:
 Samples returned via:
 ___ UPS ___ FedEx ___ Courier
 Tracking # 1275 8600 97217

Sample Receipt Checklist
 COC Seal Present/Intact: ___ NP ___ Y ___ N
 COC Signed/Accurate: ___ Y ___ N
 Bottles arrive intact: ___ Y ___ N
 Correct bottles used: ___ Y ___ N
 Sufficient volume sent: ___ Y ___ N
 If Applicable
 VOA Zero Headspace: ___ Y ___ N
 Preservation Correct/Checked: ___ Y ___ N
 SCREEN 0.5 mP/hr

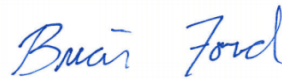
Relinquished by: (Signature) Chris DeBoe	Date: 10/21/19	Time: 1520	Received by: (Signature)	Trip Blank Received: (Yes/No) No	Bottles Received: 38	If preservation required by Login: Date/Time
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C 24.2-22.2	Bottles Received: 38	If preservation required by Login: Date/Time
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10/27/19	Time: 8:45	Condition: NCF / 08

PES Environmental, Inc.- WA

Sample Delivery Group: L1152340
Samples Received: 10/22/2019
Project Number: 1413.001.02.501E
Description: American Linen

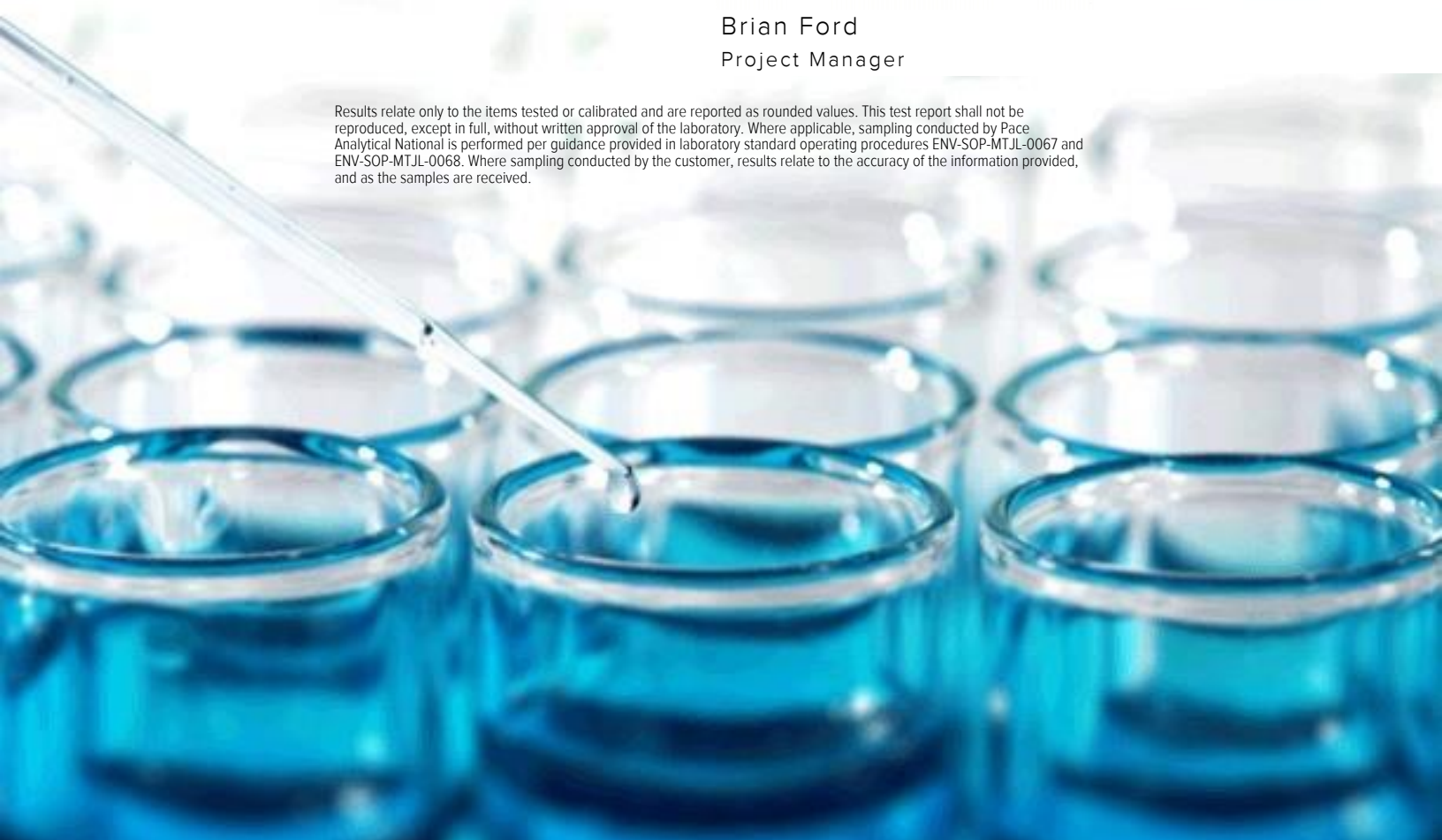
Report To: Brian O'Neal/Bill Haldeman
1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





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SAMPLE SUMMARY



MW-138-102119 L1152340-01 GW

Collected by: Chris Deboer
 Collected date/time: 10/21/19 10:05
 Received date/time: 10/22/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1369144	1	10/24/19 22:03	10/24/19 22:03	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1367181	1	10/23/19 04:10	10/23/19 04:10	NJM	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1370125	1	10/26/19 12:44	10/26/19 12:44	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1368592	1	10/24/19 14:45	10/26/19 16:35	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1373020	1	11/02/19 23:56	11/02/19 23:56	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1367825	1	10/23/19 13:40	10/23/19 13:40	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1371177	1	10/29/19 07:04	10/29/19 07:04	ADM	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

MW-302-102119 L1152340-02 GW

Collected by: Chris Deboer
 Collected date/time: 10/21/19 11:25
 Received date/time: 10/22/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1369144	1	10/24/19 22:11	10/24/19 22:11	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1367181	1	10/23/19 04:26	10/23/19 04:26	NJM	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1370125	1	10/26/19 13:00	10/26/19 13:00	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1368592	1	10/24/19 14:45	10/26/19 16:39	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1371615	1	10/31/19 04:46	10/31/19 04:46	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1367825	1	10/23/19 13:42	10/23/19 13:42	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1371177	1	10/29/19 07:24	10/29/19 07:24	ADM	Mt. Juliet, TN

MW-304-102119 L1152340-03 GW

Collected by: Chris Deboer
 Collected date/time: 10/21/19 12:50
 Received date/time: 10/22/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1369144	1	10/24/19 22:20	10/24/19 22:20	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1367181	1	10/23/19 05:32	10/23/19 05:32	NJM	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1370125	1	10/26/19 13:15	10/26/19 13:15	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1368592	1	10/24/19 14:45	10/26/19 16:42	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1371615	1	10/31/19 05:08	10/31/19 05:08	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1367825	1	10/23/19 13:57	10/23/19 13:57	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1371177	1	10/29/19 07:44	10/29/19 07:44	ADM	Mt. Juliet, TN

MW-303-102119 L1152340-04 GW

Collected by: Chris Deboer
 Collected date/time: 10/21/19 13:15
 Received date/time: 10/22/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1369144	1	10/24/19 22:29	10/24/19 22:29	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1367181	1	10/23/19 05:48	10/23/19 05:48	NJM	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1370125	1	10/26/19 13:28	10/26/19 13:28	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1368592	1	10/24/19 14:45	10/26/19 16:46	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1371615	1	10/31/19 05:29	10/31/19 05:29	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1367825	1	10/23/19 14:00	10/23/19 14:00	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1371177	1	10/29/19 08:05	10/29/19 08:05	ADM	Mt. Juliet, TN

R-MW5-102119 L1152340-05 GW

Collected by: Chris Deboer
 Collected date/time: 10/21/19 10:25
 Received date/time: 10/22/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1369144	1	10/24/19 22:47	10/24/19 22:47	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1367181	1	10/23/19 06:05	10/23/19 06:05	NJM	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1370125	1	10/26/19 13:45	10/26/19 13:45	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1368592	1	10/24/19 14:45	10/26/19 16:49	JPD	Mt. Juliet, TN

SAMPLE SUMMARY

R-MW5-102119 L1152340-05 GW

Collected by
Chris Deboer
Collected date/time
10/21/19 10:25
Received date/time
10/22/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1371615	1	10/31/19 05:51	10/31/19 05:51	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1367825	1	10/23/19 14:04	10/23/19 14:04	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1371177	1	10/29/19 08:25	10/29/19 08:25	ADM	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

4
Cn

TRIP BLANK-102119 L1152340-06 GW

Collected by
Chris Deboer
Collected date/time
10/21/19 00:00
Received date/time
10/22/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1371615	1	10/30/19 23:45	10/30/19 23:45	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1371177	1	10/29/19 04:22	10/29/19 04:22	ADM	Mt. Juliet, TN

5
Sr

6
Qc

7
Gl

FMW-129-102119 L1152340-07 GW

Collected by
Chris Deboer
Collected date/time
10/21/19 12:25
Received date/time
10/22/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1369144	1	10/24/19 22:55	10/24/19 22:55	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1367181	1	10/23/19 06:21	10/23/19 06:21	NJM	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1370125	1	10/26/19 15:12	10/26/19 15:12	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1368592	1	10/24/19 14:45	10/26/19 16:52	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1373020	1	11/03/19 00:18	11/03/19 00:18	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1367825	1	10/23/19 14:07	10/23/19 14:07	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1371177	1	10/29/19 08:45	10/29/19 08:45	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1371769	10	10/29/19 19:10	10/29/19 19:10	ADM	Mt. Juliet, TN

8
Al

9
Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	129000		2710	20000	1	10/24/2019 22:03	WG1369144

Sample Narrative:

L1152340-01 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	14200		51.9	1000	1	10/23/2019 04:10	WG1367181
Nitrate	U		22.7	100	1	10/23/2019 04:10	WG1367181
Sulfate	51900		77.4	5000	1	10/23/2019 04:10	WG1367181

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	1100	<u>B</u>	102	1000	1	10/26/2019 12:44	WG1370125

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	3830		15.0	100	1	10/26/2019 16:35	WG1368592
Manganese	504		0.250	5.00	1	10/26/2019 16:35	WG1368592

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	92.7	<u>B, J</u>	31.6	100	1	11/02/2019 23:56	WG1373020
(S) a,a,a-Trifluorotoluene(FID)	96.4			78.0-120		11/02/2019 23:56	WG1373020

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	101		0.287	0.678	1	10/23/2019 13:40	WG1367825
Ethane	U		0.296	1.29	1	10/23/2019 13:40	WG1367825
Ethene	U		0.422	1.27	1	10/23/2019 13:40	WG1367825

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.23	<u>J, J4</u>	1.05	25.0	1	10/29/2019 07:04	WG1371177
Acrylonitrile	U	<u>J4</u>	0.873	5.00	1	10/29/2019 07:04	WG1371177
Benzene	U		0.0896	0.500	1	10/29/2019 07:04	WG1371177
Bromobenzene	U		0.133	0.500	1	10/29/2019 07:04	WG1371177
Bromodichloromethane	U	<u>J4</u>	0.0800	0.500	1	10/29/2019 07:04	WG1371177
Bromochloromethane	U		0.145	0.500	1	10/29/2019 07:04	WG1371177
Bromoform	U		0.186	0.500	1	10/29/2019 07:04	WG1371177
Bromomethane	U		0.157	2.50	1	10/29/2019 07:04	WG1371177
n-Butylbenzene	U		0.143	0.500	1	10/29/2019 07:04	WG1371177
sec-Butylbenzene	U		0.134	0.500	1	10/29/2019 07:04	WG1371177
tert-Butylbenzene	U		0.183	0.500	1	10/29/2019 07:04	WG1371177
Carbon disulfide	U		0.101	0.500	1	10/29/2019 07:04	WG1371177
Carbon tetrachloride	U		0.159	0.500	1	10/29/2019 07:04	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/21/19 10:05

L1152340

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/29/2019 07:04	WG1371177
Chlorodibromomethane	U		0.128	0.500	1	10/29/2019 07:04	WG1371177
Chloroethane	U		0.141	2.50	1	10/29/2019 07:04	WG1371177
Chloroform	U		0.0860	0.500	1	10/29/2019 07:04	WG1371177
Chloromethane	U	<u>JO</u>	0.153	1.25	1	10/29/2019 07:04	WG1371177
2-Chlorotoluene	U		0.111	0.500	1	10/29/2019 07:04	WG1371177
4-Chlorotoluene	U		0.0972	0.500	1	10/29/2019 07:04	WG1371177
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 07:04	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 07:04	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 07:04	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 07:04	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 07:04	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 07:04	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 07:04	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 07:04	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 07:04	WG1371177
1,1-Dichloroethene	U		0.188	0.500	1	10/29/2019 07:04	WG1371177
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/29/2019 07:04	WG1371177
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/29/2019 07:04	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 07:04	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 07:04	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 07:04	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 07:04	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 07:04	WG1371177
trans-1,4-Dichloro-2-butene	U	<u>JO</u>	0.257	5.00	1	10/29/2019 07:04	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 07:04	WG1371177
Di-isopropyl ether	U	<u>JO</u>	0.0924	0.500	1	10/29/2019 07:04	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 07:04	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 07:04	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 07:04	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 07:04	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 07:04	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 07:04	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 07:04	WG1371177
2-Butanone (MEK)	U	<u>JO</u>	1.28	5.00	1	10/29/2019 07:04	WG1371177
Methylene Chloride	U		1.07	2.50	1	10/29/2019 07:04	WG1371177
4-Methyl-2-pentanone (MIBK)	U	<u>JO</u>	0.823	5.00	1	10/29/2019 07:04	WG1371177
Methyl tert-butyl ether	U		0.102	0.500	1	10/29/2019 07:04	WG1371177
Naphthalene	U		0.174	2.50	1	10/29/2019 07:04	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 07:04	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 07:04	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 07:04	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 07:04	WG1371177
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 07:04	WG1371177
Tetrachloroethene	U		0.199	0.500	1	10/29/2019 07:04	WG1371177
Toluene	U		0.412	0.500	1	10/29/2019 07:04	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 07:04	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 07:04	WG1371177
1,1,1-Trichloroethane	U	<u>J4</u>	0.0940	0.500	1	10/29/2019 07:04	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 07:04	WG1371177
Trichloroethene	U		0.153	0.500	1	10/29/2019 07:04	WG1371177
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 07:04	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 07:04	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 07:04	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 07:04	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 07:04	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/29/2019 07:04	WG1371177
Vinyl chloride	U		0.118	0.500	1	10/29/2019 07:04	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 07:04	WG1371177
(S) Toluene-d8	100			80.0-120		10/29/2019 07:04	WG1371177
(S) 4-Bromofluorobenzene	109			77.0-126		10/29/2019 07:04	WG1371177
(S) 1,2-Dichloroethane-d4	101			70.0-130		10/29/2019 07:04	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	311000		2710	20000	1	10/24/2019 22:11	WG1369144

Sample Narrative:

L1152340-02 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	20200		51.9	1000	1	10/23/2019 04:26	WG1367181
Nitrate	U		22.7	100	1	10/23/2019 04:26	WG1367181
Sulfate	26800		77.4	5000	1	10/23/2019 04:26	WG1367181

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	8100		102	1000	1	10/26/2019 13:00	WG1370125

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	2260		15.0	100	1	10/26/2019 16:39	WG1368592
Manganese	295		0.250	5.00	1	10/26/2019 16:39	WG1368592

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	98.5	<u>B</u>	31.6	100	1	10/31/2019 04:46	WG1371615
(S) a,a,a-Trifluorotoluene(FID)	96.1			78.0-120		10/31/2019 04:46	WG1371615

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	129		0.287	0.678	1	10/23/2019 13:42	WG1367825
Ethane	3.74		0.296	1.29	1	10/23/2019 13:42	WG1367825
Ethene	U		0.422	1.27	1	10/23/2019 13:42	WG1367825

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.19	<u>J</u> <u>J4</u>	1.05	25.0	1	10/29/2019 07:24	WG1371177
Acrylonitrile	U	<u>J4</u>	0.873	5.00	1	10/29/2019 07:24	WG1371177
Benzene	U		0.0896	0.500	1	10/29/2019 07:24	WG1371177
Bromobenzene	U		0.133	0.500	1	10/29/2019 07:24	WG1371177
Bromodichloromethane	U	<u>J4</u>	0.0800	0.500	1	10/29/2019 07:24	WG1371177
Bromochloromethane	U		0.145	0.500	1	10/29/2019 07:24	WG1371177
Bromoform	U		0.186	0.500	1	10/29/2019 07:24	WG1371177
Bromomethane	U		0.157	2.50	1	10/29/2019 07:24	WG1371177
n-Butylbenzene	U		0.143	0.500	1	10/29/2019 07:24	WG1371177
sec-Butylbenzene	U		0.134	0.500	1	10/29/2019 07:24	WG1371177
tert-Butylbenzene	U		0.183	0.500	1	10/29/2019 07:24	WG1371177
Carbon disulfide	0.357	<u>J</u>	0.101	0.500	1	10/29/2019 07:24	WG1371177
Carbon tetrachloride	U		0.159	0.500	1	10/29/2019 07:24	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/29/2019 07:24	WG1371177
Chlorodibromomethane	U		0.128	0.500	1	10/29/2019 07:24	WG1371177
Chloroethane	U		0.141	2.50	1	10/29/2019 07:24	WG1371177
Chloroform	U		0.0860	0.500	1	10/29/2019 07:24	WG1371177
Chloromethane	U	JO	0.153	1.25	1	10/29/2019 07:24	WG1371177
2-Chlorotoluene	U		0.111	0.500	1	10/29/2019 07:24	WG1371177
4-Chlorotoluene	U		0.0972	0.500	1	10/29/2019 07:24	WG1371177
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 07:24	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 07:24	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 07:24	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 07:24	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 07:24	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 07:24	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 07:24	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 07:24	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 07:24	WG1371177
1,1-Dichloroethene	U		0.188	0.500	1	10/29/2019 07:24	WG1371177
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/29/2019 07:24	WG1371177
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/29/2019 07:24	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 07:24	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 07:24	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 07:24	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 07:24	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 07:24	WG1371177
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/29/2019 07:24	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 07:24	WG1371177
Di-isopropyl ether	U	JO	0.0924	0.500	1	10/29/2019 07:24	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 07:24	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 07:24	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 07:24	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 07:24	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 07:24	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 07:24	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 07:24	WG1371177
2-Butanone (MEK)	U	JO	1.28	5.00	1	10/29/2019 07:24	WG1371177
Methylene Chloride	U		1.07	2.50	1	10/29/2019 07:24	WG1371177
4-Methyl-2-pentanone (MIBK)	U	JO	0.823	5.00	1	10/29/2019 07:24	WG1371177
Methyl tert-butyl ether	U		0.102	0.500	1	10/29/2019 07:24	WG1371177
Naphthalene	U		0.174	2.50	1	10/29/2019 07:24	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 07:24	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 07:24	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 07:24	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 07:24	WG1371177
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 07:24	WG1371177
Tetrachloroethene	U		0.199	0.500	1	10/29/2019 07:24	WG1371177
Toluene	U		0.412	0.500	1	10/29/2019 07:24	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 07:24	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 07:24	WG1371177
1,1,1-Trichloroethane	U	J4	0.0940	0.500	1	10/29/2019 07:24	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 07:24	WG1371177
Trichloroethene	U		0.153	0.500	1	10/29/2019 07:24	WG1371177
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 07:24	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 07:24	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 07:24	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 07:24	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 07:24	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/29/2019 07:24	WG1371177
Vinyl chloride	U		0.118	0.500	1	10/29/2019 07:24	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 07:24	WG1371177
<i>(S) Toluene-d8</i>	101			80.0-120		10/29/2019 07:24	WG1371177
<i>(S) 4-Bromofluorobenzene</i>	106			77.0-126		10/29/2019 07:24	WG1371177
<i>(S) 1,2-Dichloroethane-d4</i>	98.8			70.0-130		10/29/2019 07:24	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	153000		2710	20000	1	10/24/2019 22:20	WG1369144

Sample Narrative:

L1152340-03 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	12100		51.9	1000	1	10/23/2019 05:32	WG1367181
Nitrate	U		22.7	100	1	10/23/2019 05:32	WG1367181
Sulfate	16200		77.4	5000	1	10/23/2019 05:32	WG1367181

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	4240		102	1000	1	10/26/2019 13:15	WG1370125

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	5820		15.0	100	1	10/26/2019 16:42	WG1368592
Manganese	455		0.250	5.00	1	10/26/2019 16:42	WG1368592

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	97.9	<u>B</u>	31.6	100	1	10/31/2019 05:08	WG1371615
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	95.9			78.0-120		10/31/2019 05:08	WG1371615

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	31.9		0.287	0.678	1	10/23/2019 13:57	WG1367825
Ethane	U		0.296	1.29	1	10/23/2019 13:57	WG1367825
Ethene	U		0.422	1.27	1	10/23/2019 13:57	WG1367825

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	1.66	<u>J</u> <u>J4</u>	1.05	25.0	1	10/29/2019 07:44	WG1371177
Acrylonitrile	U	<u>J4</u>	0.873	5.00	1	10/29/2019 07:44	WG1371177
Benzene	U		0.0896	0.500	1	10/29/2019 07:44	WG1371177
Bromobenzene	U		0.133	0.500	1	10/29/2019 07:44	WG1371177
Bromodichloromethane	U	<u>J4</u>	0.0800	0.500	1	10/29/2019 07:44	WG1371177
Bromochloromethane	U		0.145	0.500	1	10/29/2019 07:44	WG1371177
Bromoform	U		0.186	0.500	1	10/29/2019 07:44	WG1371177
Bromomethane	U		0.157	2.50	1	10/29/2019 07:44	WG1371177
n-Butylbenzene	U		0.143	0.500	1	10/29/2019 07:44	WG1371177
sec-Butylbenzene	U		0.134	0.500	1	10/29/2019 07:44	WG1371177
tert-Butylbenzene	U		0.183	0.500	1	10/29/2019 07:44	WG1371177
Carbon disulfide	0.290	<u>J</u>	0.101	0.500	1	10/29/2019 07:44	WG1371177
Carbon tetrachloride	U		0.159	0.500	1	10/29/2019 07:44	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/29/2019 07:44	WG1371177
Chlorodibromomethane	U		0.128	0.500	1	10/29/2019 07:44	WG1371177
Chloroethane	U		0.141	2.50	1	10/29/2019 07:44	WG1371177
Chloroform	U		0.0860	0.500	1	10/29/2019 07:44	WG1371177
Chloromethane	U	JO	0.153	1.25	1	10/29/2019 07:44	WG1371177
2-Chlorotoluene	U		0.111	0.500	1	10/29/2019 07:44	WG1371177
4-Chlorotoluene	U		0.0972	0.500	1	10/29/2019 07:44	WG1371177
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 07:44	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 07:44	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 07:44	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 07:44	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 07:44	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 07:44	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 07:44	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 07:44	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 07:44	WG1371177
1,1-Dichloroethene	U		0.188	0.500	1	10/29/2019 07:44	WG1371177
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/29/2019 07:44	WG1371177
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/29/2019 07:44	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 07:44	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 07:44	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 07:44	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 07:44	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 07:44	WG1371177
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/29/2019 07:44	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 07:44	WG1371177
Di-isopropyl ether	U	JO	0.0924	0.500	1	10/29/2019 07:44	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 07:44	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 07:44	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 07:44	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 07:44	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 07:44	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 07:44	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 07:44	WG1371177
2-Butanone (MEK)	U	JO	1.28	5.00	1	10/29/2019 07:44	WG1371177
Methylene Chloride	U		1.07	2.50	1	10/29/2019 07:44	WG1371177
4-Methyl-2-pentanone (MIBK)	U	JO	0.823	5.00	1	10/29/2019 07:44	WG1371177
Methyl tert-butyl ether	U		0.102	0.500	1	10/29/2019 07:44	WG1371177
Naphthalene	U		0.174	2.50	1	10/29/2019 07:44	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 07:44	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 07:44	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 07:44	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 07:44	WG1371177
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 07:44	WG1371177
Tetrachloroethene	U		0.199	0.500	1	10/29/2019 07:44	WG1371177
Toluene	0.728		0.412	0.500	1	10/29/2019 07:44	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 07:44	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 07:44	WG1371177
1,1,1-Trichloroethane	U	J4	0.0940	0.500	1	10/29/2019 07:44	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 07:44	WG1371177
Trichloroethene	U		0.153	0.500	1	10/29/2019 07:44	WG1371177
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 07:44	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 07:44	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 07:44	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 07:44	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 07:44	WG1371177

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/29/2019 07:44	WG1371177
Vinyl chloride	U		0.118	0.500	1	10/29/2019 07:44	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 07:44	WG1371177
<i>(S) Toluene-d8</i>	102			80.0-120		10/29/2019 07:44	WG1371177
<i>(S) 4-Bromofluorobenzene</i>	111			77.0-126		10/29/2019 07:44	WG1371177
<i>(S) 1,2-Dichloroethane-d4</i>	99.7			70.0-130		10/29/2019 07:44	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	144000		2710	20000	1	10/24/2019 22:29	WG1369144

Sample Narrative:

L1152340-04 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	15200		51.9	1000	1	10/23/2019 05:48	WG1367181
Nitrate	U		22.7	100	1	10/23/2019 05:48	WG1367181
Sulfate	62200		77.4	5000	1	10/23/2019 05:48	WG1367181

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	4760		102	1000	1	10/26/2019 13:28	WG1370125

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	3060		15.0	100	1	10/26/2019 16:46	WG1368592
Manganese	289		0.250	5.00	1	10/26/2019 16:46	WG1368592

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	99.6	<u>B</u>	31.6	100	1	10/31/2019 05:29	WG1371615
(S) a,a,a-Trifluorotoluene(FID)	96.2			78.0-120		10/31/2019 05:29	WG1371615

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	95.7		0.287	0.678	1	10/23/2019 14:00	WG1367825
Ethane	6.17		0.296	1.29	1	10/23/2019 14:00	WG1367825
Ethene	U		0.422	1.27	1	10/23/2019 14:00	WG1367825

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	2.03	<u>J</u> <u>J4</u>	1.05	25.0	1	10/29/2019 08:05	WG1371177
Acrylonitrile	U	<u>J4</u>	0.873	5.00	1	10/29/2019 08:05	WG1371177
Benzene	U		0.0896	0.500	1	10/29/2019 08:05	WG1371177
Bromobenzene	U		0.133	0.500	1	10/29/2019 08:05	WG1371177
Bromodichloromethane	U	<u>J4</u>	0.0800	0.500	1	10/29/2019 08:05	WG1371177
Bromochloromethane	U		0.145	0.500	1	10/29/2019 08:05	WG1371177
Bromoform	U		0.186	0.500	1	10/29/2019 08:05	WG1371177
Bromomethane	U		0.157	2.50	1	10/29/2019 08:05	WG1371177
n-Butylbenzene	U		0.143	0.500	1	10/29/2019 08:05	WG1371177
sec-Butylbenzene	U		0.134	0.500	1	10/29/2019 08:05	WG1371177
tert-Butylbenzene	U		0.183	0.500	1	10/29/2019 08:05	WG1371177
Carbon disulfide	0.224	<u>J</u>	0.101	0.500	1	10/29/2019 08:05	WG1371177
Carbon tetrachloride	U		0.159	0.500	1	10/29/2019 08:05	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/29/2019 08:05	WG1371177
Chlorodibromomethane	U		0.128	0.500	1	10/29/2019 08:05	WG1371177
Chloroethane	U		0.141	2.50	1	10/29/2019 08:05	WG1371177
Chloroform	U		0.0860	0.500	1	10/29/2019 08:05	WG1371177
Chloromethane	U	<u>JO</u>	0.153	1.25	1	10/29/2019 08:05	WG1371177
2-Chlorotoluene	U		0.111	0.500	1	10/29/2019 08:05	WG1371177
4-Chlorotoluene	U		0.0972	0.500	1	10/29/2019 08:05	WG1371177
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 08:05	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 08:05	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 08:05	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 08:05	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 08:05	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 08:05	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 08:05	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 08:05	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 08:05	WG1371177
1,1-Dichloroethene	U		0.188	0.500	1	10/29/2019 08:05	WG1371177
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/29/2019 08:05	WG1371177
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/29/2019 08:05	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 08:05	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 08:05	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 08:05	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 08:05	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 08:05	WG1371177
trans-1,4-Dichloro-2-butene	U	<u>JO</u>	0.257	5.00	1	10/29/2019 08:05	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 08:05	WG1371177
Di-isopropyl ether	U	<u>JO</u>	0.0924	0.500	1	10/29/2019 08:05	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 08:05	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 08:05	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 08:05	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 08:05	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 08:05	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 08:05	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 08:05	WG1371177
2-Butanone (MEK)	1.48	<u>JJO</u>	1.28	5.00	1	10/29/2019 08:05	WG1371177
Methylene Chloride	U		1.07	2.50	1	10/29/2019 08:05	WG1371177
4-Methyl-2-pentanone (MIBK)	U	<u>JO</u>	0.823	5.00	1	10/29/2019 08:05	WG1371177
Methyl tert-butyl ether	U		0.102	0.500	1	10/29/2019 08:05	WG1371177
Naphthalene	U		0.174	2.50	1	10/29/2019 08:05	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 08:05	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 08:05	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 08:05	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 08:05	WG1371177
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 08:05	WG1371177
Tetrachloroethene	U		0.199	0.500	1	10/29/2019 08:05	WG1371177
Toluene	1.63		0.412	0.500	1	10/29/2019 08:05	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 08:05	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 08:05	WG1371177
1,1,1-Trichloroethane	U	<u>J4</u>	0.0940	0.500	1	10/29/2019 08:05	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 08:05	WG1371177
Trichloroethene	U		0.153	0.500	1	10/29/2019 08:05	WG1371177
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 08:05	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 08:05	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 08:05	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 08:05	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 08:05	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/29/2019 08:05	WG1371177
Vinyl chloride	U		0.118	0.500	1	10/29/2019 08:05	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 08:05	WG1371177
<i>(S) Toluene-d8</i>	99.7			80.0-120		10/29/2019 08:05	WG1371177
<i>(S) 4-Bromofluorobenzene</i>	104			77.0-126		10/29/2019 08:05	WG1371177
<i>(S) 1,2-Dichloroethane-d4</i>	98.2			70.0-130		10/29/2019 08:05	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	112000		2710	20000	1	10/24/2019 22:47	WG1369144

Sample Narrative:

L1152340-05 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	41400		51.9	1000	1	10/23/2019 06:05	WG1367181
Nitrate	U		22.7	100	1	10/23/2019 06:05	WG1367181
Sulfate	18600		77.4	5000	1	10/23/2019 06:05	WG1367181

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	4440		102	1000	1	10/26/2019 13:45	WG1370125

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	3000		15.0	100	1	10/26/2019 16:49	WG1368592
Manganese	1200		0.250	5.00	1	10/26/2019 16:49	WG1368592

Volatile Organic Compounds (GC) by Method NWTPHGX

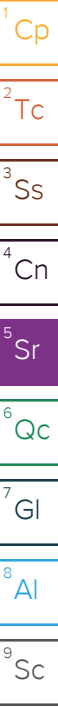
Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	95.3	<u>B</u>	31.6	100	1	10/31/2019 05:51	WG1371615
(S) a,a,a-Trifluorotoluene(FID)	96.2			78.0-120		10/31/2019 05:51	WG1371615

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	194		0.287	0.678	1	10/23/2019 14:04	WG1367825
Ethane	U		0.296	1.29	1	10/23/2019 14:04	WG1367825
Ethene	U		0.422	1.27	1	10/23/2019 14:04	WG1367825

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U	<u>J4</u>	1.05	25.0	1	10/29/2019 08:25	WG1371177
Acrylonitrile	U	<u>J4</u>	0.873	5.00	1	10/29/2019 08:25	WG1371177
Benzene	U		0.0896	0.500	1	10/29/2019 08:25	WG1371177
Bromobenzene	U		0.133	0.500	1	10/29/2019 08:25	WG1371177
Bromodichloromethane	U	<u>J4</u>	0.0800	0.500	1	10/29/2019 08:25	WG1371177
Bromochloromethane	U		0.145	0.500	1	10/29/2019 08:25	WG1371177
Bromoform	U		0.186	0.500	1	10/29/2019 08:25	WG1371177
Bromomethane	U		0.157	2.50	1	10/29/2019 08:25	WG1371177
n-Butylbenzene	U		0.143	0.500	1	10/29/2019 08:25	WG1371177
sec-Butylbenzene	U		0.134	0.500	1	10/29/2019 08:25	WG1371177
tert-Butylbenzene	U		0.183	0.500	1	10/29/2019 08:25	WG1371177
Carbon disulfide	U		0.101	0.500	1	10/29/2019 08:25	WG1371177
Carbon tetrachloride	U		0.159	0.500	1	10/29/2019 08:25	WG1371177





Collected date/time: 10/21/19 10:25

L1152340

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/29/2019 08:25	WG1371177
Chlorodibromomethane	U		0.128	0.500	1	10/29/2019 08:25	WG1371177
Chloroethane	U		0.141	2.50	1	10/29/2019 08:25	WG1371177
Chloroform	U		0.0860	0.500	1	10/29/2019 08:25	WG1371177
Chloromethane	U	JO	0.153	1.25	1	10/29/2019 08:25	WG1371177
2-Chlorotoluene	U		0.111	0.500	1	10/29/2019 08:25	WG1371177
4-Chlorotoluene	U		0.0972	0.500	1	10/29/2019 08:25	WG1371177
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 08:25	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 08:25	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 08:25	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 08:25	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 08:25	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 08:25	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 08:25	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 08:25	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 08:25	WG1371177
1,1-Dichloroethene	U		0.188	0.500	1	10/29/2019 08:25	WG1371177
cis-1,2-Dichloroethene	0.302	J	0.0933	0.500	1	10/29/2019 08:25	WG1371177
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/29/2019 08:25	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 08:25	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 08:25	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 08:25	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 08:25	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 08:25	WG1371177
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/29/2019 08:25	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 08:25	WG1371177
Di-isopropyl ether	U	JO	0.0924	0.500	1	10/29/2019 08:25	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 08:25	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 08:25	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 08:25	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 08:25	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 08:25	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 08:25	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 08:25	WG1371177
2-Butanone (MEK)	U	JO	1.28	5.00	1	10/29/2019 08:25	WG1371177
Methylene Chloride	U		1.07	2.50	1	10/29/2019 08:25	WG1371177
4-Methyl-2-pentanone (MIBK)	U	JO	0.823	5.00	1	10/29/2019 08:25	WG1371177
Methyl tert-butyl ether	U		0.102	0.500	1	10/29/2019 08:25	WG1371177
Naphthalene	U		0.174	2.50	1	10/29/2019 08:25	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 08:25	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 08:25	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 08:25	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 08:25	WG1371177
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 08:25	WG1371177
Tetrachloroethene	0.523		0.199	0.500	1	10/29/2019 08:25	WG1371177
Toluene	U		0.412	0.500	1	10/29/2019 08:25	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 08:25	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 08:25	WG1371177
1,1,1-Trichloroethane	U	J4	0.0940	0.500	1	10/29/2019 08:25	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 08:25	WG1371177
Trichloroethene	U		0.153	0.500	1	10/29/2019 08:25	WG1371177
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 08:25	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 08:25	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 08:25	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 08:25	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 08:25	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/29/2019 08:25	WG1371177
Vinyl chloride	U		0.118	0.500	1	10/29/2019 08:25	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 08:25	WG1371177
<i>(S) Toluene-d8</i>	100			80.0-120		10/29/2019 08:25	WG1371177
<i>(S) 4-Bromofluorobenzene</i>	105			77.0-126		10/29/2019 08:25	WG1371177
<i>(S) 1,2-Dichloroethane-d4</i>	97.9			70.0-130		10/29/2019 08:25	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/21/19 00:00

L1152340

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	97.4	<u>B</u> <u>J</u>	31.6	100	1	10/30/2019 23:45	WG1371615
(S) a,a,a-Trifluorotoluene(FID)	97.5			78.0-120		10/30/2019 23:45	WG1371615

1 Cp

2 Tc

3 Ss

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U	<u>J4</u>	1.05	25.0	1	10/29/2019 04:22	WG1371177
Acrylonitrile	U	<u>J4</u>	0.873	5.00	1	10/29/2019 04:22	WG1371177
Benzene	U		0.0896	0.500	1	10/29/2019 04:22	WG1371177
Bromobenzene	U		0.133	0.500	1	10/29/2019 04:22	WG1371177
Bromodichloromethane	U	<u>J4</u>	0.0800	0.500	1	10/29/2019 04:22	WG1371177
Bromochloromethane	U		0.145	0.500	1	10/29/2019 04:22	WG1371177
Bromoform	U		0.186	0.500	1	10/29/2019 04:22	WG1371177
Bromomethane	U		0.157	2.50	1	10/29/2019 04:22	WG1371177
n-Butylbenzene	U		0.143	0.500	1	10/29/2019 04:22	WG1371177
sec-Butylbenzene	U		0.134	0.500	1	10/29/2019 04:22	WG1371177
tert-Butylbenzene	U		0.183	0.500	1	10/29/2019 04:22	WG1371177
Carbon disulfide	U		0.101	0.500	1	10/29/2019 04:22	WG1371177
Carbon tetrachloride	U		0.159	0.500	1	10/29/2019 04:22	WG1371177
Chlorobenzene	U		0.140	0.500	1	10/29/2019 04:22	WG1371177
Chlorodibromomethane	U		0.128	0.500	1	10/29/2019 04:22	WG1371177
Chloroethane	U		0.141	2.50	1	10/29/2019 04:22	WG1371177
Chloroform	U		0.0860	0.500	1	10/29/2019 04:22	WG1371177
Chloromethane	U	<u>JO</u>	0.153	1.25	1	10/29/2019 04:22	WG1371177
2-Chlorotoluene	U		0.111	0.500	1	10/29/2019 04:22	WG1371177
4-Chlorotoluene	U		0.0972	0.500	1	10/29/2019 04:22	WG1371177
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 04:22	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 04:22	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 04:22	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 04:22	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 04:22	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 04:22	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 04:22	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 04:22	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 04:22	WG1371177
1,1-Dichloroethene	U		0.188	0.500	1	10/29/2019 04:22	WG1371177
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/29/2019 04:22	WG1371177
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/29/2019 04:22	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 04:22	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 04:22	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 04:22	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 04:22	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 04:22	WG1371177
trans-1,4-Dichloro-2-butene	U	<u>JO</u>	0.257	5.00	1	10/29/2019 04:22	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 04:22	WG1371177
Di-isopropyl ether	U	<u>JO</u>	0.0924	0.500	1	10/29/2019 04:22	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 04:22	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 04:22	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 04:22	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 04:22	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 04:22	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 04:22	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 04:22	WG1371177
2-Butanone (MEK)	U	<u>JO</u>	1.28	5.00	1	10/29/2019 04:22	WG1371177

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/21/19 00:00

L1152340

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methylene Chloride	U		1.07	2.50	1	10/29/2019 04:22	WG1371177
4-Methyl-2-pentanone (MIBK)	U	<u>JO</u>	0.823	5.00	1	10/29/2019 04:22	WG1371177
Methyl tert-butyl ether	U		0.102	0.500	1	10/29/2019 04:22	WG1371177
Naphthalene	U		0.174	2.50	1	10/29/2019 04:22	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 04:22	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 04:22	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 04:22	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 04:22	WG1371177
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 04:22	WG1371177
Tetrachloroethene	U		0.199	0.500	1	10/29/2019 04:22	WG1371177
Toluene	U		0.412	0.500	1	10/29/2019 04:22	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 04:22	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 04:22	WG1371177
1,1,1-Trichloroethane	U	<u>J4</u>	0.0940	0.500	1	10/29/2019 04:22	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 04:22	WG1371177
Trichloroethene	U		0.153	0.500	1	10/29/2019 04:22	WG1371177
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 04:22	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 04:22	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 04:22	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 04:22	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 04:22	WG1371177
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/29/2019 04:22	WG1371177
Vinyl chloride	U		0.118	0.500	1	10/29/2019 04:22	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 04:22	WG1371177
(S) Toluene-d8	97.5			80.0-120		10/29/2019 04:22	WG1371177
(S) 4-Bromofluorobenzene	106			77.0-126		10/29/2019 04:22	WG1371177
(S) 1,2-Dichloroethane-d4	97.1			70.0-130		10/29/2019 04:22	WG1371177

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	209000		2710	20000	1	10/24/2019 22:55	WG1369144

Sample Narrative:

L1152340-07 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	23600		51.9	1000	1	10/23/2019 06:21	WG1367181
Nitrate	639		22.7	100	1	10/23/2019 06:21	WG1367181
Sulfate	82400		77.4	5000	1	10/23/2019 06:21	WG1367181

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1520	<u>B</u>	102	1000	1	10/26/2019 15:12	WG1370125

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	18900		15.0	100	1	10/26/2019 16:52	WG1368592
Manganese	648		0.250	5.00	1	10/26/2019 16:52	WG1368592

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	141	<u>B</u>	31.6	100	1	11/03/2019 00:18	WG1373020
(S) a,a,a-Trifluorotoluene(FID)	96.5			78.0-120		11/03/2019 00:18	WG1373020

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	53.5		0.287	0.678	1	10/23/2019 14:07	WG1367825
Ethane	5.31		0.296	1.29	1	10/23/2019 14:07	WG1367825
Ethene	U		0.422	1.27	1	10/23/2019 14:07	WG1367825

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U	<u>J4</u>	1.05	25.0	1	10/29/2019 08:45	WG1371177
Acrylonitrile	U	<u>J4</u>	0.873	5.00	1	10/29/2019 08:45	WG1371177
Benzene	U		0.0896	0.500	1	10/29/2019 08:45	WG1371177
Bromobenzene	U		0.133	0.500	1	10/29/2019 08:45	WG1371177
Bromodichloromethane	U	<u>J4</u>	0.0800	0.500	1	10/29/2019 08:45	WG1371177
Bromochloromethane	U		0.145	0.500	1	10/29/2019 08:45	WG1371177
Bromoform	U		0.186	0.500	1	10/29/2019 08:45	WG1371177
Bromomethane	U		0.157	2.50	1	10/29/2019 08:45	WG1371177
n-Butylbenzene	U		0.143	0.500	1	10/29/2019 08:45	WG1371177
sec-Butylbenzene	U		0.134	0.500	1	10/29/2019 08:45	WG1371177
tert-Butylbenzene	U		0.183	0.500	1	10/29/2019 08:45	WG1371177
Carbon disulfide	U		0.101	0.500	1	10/29/2019 08:45	WG1371177
Carbon tetrachloride	U		0.159	0.500	1	10/29/2019 08:45	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/29/2019 08:45	WG1371177
Chlorodibromomethane	U		0.128	0.500	1	10/29/2019 08:45	WG1371177
Chloroethane	U		0.141	2.50	1	10/29/2019 08:45	WG1371177
Chloroform	U		0.0860	0.500	1	10/29/2019 08:45	WG1371177
Chloromethane	U	JO	0.153	1.25	1	10/29/2019 08:45	WG1371177
2-Chlorotoluene	U		0.111	0.500	1	10/29/2019 08:45	WG1371177
4-Chlorotoluene	U		0.0972	0.500	1	10/29/2019 08:45	WG1371177
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 08:45	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 08:45	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 08:45	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 08:45	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 08:45	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 08:45	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 08:45	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 08:45	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 08:45	WG1371177
1,1-Dichloroethene	1.62		0.188	0.500	1	10/29/2019 08:45	WG1371177
cis-1,2-Dichloroethene	350		0.933	5.00	10	10/29/2019 19:10	WG1371769
trans-1,2-Dichloroethene	1.61		0.152	0.500	1	10/29/2019 08:45	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 08:45	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 08:45	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 08:45	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 08:45	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 08:45	WG1371177
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/29/2019 08:45	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 08:45	WG1371177
Di-isopropyl ether	U	JO	0.0924	0.500	1	10/29/2019 08:45	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 08:45	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 08:45	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 08:45	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 08:45	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 08:45	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 08:45	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 08:45	WG1371177
2-Butanone (MEK)	U	JO	1.28	5.00	1	10/29/2019 08:45	WG1371177
Methylene Chloride	U		1.07	2.50	1	10/29/2019 08:45	WG1371177
4-Methyl-2-pentanone (MIBK)	U	JO	0.823	5.00	1	10/29/2019 08:45	WG1371177
Methyl tert-butyl ether	U		0.102	0.500	1	10/29/2019 08:45	WG1371177
Naphthalene	U		0.174	2.50	1	10/29/2019 08:45	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 08:45	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 08:45	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 08:45	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 08:45	WG1371177
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 08:45	WG1371177
Tetrachloroethene	114		0.199	0.500	1	10/29/2019 08:45	WG1371177
Toluene	U		0.412	0.500	1	10/29/2019 08:45	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 08:45	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 08:45	WG1371177
1,1,1-Trichloroethane	U	J4	0.0940	0.500	1	10/29/2019 08:45	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 08:45	WG1371177
Trichloroethene	198		0.153	0.500	1	10/29/2019 08:45	WG1371177
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 08:45	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 08:45	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 08:45	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 08:45	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 08:45	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/29/2019 08:45	WG1371177
Vinyl chloride	0.259	<u>J</u>	0.118	0.500	1	10/29/2019 08:45	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 08:45	WG1371177
(S) Toluene-d8	98.7			80.0-120		10/29/2019 08:45	WG1371177
(S) Toluene-d8	105			80.0-120		10/29/2019 19:10	WG1371769
(S) 4-Bromofluorobenzene	108			77.0-126		10/29/2019 08:45	WG1371177
(S) 4-Bromofluorobenzene	99.1			77.0-126		10/29/2019 19:10	WG1371769
(S) 1,2-Dichloroethane-d4	98.1			70.0-130		10/29/2019 08:45	WG1371177
(S) 1,2-Dichloroethane-d4	102			70.0-130		10/29/2019 19:10	WG1371769

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3464935-1 10/24/19 21:15

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	U		2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1152333-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1152333-01 10/24/19 21:24 • (DUP) R3464935-2 10/24/19 21:31

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	589000	589000	1	0.0563		20

Sample Narrative:

OS: Endpoint pH 4.5
DUP: Endpoint pH 4.5

L1152791-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1152791-01 10/24/19 23:11 • (DUP) R3464935-4 10/24/19 23:20

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	519000	520000	1	0.243		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace
DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3464935-3 10/24/19 22:38

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	98500	98.5	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3463970-1 10/22/19 09:41

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Chloride	U		51.9	1000
Nitrate	U		22.7	100
Sulfate	U		77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1152322-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1152322-01 10/22/19 14:34 • (DUP) R3463970-9 10/23/19 03:53

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	6100	6720	1	9.68		15
Nitrate	210	233	1	10.7		15
Sulfate	89600	0.000	1	200	J3	15

L1152340-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1152340-02 10/23/19 04:26 • (DUP) R3463970-10 10/23/19 05:15

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	20200	19800	1	1.66		15
Nitrate	U	0.000	1	0.000		15
Sulfate	26800	26800	1	0.133		15

Laboratory Control Sample (LCS)

(LCS) R3463970-2 10/22/19 09:58

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Chloride	40000	37700	94.3	80.0-120	
Nitrate	8000	7790	97.4	80.0-120	
Sulfate	40000	37800	94.4	80.0-120	



L1152324-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1152324-03 10/23/19 03:21 • (MS) R3463970-8 10/23/19 03:37

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	1960	53800	104	1	80.0-120	
Nitrate	5000	110	5070	99.1	1	80.0-120	
Sulfate	50000	ND	55900	104	1	80.0-120	

L1152346-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1152346-01 10/23/19 06:37 • (MS) R3463970-11 10/23/19 06:54 • (MSD) R3463970-12 10/23/19 07:10

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	2070	48300	48100	92.4	92.1	1	80.0-120			0.294	15
Nitrate	5000	ND	4600	4730	90.7	93.4	1	80.0-120			2.84	15
Sulfate	50000	29900	75600	75300	91.4	90.9	1	80.0-120			0.297	15

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3466124-1 10/26/19 10:58

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	304	↓	102	1000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1152340-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1152340-05 10/26/19 13:45 • (DUP) R3466124-3 10/26/19 14:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC	4440	4380	1	1.36		20

L1152670-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1152670-03 10/26/19 16:56 • (DUP) R3466124-6 10/26/19 17:09

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC	964	990	1	2.65	↓	20

Laboratory Control Sample (LCS)

(LCS) R3466124-2 10/26/19 11:28

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC	75000	72500	96.7	85.0-115	

L1152412-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1152412-05 10/26/19 15:27 • (MS) R3466124-4 10/26/19 15:47 • (MSD) R3466124-5 10/26/19 16:03

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC	50000	2760	52200	50600	98.9	95.7	1	80.0-120			3.15	20

L1152670-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1152670-06 10/26/19 18:52 • (MS) R3466124-7 10/26/19 19:09 • (MSD) R3466124-8 10/26/19 19:29

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC	50000	1110	48600	50000	94.9	97.7	1	80.0-120			2.86	20



Method Blank (MB)

(MB) R3465394-1 10/26/19 15:18

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Iron	U		15.0	100
Manganese	0.346	J	0.250	5.00

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3465394-2 10/26/19 15:21 • (LCSD) R3465394-3 10/26/19 15:25

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Iron	5000	5100	4990	102	99.9	80.0-120			2.20	20
Manganese	50.0	51.5	50.9	103	102	80.0-120			1.15	20

5 Sr

6 Qc

L1152302-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1152302-01 10/26/19 15:28 • (MS) R3465394-5 10/26/19 15:35 • (MSD) R3465394-6 10/26/19 15:38

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Iron	5000	158	5230	4990	101	96.6	1	75.0-125			4.76	20
Manganese	50.0	5.28	56.9	54.1	103	97.6	1	75.0-125			5.01	20

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3467099-2 10/30/19 23:24

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	103		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	96.1			78.0-120

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS)

(LCS) R3467099-1 10/30/19 22:41

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5290	96.2	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			103	78.0-120	

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3467812-2 11/02/19 22:54

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	97.6	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	96.1			78.0-120

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS)

(LCS) R3467812-1 11/02/19 20:04

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	4900	89.1	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			103	78.0-120	

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3464142-1 10/23/19 11:04

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1152333-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1152333-03 10/23/19 13:15 • (DUP) R3464142-2 10/23/19 13:36

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	45.6	42.6	1	6.80		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

L1152347-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1152347-01 10/23/19 14:09 • (DUP) R3464142-3 10/23/19 14:25

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	1810	1930	1	6.42		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3464142-4 10/23/19 14:27 • (LCSD) R3464142-5 10/23/19 14:34

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	69.4	71.2	102	105	85.0-115			2.56	20
Ethane	129	125	127	96.9	98.4	85.0-115			1.59	20
Ethene	127	131	133	103	105	85.0-115			1.52	20



Method Blank (MB)

(MB) R3466378-3 10/29/19 03:41

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3466378-3 10/29/19 03:41

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	97.6			80.0-120
(S) 4-Bromofluorobenzene	107			77.0-126
(S) 1,2-Dichloroethane-d4	103			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3466378-1 10/29/19 02:20

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	125	91.7	73.4	19.0-160	J4
Acrylonitrile	125	90.2	72.2	55.0-149	J4
Benzene	25.0	27.6	110	70.0-123	
Bromobenzene	25.0	23.0	92.0	73.0-121	
Bromodichloromethane	25.0	30.2	121	75.0-120	J4
Bromochloromethane	25.0	29.1	116	76.0-122	
Bromoform	25.0	22.1	88.4	68.0-132	
Bromomethane	25.0	25.1	100	10.0-160	
n-Butylbenzene	25.0	26.1	104	73.0-125	
sec-Butylbenzene	25.0	24.5	98.0	75.0-125	
tert-Butylbenzene	25.0	25.3	101	76.0-124	
Carbon disulfide	25.0	24.5	98.0	61.0-128	
Carbon tetrachloride	25.0	30.0	120	68.0-126	
Chlorobenzene	25.0	24.6	98.4	80.0-121	
Chlorodibromomethane	25.0	26.6	106	77.0-125	
Chloroethane	25.0	23.2	92.8	47.0-150	
Chloroform	25.0	27.3	109	73.0-120	
Chloromethane	25.0	16.4	65.6	41.0-142	
2-Chlorotoluene	25.0	25.1	100	76.0-123	
4-Chlorotoluene	25.0	25.2	101	75.0-122	
1,2-Dibromo-3-Chloropropane	25.0	24.8	99.2	58.0-134	
1,2-Dibromoethane	25.0	23.3	93.2	80.0-122	
Dibromomethane	25.0	29.6	118	80.0-120	
1,2-Dichlorobenzene	25.0	23.2	92.8	79.0-121	
1,3-Dichlorobenzene	25.0	23.6	94.4	79.0-120	
1,4-Dichlorobenzene	25.0	22.6	90.4	79.0-120	
Dichlorodifluoromethane	25.0	27.2	109	51.0-149	
1,1-Dichloroethane	25.0	24.5	98.0	70.0-126	
1,2-Dichloroethane	25.0	26.6	106	70.0-128	
1,1-Dichloroethene	25.0	28.4	114	71.0-124	
cis-1,2-Dichloroethene	25.0	26.6	106	73.0-120	
trans-1,2-Dichloroethene	25.0	27.7	111	73.0-120	
1,2-Dichloropropane	25.0	24.0	96.0	77.0-125	
1,1-Dichloropropene	25.0	29.6	118	74.0-126	
1,3-Dichloropropane	25.0	24.7	98.8	80.0-120	
cis-1,3-Dichloropropene	25.0	29.6	118	80.0-123	
trans-1,3-Dichloropropene	25.0	26.7	107	78.0-124	
trans-1,4-Dichloro-2-butene	25.0	17.0	68.0	33.0-144	
2,2-Dichloropropane	25.0	30.5	122	58.0-130	
Di-isopropyl ether	25.0	17.5	70.0	58.0-138	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3466378-1 10/29/19 02:20

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Ethylbenzene	25.0	24.6	98.4	79.0-123	
Hexachloro-1,3-butadiene	25.0	26.8	107	54.0-138	
2-Hexanone	125	97.6	78.1	67.0-149	
n-Hexane	25.0	22.1	88.4	57.0-133	
Iodomethane	125	152	122	33.0-147	
Isopropylbenzene	25.0	25.1	100	76.0-127	
p-Isopropyltoluene	25.0	25.3	101	76.0-125	
2-Butanone (MEK)	125	90.9	72.7	44.0-160	
Methylene Chloride	25.0	22.8	91.2	67.0-120	
4-Methyl-2-pentanone (MIBK)	125	88.6	70.9	68.0-142	
Methyl tert-butyl ether	25.0	25.7	103	68.0-125	
Naphthalene	25.0	24.4	97.6	54.0-135	
n-Propylbenzene	25.0	25.9	104	77.0-124	
Styrene	25.0	23.9	95.6	73.0-130	
1,1,1,2-Tetrachloroethane	25.0	24.8	99.2	75.0-125	
1,1,2,2-Tetrachloroethane	25.0	21.8	87.2	65.0-130	
1,1,2-Trichlorotrifluoroethane	25.0	26.2	105	69.0-132	
Tetrachloroethene	25.0	27.3	109	72.0-132	
Toluene	25.0	26.3	105	79.0-120	
1,2,3-Trichlorobenzene	25.0	26.2	105	50.0-138	
1,2,4-Trichlorobenzene	25.0	25.6	102	57.0-137	
1,1,1-Trichloroethane	25.0	31.7	127	73.0-124	<u>J4</u>
1,1,2-Trichloroethane	25.0	26.3	105	80.0-120	
Trichloroethene	25.0	29.1	116	78.0-124	
Trichlorofluoromethane	25.0	29.1	116	59.0-147	
1,2,3-Trichloropropane	25.0	24.5	98.0	73.0-130	
1,2,4-Trimethylbenzene	25.0	24.7	98.8	76.0-121	
1,2,3-Trimethylbenzene	25.0	23.8	95.2	77.0-120	
1,3,5-Trimethylbenzene	25.0	24.7	98.8	76.0-122	
Vinyl acetate	125	88.5	70.8	11.0-160	
Vinyl chloride	25.0	21.0	84.0	67.0-131	
Xylenes, Total	75.0	72.0	96.0	79.0-123	
(S) Toluene-d8			99.9	80.0-120	
(S) 4-Bromofluorobenzene			105	77.0-126	
(S) 1,2-Dichloroethane-d4			98.5	70.0-130	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3467086-3 10/29/19 18:32

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
cis-1,2-Dichloroethene	0.167	↓	0.0933	0.500
(S) Toluene-d8	104			80.0-120
(S) 4-Bromofluorobenzene	97.9			77.0-126
(S) 1,2-Dichloroethane-d4	97.1			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3467086-1 10/29/19 17:35 • (LCSD) R3467086-2 10/29/19 17:54

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
cis-1,2-Dichloroethene	5.00	4.96	5.27	99.2	105	73.0-120			6.06	20
(S) Toluene-d8				104	104	80.0-120				
(S) 4-Bromofluorobenzene				99.8	98.6	77.0-126				
(S) 1,2-Dichloroethane-d4				98.8	96.4	70.0-130				

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier Description

B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration method criteria.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

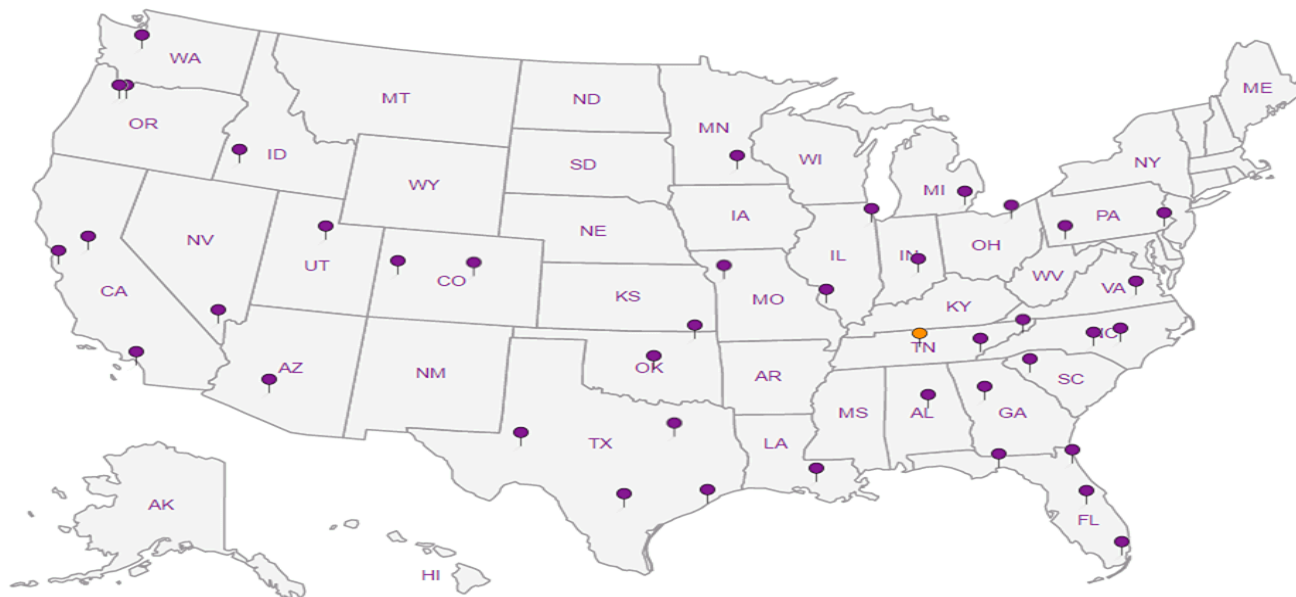
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn


5 Sr

6 Qc

7 Gl

8 Al

9 Sc

PES-Seattle		Billing Information: PES-Seattle		Analysis / Container / Preservative		Chain of Custody Page 1 of 1	
Report to: Bill Haldeman/Brian O'neal		Email To: on file		Pres Chk			


Project Description: <i>American Linen</i>		City/State: <i>Seattle, WA</i>	
Phone: on file		Client Project #	
Fax:		Lab Project #	
Collected by (print): <i>Chris DeBoer</i>		Site/Facility ID #	
Collected by (signature): <i>Chris DeBoer</i>		Quote #	

Packed on Ice N <input type="checkbox"/> Y <input checked="" type="checkbox"/>		Date Results Needed	
Rush? (Lab MUST Be Notified) <input type="checkbox"/> Same Day <input type="checkbox"/> Five Day <input type="checkbox"/> Next Day <input type="checkbox"/> 5 Day (Rad Only) <input type="checkbox"/> Two Day <input type="checkbox"/> 10 Day (Rad Only) <input type="checkbox"/> Three Day		No. of Cntrs	

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	**NO3,SO4,Chloride**	48 hour hold	NWTPHGX	VOCs (V8260LLC)	Total Fe Mn 6020	TOC	Alkalinity	EEM (RSK175LL)	Remarks	Sample # (lab only)
MW-130-102119	Grab	GW	110'	10/21/19	1005	12	X	X	X	X	X	X	X	X		01
MW-302-102119	↓	GW	60'	↓	1125	12	X	X	X	X	X	X	X	X		02
MW-304-102119	↓	GW	110'	↓	1250	12	X	X	X	X	X	X	X	X		03
MW-303-102119	↓	GW	77'	↓	1315	12	X	X	X	X	X	X	X	X		04
R-MW5-102119	↓	GW	27' 23'	↓	1025	12	X	X	X	X	X	X	X	X		05
TBR BLANK-102119	—	GW	—	10/21/19	—	1	X	X	X	X	X	X	X	X		06
FMW-129-102119	Grab	GW	86'	10/21/19	1225	9	X	X	X	X	X	X	X	X		07
		GW				17										
		GW				17										
		GW				17										

* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - Waste Water DW - Drinking Water OT - Other		Remarks:		pH _____ Temp _____ Flow _____ Other _____		Sample Receipt Checklist COC Seal Present/Intact: <input type="checkbox"/> NP <input checked="" type="checkbox"/> Y <input type="checkbox"/> N COC Signed/Accurate: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Bottles arrive intact: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Correct bottles used: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Sufficient volume sent: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If Applicable VOA Zero Headspace: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Preservation Correct/Checked: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N RAD SCREEN: <0.5 mrad/hr	
Samples returned via: UPS FedEx Courier		Tracking # <i>1275 8600 9716</i>		Received by: (Signature)		Trip Blank Received: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No HCl / MeOH TBR	
Relinquished by: (Signature) <i>Chris DeBoer</i>		Date: <i>10/21/19</i>		Time: <i>1600</i>		Temp: _____ °C Bottles Received: <i>62</i>	
Relinquished by: (Signature)		Date:		Time:		If preservation required by Login: Date/Time	
Relinquished by: (Signature)		Date:		Time:		Hold: <i>PHadi 10/20/22</i>	
Relinquished by: (Signature)		Date:		Time:		Condition: <i>OK</i>	

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



L# *1152340*

E151

Acctnum: PESENVSWA
Template:
Prelogin:
TSR: Brian Ford
PB:
Shipped Via:

Kelsey Stephenson



Login #: L1152340	Client: PESENVSWA	Date: 10/22	Evaluated by: Kelsey S
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Non-Conformance (check applicable items)

Sample Integrity	Chain of Custody Clarification	If Broken Container:
Parameter(s) past holding time	Login Clarification Needed	Insufficient packing material around container
Temperature not in range	Chain of custody is incomplete	Insufficient packing material inside cooler
Improper container type	Please specify Metals requested.	Improper handling by carrier (FedEx / UPS / Courier)
pH not in range.	Please specify TCLP requested.	Sample was frozen
Insufficient sample volume.	Received additional samples not listed on coc.	Container lid not intact
Sample is biphasic.	Sample ids on containers do not match ids on coc	If no Chain of Custody:
Vials received with headspace.	Trip Blank not received.	Received by:
Broken container	Client did not "X" analysis.	Date/Time:
Broken container:	Chain of Custody is missing	Temp./Cont. Rec./pH:
Sufficient sample remains		Carrier:
		Tracking#

Login Comments: TOC for MW-303-10219 received with a pH of 7

Client informed by:	Call	Email x	Voice Mail	Date: 10/22/19	Time: 1115
TSR Initials: bjf	Client Contact: PMs				

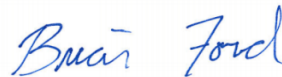
Login Instructions:

Proceed and qualify as needed.

PES Environmental, Inc.- WA

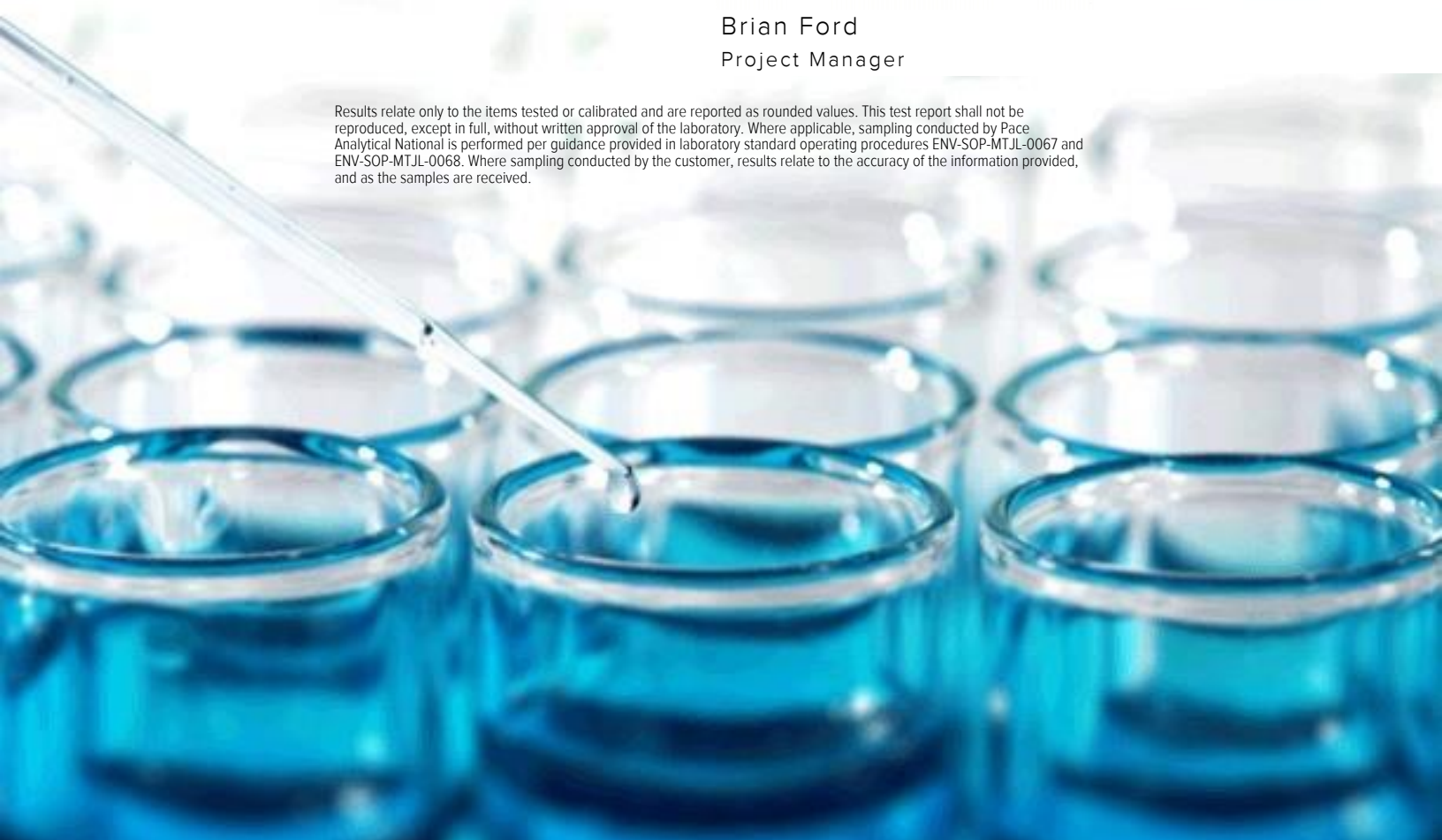
Sample Delivery Group: L1152823
Samples Received: 10/23/2019
Project Number: 1413.001.02.501E
Description: American Linen
Site: AMERICAN LINEN
Report To: Brian O'Neal/Bill Haldeman
1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





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SAMPLE SUMMARY



MW-918-102219 L1152823-01 GW

Collected by
BLH/HRC
Collected date/time
10/22/19 09:30
Received date/time
10/23/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1369144	1	10/24/19 23:27	10/24/19 23:27	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1367978	1	10/23/19 18:44	10/23/19 18:44	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1370126	1	10/26/19 19:05	10/26/19 19:05	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1368595	1	10/25/19 10:19	10/28/19 16:34	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1373020	1	11/03/19 00:40	11/03/19 00:40	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1368615	1	10/24/19 11:45	10/24/19 11:45	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1371177	1	10/29/19 09:06	10/29/19 09:06	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1371769	5	10/29/19 19:29	10/29/19 19:29	ADM	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

MW-116-102219 L1152823-02 GW

Collected by
BLH/HRC
Collected date/time
10/22/19 10:05
Received date/time
10/23/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1369144	1	10/24/19 23:34	10/24/19 23:34	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1367978	1	10/23/19 19:17	10/23/19 19:17	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1370126	1	10/26/19 19:30	10/26/19 19:30	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1368595	1	10/25/19 10:19	10/28/19 17:09	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1368595	5	10/25/19 10:19	10/29/19 02:45	LAT	Mt. Juliet, TN

6
Qc

7
Gl

8
Al

9
Sc

MW-113-102219 L1152823-03 GW

Collected by
BLH/HRC
Collected date/time
10/22/19 10:45
Received date/time
10/23/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1369144	1	10/24/19 23:42	10/24/19 23:42	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1367978	1	10/23/19 19:33	10/23/19 19:33	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1370126	1	10/26/19 19:57	10/26/19 19:57	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1368595	1	10/25/19 10:19	10/28/19 17:12	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1368595	5	10/25/19 10:19	10/29/19 02:48	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1368615	1	10/24/19 11:49	10/24/19 11:49	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1371177	1	10/29/19 09:26	10/29/19 09:26	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1371769	10	10/29/19 19:48	10/29/19 19:48	ADM	Mt. Juliet, TN

MW-115-102219 L1152823-04 GW

Collected by
BLH/HRC
Collected date/time
10/22/19 11:05
Received date/time
10/23/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1369144	1	10/24/19 23:49	10/24/19 23:49	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1367978	1	10/23/19 20:39	10/23/19 20:39	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1370126	1	10/26/19 20:20	10/26/19 20:20	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1368595	1	10/25/19 10:19	10/28/19 17:15	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1368595	5	10/25/19 10:19	10/29/19 02:51	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1368615	1	10/24/19 11:51	10/24/19 11:51	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1371177	1	10/29/19 09:46	10/29/19 09:46	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1371769	1	10/29/19 20:07	10/29/19 20:07	ADM	Mt. Juliet, TN

BB-8-102219 L1152823-05 GW

Collected by
BLH/HRC
Collected date/time
10/22/19 12:50
Received date/time
10/23/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1369144	1	10/24/19 23:57	10/24/19 23:57	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1367978	1	10/23/19 20:55	10/23/19 20:55	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1370126	1	10/26/19 23:06	10/26/19 23:06	VRP	Mt. Juliet, TN

SAMPLE SUMMARY



BB-8-102219 L1152823-05 GW

Collected by
BLH/HRC

Collected date/time
10/22/19 12:50

Received date/time
10/23/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020B	WG1368595	1	10/25/19 10:19	10/28/19 17:19	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1373020	1	11/03/19 01:01	11/03/19 01:01	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1368615	1	10/24/19 11:54	10/24/19 11:54	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1371177	1	10/29/19 10:06	10/29/19 10:06	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1371769	5	10/29/19 20:26	10/29/19 20:26	ADM	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

4
Cn

MW-105-102219 L1152823-06 GW

Collected by
BLH/HRC

Collected date/time
10/22/19 13:00

Received date/time
10/23/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1369144	1	10/25/19 00:13	10/25/19 00:13	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1367978	1	10/23/19 21:12	10/23/19 21:12	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1370126	1	10/26/19 23:27	10/26/19 23:27	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1368595	1	10/25/19 10:19	10/28/19 17:22	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1368595	5	10/25/19 10:19	10/29/19 02:55	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1371615	1	10/31/19 08:01	10/31/19 08:01	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1368615	1	10/24/19 11:56	10/24/19 11:56	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1371177	1	10/29/19 10:27	10/29/19 10:27	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1371769	1	10/29/19 20:45	10/29/19 20:45	ADM	Mt. Juliet, TN

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

MW-919-102219 L1152823-07 GW

Collected by
BLH/HRC

Collected date/time
10/22/19 14:00

Received date/time
10/23/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1369144	1	10/25/19 00:20	10/25/19 00:20	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1367978	1	10/23/19 21:28	10/23/19 21:28	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1370126	1	10/26/19 23:44	10/26/19 23:44	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1368595	1	10/25/19 10:19	10/28/19 17:25	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1368595	5	10/25/19 10:19	10/29/19 02:58	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1371615	1	10/31/19 08:23	10/31/19 08:23	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1368615	1	10/24/19 11:58	10/24/19 11:58	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1373274	1	10/31/19 21:50	10/31/19 21:50	JCP	Mt. Juliet, TN

EQ-102219 L1152823-08 GW

Collected by
BLH/HRC

Collected date/time
10/22/19 15:00

Received date/time
10/23/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1369144	1	10/25/19 00:29	10/25/19 00:29	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1367978	1	10/23/19 21:44	10/23/19 21:44	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1370126	1	10/27/19 00:02	10/27/19 00:02	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1368595	1	10/25/19 10:19	10/28/19 17:29	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1371615	1	10/31/19 08:44	10/31/19 08:44	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1368615	1	10/24/19 12:52	10/24/19 12:52	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1373274	1	10/31/19 22:10	10/31/19 22:10	JCP	Mt. Juliet, TN

TRIP-102219 L1152823-09 GW

Collected by
BLH/HRC

Collected date/time
10/22/19 15:30

Received date/time
10/23/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1371615	1	10/31/19 00:07	10/31/19 00:07	JAH	Mt. Juliet, TN



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

Project Narrative

L1152823-09, TRIP-102219, VOCs by 8260: Vial accidentally broken prior to analysis. VOC analysis not possible.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	246000		2710	20000	1	10/24/2019 23:27	WG1369144

Sample Narrative:

L1152823-01 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	10500		51.9	1000	1	10/23/2019 18:44	WG1367978
Nitrate	2170		22.7	100	1	10/23/2019 18:44	WG1367978
Sulfate	70000		77.4	5000	1	10/23/2019 18:44	WG1367978

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	4270	<u>B</u>	102	1000	1	10/26/2019 19:05	WG1370126

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	339		15.0	100	1	10/28/2019 16:34	WG1368595
Manganese	313		0.250	5.00	1	10/28/2019 16:34	WG1368595

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	174	<u>B</u>	31.6	100	1	11/03/2019 00:40	WG1373020
(S) a,a,a-Trifluorotoluene(FID)	96.6			78.0-120		11/03/2019 00:40	WG1373020

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	U		0.287	0.678	1	10/24/2019 11:45	WG1368615
Ethane	U		0.296	1.29	1	10/24/2019 11:45	WG1368615
Ethene	U		0.422	1.27	1	10/24/2019 11:45	WG1368615

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	1.77	<u>J J4</u>	1.05	25.0	1	10/29/2019 09:06	WG1371177
Acrylonitrile	U	<u>J4</u>	0.873	5.00	1	10/29/2019 09:06	WG1371177
Benzene	U		0.0896	0.500	1	10/29/2019 09:06	WG1371177
Bromobenzene	U		0.133	0.500	1	10/29/2019 09:06	WG1371177
Bromodichloromethane	U	<u>J4</u>	0.0800	0.500	1	10/29/2019 09:06	WG1371177
Bromochloromethane	U		0.145	0.500	1	10/29/2019 09:06	WG1371177
Bromoform	U		0.186	0.500	1	10/29/2019 09:06	WG1371177
Bromomethane	U		0.157	2.50	1	10/29/2019 09:06	WG1371177
n-Butylbenzene	U		0.143	0.500	1	10/29/2019 09:06	WG1371177
sec-Butylbenzene	U		0.134	0.500	1	10/29/2019 09:06	WG1371177
tert-Butylbenzene	U		0.183	0.500	1	10/29/2019 09:06	WG1371177
Carbon disulfide	U		0.101	0.500	1	10/29/2019 09:06	WG1371177
Carbon tetrachloride	U		0.159	0.500	1	10/29/2019 09:06	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/22/19 09:30

L1152823

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/29/2019 09:06	WG1371177
Chlorodibromomethane	U		0.128	0.500	1	10/29/2019 09:06	WG1371177
Chloroethane	U		0.141	2.50	1	10/29/2019 09:06	WG1371177
Chloroform	U		0.0860	0.500	1	10/29/2019 09:06	WG1371177
Chloromethane	U	JO	0.153	1.25	1	10/29/2019 09:06	WG1371177
2-Chlorotoluene	U		0.111	0.500	1	10/29/2019 09:06	WG1371177
4-Chlorotoluene	U		0.0972	0.500	1	10/29/2019 09:06	WG1371177
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 09:06	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 09:06	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 09:06	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 09:06	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 09:06	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 09:06	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 09:06	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 09:06	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 09:06	WG1371177
1,1-Dichloroethene	U		0.188	0.500	1	10/29/2019 09:06	WG1371177
cis-1,2-Dichloroethene	30.4		0.0933	0.500	1	10/29/2019 09:06	WG1371177
trans-1,2-Dichloroethene	0.426	J	0.152	0.500	1	10/29/2019 09:06	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 09:06	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 09:06	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 09:06	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 09:06	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 09:06	WG1371177
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/29/2019 09:06	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 09:06	WG1371177
Di-isopropyl ether	U	JO	0.0924	0.500	1	10/29/2019 09:06	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 09:06	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 09:06	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 09:06	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 09:06	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 09:06	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 09:06	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 09:06	WG1371177
2-Butanone (MEK)	U	JO	1.28	5.00	1	10/29/2019 09:06	WG1371177
Methylene Chloride	U		1.07	2.50	1	10/29/2019 09:06	WG1371177
4-Methyl-2-pentanone (MIBK)	U	JO	0.823	5.00	1	10/29/2019 09:06	WG1371177
Methyl tert-butyl ether	U		0.102	0.500	1	10/29/2019 09:06	WG1371177
Naphthalene	U		0.174	2.50	1	10/29/2019 09:06	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 09:06	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 09:06	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 09:06	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 09:06	WG1371177
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 09:06	WG1371177
Tetrachloroethene	169		0.995	2.50	5	10/29/2019 19:29	WG1371769
Toluene	U		0.412	0.500	1	10/29/2019 09:06	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 09:06	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 09:06	WG1371177
1,1,1-Trichloroethane	U	J4	0.0940	0.500	1	10/29/2019 09:06	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 09:06	WG1371177
Trichloroethene	48.3		0.153	0.500	1	10/29/2019 09:06	WG1371177
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 09:06	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 09:06	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 09:06	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 09:06	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 09:06	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/29/2019 09:06	WG1371177
Vinyl chloride	0.152	<u>J</u>	0.118	0.500	1	10/29/2019 09:06	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 09:06	WG1371177
(S) Toluene-d8	96.8			80.0-120		10/29/2019 09:06	WG1371177
(S) Toluene-d8	106			80.0-120		10/29/2019 19:29	WG1371769
(S) 4-Bromofluorobenzene	105			77.0-126		10/29/2019 09:06	WG1371177
(S) 4-Bromofluorobenzene	100			77.0-126		10/29/2019 19:29	WG1371769
(S) 1,2-Dichloroethane-d4	101			70.0-130		10/29/2019 09:06	WG1371177
(S) 1,2-Dichloroethane-d4	100			70.0-130		10/29/2019 19:29	WG1371769

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	361000		2710	20000	1	10/24/2019 23:34	WG1369144

Sample Narrative:

L1152823-02 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	23600		51.9	1000	1	10/23/2019 19:17	WG1367978
Nitrate	U		22.7	100	1	10/23/2019 19:17	WG1367978
Sulfate	U		77.4	5000	1	10/23/2019 19:17	WG1367978

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	5950		102	1000	1	10/26/2019 19:30	WG1370126

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	3720		75.0	500	5	10/29/2019 02:45	WG1368595
Manganese	723		0.250	5.00	1	10/28/2019 17:09	WG1368595

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	561000		2710	20000	1	10/24/2019 23:42	WG1369144

Sample Narrative:

L1152823-03 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	70400		51.9	1000	1	10/23/2019 19:33	WG1367978
Nitrate	146		22.7	100	1	10/23/2019 19:33	WG1367978
Sulfate	22100		77.4	5000	1	10/23/2019 19:33	WG1367978

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	15800		102	1000	1	10/26/2019 19:57	WG1370126

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	3380		75.0	500	5	10/29/2019 02:48	WG1368595
Manganese	426		0.250	5.00	1	10/28/2019 17:12	WG1368595

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	2330		0.287	0.678	1	10/24/2019 11:49	WG1368615
Ethane	16.3		0.296	1.29	1	10/24/2019 11:49	WG1368615
Ethene	115		0.422	1.27	1	10/24/2019 11:49	WG1368615

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.45	J J4	1.05	25.0	1	10/29/2019 09:26	WG1371177
Acrylonitrile	U	J4	0.873	5.00	1	10/29/2019 09:26	WG1371177
Benzene	U		0.0896	0.500	1	10/29/2019 09:26	WG1371177
Bromobenzene	U		0.133	0.500	1	10/29/2019 09:26	WG1371177
Bromodichloromethane	U	J4	0.0800	0.500	1	10/29/2019 09:26	WG1371177
Bromochloromethane	U		0.145	0.500	1	10/29/2019 09:26	WG1371177
Bromoform	U		0.186	0.500	1	10/29/2019 09:26	WG1371177
Bromomethane	U		0.157	2.50	1	10/29/2019 09:26	WG1371177
n-Butylbenzene	U		0.143	0.500	1	10/29/2019 09:26	WG1371177
sec-Butylbenzene	U		0.134	0.500	1	10/29/2019 09:26	WG1371177
tert-Butylbenzene	U		0.183	0.500	1	10/29/2019 09:26	WG1371177
Carbon disulfide	U		0.101	0.500	1	10/29/2019 09:26	WG1371177
Carbon tetrachloride	U		0.159	0.500	1	10/29/2019 09:26	WG1371177
Chlorobenzene	U		0.140	0.500	1	10/29/2019 09:26	WG1371177
Chlorodibromomethane	U		0.128	0.500	1	10/29/2019 09:26	WG1371177
Chloroethane	U		0.141	2.50	1	10/29/2019 09:26	WG1371177
Chloroform	0.239	J	0.0860	0.500	1	10/29/2019 09:26	WG1371177
Chloromethane	U	JO	0.153	1.25	1	10/29/2019 09:26	WG1371177
2-Chlorotoluene	U		0.111	0.500	1	10/29/2019 09:26	WG1371177
4-Chlorotoluene	U		0.0972	0.500	1	10/29/2019 09:26	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/22/19 10:45

L1152823

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 09:26	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 09:26	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 09:26	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 09:26	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 09:26	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 09:26	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 09:26	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 09:26	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 09:26	WG1371177
1,1-Dichloroethene	1.78		0.188	0.500	1	10/29/2019 09:26	WG1371177
cis-1,2-Dichloroethene	1420		0.933	5.00	10	10/29/2019 19:48	WG1371769
trans-1,2-Dichloroethene	4.45		0.152	0.500	1	10/29/2019 09:26	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 09:26	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 09:26	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 09:26	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 09:26	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 09:26	WG1371177
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/29/2019 09:26	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 09:26	WG1371177
Di-isopropyl ether	U	JO	0.0924	0.500	1	10/29/2019 09:26	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 09:26	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 09:26	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 09:26	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 09:26	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 09:26	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 09:26	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 09:26	WG1371177
2-Butanone (MEK)	U	JO	1.28	5.00	1	10/29/2019 09:26	WG1371177
Methylene Chloride	U		1.07	2.50	1	10/29/2019 09:26	WG1371177
4-Methyl-2-pentanone (MIBK)	U	JO	0.823	5.00	1	10/29/2019 09:26	WG1371177
Methyl tert-butyl ether	U		0.102	0.500	1	10/29/2019 09:26	WG1371177
Naphthalene	U		0.174	2.50	1	10/29/2019 09:26	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 09:26	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 09:26	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 09:26	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 09:26	WG1371177
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 09:26	WG1371177
Tetrachloroethene	U		1.99	5.00	10	10/29/2019 19:48	WG1371769
Toluene	U		0.412	0.500	1	10/29/2019 09:26	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 09:26	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 09:26	WG1371177
1,1,1-Trichloroethane	U	J4	0.0940	0.500	1	10/29/2019 09:26	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 09:26	WG1371177
Trichloroethene	6.77		0.153	0.500	1	10/29/2019 09:26	WG1371177
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 09:26	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 09:26	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 09:26	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 09:26	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 09:26	WG1371177
Vinyl acetate	U	JO	0.645	5.00	1	10/29/2019 09:26	WG1371177
Vinyl chloride	66.2		0.118	0.500	1	10/29/2019 09:26	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 09:26	WG1371177
(S) Toluene-d8	101			80.0-120		10/29/2019 09:26	WG1371177
(S) Toluene-d8	107			80.0-120		10/29/2019 19:48	WG1371769
(S) 4-Bromofluorobenzene	110			77.0-126		10/29/2019 09:26	WG1371177
(S) 4-Bromofluorobenzene	134	J1		77.0-126		10/29/2019 19:48	WG1371769

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	91.8			70.0-130		10/29/2019 09:26	WG1371177
(S) 1,2-Dichloroethane-d4	101			70.0-130		10/29/2019 19:48	WG1371769

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Sample Narrative:

L1152823-03 WG1371177, WG1371769: Not all compounds reportable at lower dilution.

L1152823-03 WG1371177, WG1371769: Cannot be reanalyzed at lower dilution due to high levels of target analytes.



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	330000		2710	20000	1	10/24/2019 23:49	WG1369144

Sample Narrative:

L1152823-04 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	19300		51.9	1000	1	10/23/2019 20:39	WG1367978
Nitrate	U		22.7	100	1	10/23/2019 20:39	WG1367978
Sulfate	23600		77.4	5000	1	10/23/2019 20:39	WG1367978

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	5510		102	1000	1	10/26/2019 20:20	WG1370126

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	4530		75.0	500	5	10/29/2019 02:51	WG1368595
Manganese	930		0.250	5.00	1	10/28/2019 17:15	WG1368595

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	1500		0.287	0.678	1	10/24/2019 11:51	WG1368615
Ethane	4.04		0.296	1.29	1	10/24/2019 11:51	WG1368615
Ethene	4.17		0.422	1.27	1	10/24/2019 11:51	WG1368615

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U	J4	1.05	25.0	1	10/29/2019 09:46	WG1371177
Acrylonitrile	U	J4	0.873	5.00	1	10/29/2019 09:46	WG1371177
Benzene	U		0.0896	0.500	1	10/29/2019 09:46	WG1371177
Bromobenzene	U		0.133	0.500	1	10/29/2019 09:46	WG1371177
Bromodichloromethane	U	J4	0.0800	0.500	1	10/29/2019 09:46	WG1371177
Bromochloromethane	U		0.145	0.500	1	10/29/2019 09:46	WG1371177
Bromoform	U		0.186	0.500	1	10/29/2019 09:46	WG1371177
Bromomethane	U		0.157	2.50	1	10/29/2019 09:46	WG1371177
n-Butylbenzene	U		0.143	0.500	1	10/29/2019 09:46	WG1371177
sec-Butylbenzene	U		0.134	0.500	1	10/29/2019 09:46	WG1371177
tert-Butylbenzene	U		0.183	0.500	1	10/29/2019 09:46	WG1371177
Carbon disulfide	U		0.101	0.500	1	10/29/2019 09:46	WG1371177
Carbon tetrachloride	U		0.159	0.500	1	10/29/2019 09:46	WG1371177
Chlorobenzene	U		0.140	0.500	1	10/29/2019 09:46	WG1371177
Chlorodibromomethane	U		0.128	0.500	1	10/29/2019 09:46	WG1371177
Chloroethane	U		0.141	2.50	1	10/29/2019 09:46	WG1371177
Chloroform	U		0.0860	0.500	1	10/29/2019 09:46	WG1371177
Chloromethane	U	JO	0.153	1.25	1	10/29/2019 09:46	WG1371177
2-Chlorotoluene	U		0.111	0.500	1	10/29/2019 09:46	WG1371177
4-Chlorotoluene	U		0.0972	0.500	1	10/29/2019 09:46	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 09:46	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 09:46	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 09:46	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 09:46	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 09:46	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 09:46	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 09:46	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 09:46	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 09:46	WG1371177
1,1-Dichloroethene	U		0.188	0.500	1	10/29/2019 09:46	WG1371177
cis-1,2-Dichloroethene	0.819	B	0.0933	0.500	1	10/29/2019 20:07	WG1371769
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/29/2019 09:46	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 09:46	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 09:46	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 09:46	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 09:46	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 09:46	WG1371177
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/29/2019 09:46	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 09:46	WG1371177
Di-isopropyl ether	U	JO	0.0924	0.500	1	10/29/2019 09:46	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 09:46	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 09:46	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 09:46	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 09:46	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 09:46	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 09:46	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 09:46	WG1371177
2-Butanone (MEK)	U	JO	1.28	5.00	1	10/29/2019 09:46	WG1371177
Methylene Chloride	U		1.07	2.50	1	10/29/2019 09:46	WG1371177
4-Methyl-2-pentanone (MIBK)	U	JO	0.823	5.00	1	10/29/2019 09:46	WG1371177
Methyl tert-butyl ether	U		0.102	0.500	1	10/29/2019 09:46	WG1371177
Naphthalene	U		0.174	2.50	1	10/29/2019 09:46	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 09:46	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 09:46	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 09:46	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 09:46	WG1371177
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 09:46	WG1371177
Tetrachloroethene	U		0.199	0.500	1	10/29/2019 09:46	WG1371177
Toluene	U		0.412	0.500	1	10/29/2019 09:46	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 09:46	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 09:46	WG1371177
1,1,1-Trichloroethane	U	J4	0.0940	0.500	1	10/29/2019 09:46	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 09:46	WG1371177
Trichloroethene	U		0.153	0.500	1	10/29/2019 09:46	WG1371177
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 09:46	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 09:46	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 09:46	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 09:46	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 09:46	WG1371177
Vinyl acetate	U	JO	0.645	5.00	1	10/29/2019 09:46	WG1371177
Vinyl chloride	23.2		0.118	0.500	1	10/29/2019 09:46	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 09:46	WG1371177
(S) Toluene-d8	96.1			80.0-120		10/29/2019 09:46	WG1371177
(S) Toluene-d8	107			80.0-120		10/29/2019 20:07	WG1371769
(S) 4-Bromofluorobenzene	105			77.0-126		10/29/2019 09:46	WG1371177
(S) 4-Bromofluorobenzene	97.9			77.0-126		10/29/2019 20:07	WG1371769

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	101			70.0-130		10/29/2019 09:46	WG1371177
(S) 1,2-Dichloroethane-d4	94.1			70.0-130		10/29/2019 20:07	WG1371769

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	245000		2710	20000	1	10/24/2019 23:57	WG1369144

Sample Narrative:

L1152823-05 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	10300		51.9	1000	1	10/23/2019 20:55	WG1367978
Nitrate	1980		22.7	100	1	10/23/2019 20:55	WG1367978
Sulfate	67300		77.4	5000	1	10/23/2019 20:55	WG1367978

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	5090		102	1000	1	10/26/2019 23:06	WG1370126

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	678		15.0	100	1	10/28/2019 17:19	WG1368595
Manganese	376		0.250	5.00	1	10/28/2019 17:19	WG1368595

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	176	<u>B</u>	31.6	100	1	11/03/2019 01:01	WG1373020
(S) a,a,a-Trifluorotoluene(FID)	96.6			78.0-120		11/03/2019 01:01	WG1373020

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	74.8		0.287	0.678	1	10/24/2019 11:54	WG1368615
Ethane	U		0.296	1.29	1	10/24/2019 11:54	WG1368615
Ethene	U		0.422	1.27	1	10/24/2019 11:54	WG1368615

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.24	<u>J J4</u>	1.05	25.0	1	10/29/2019 10:06	WG1371177
Acrylonitrile	U	<u>J4</u>	0.873	5.00	1	10/29/2019 10:06	WG1371177
Benzene	U		0.0896	0.500	1	10/29/2019 10:06	WG1371177
Bromobenzene	U		0.133	0.500	1	10/29/2019 10:06	WG1371177
Bromodichloromethane	U	<u>J4</u>	0.0800	0.500	1	10/29/2019 10:06	WG1371177
Bromochloromethane	U		0.145	0.500	1	10/29/2019 10:06	WG1371177
Bromoform	U		0.186	0.500	1	10/29/2019 10:06	WG1371177
Bromomethane	U		0.157	2.50	1	10/29/2019 10:06	WG1371177
n-Butylbenzene	U		0.143	0.500	1	10/29/2019 10:06	WG1371177
sec-Butylbenzene	U		0.134	0.500	1	10/29/2019 10:06	WG1371177
tert-Butylbenzene	U		0.183	0.500	1	10/29/2019 10:06	WG1371177
Carbon disulfide	U		0.101	0.500	1	10/29/2019 10:06	WG1371177
Carbon tetrachloride	U		0.159	0.500	1	10/29/2019 10:06	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/22/19 12:50

L1152823

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/29/2019 10:06	WG1371177
Chlorodibromomethane	U		0.128	0.500	1	10/29/2019 10:06	WG1371177
Chloroethane	U		0.141	2.50	1	10/29/2019 10:06	WG1371177
Chloroform	U		0.0860	0.500	1	10/29/2019 10:06	WG1371177
Chloromethane	U	JO	0.153	1.25	1	10/29/2019 10:06	WG1371177
2-Chlorotoluene	U		0.111	0.500	1	10/29/2019 10:06	WG1371177
4-Chlorotoluene	U		0.0972	0.500	1	10/29/2019 10:06	WG1371177
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 10:06	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 10:06	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 10:06	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 10:06	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 10:06	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 10:06	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 10:06	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 10:06	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 10:06	WG1371177
1,1-Dichloroethene	U		0.188	0.500	1	10/29/2019 10:06	WG1371177
cis-1,2-Dichloroethene	31.8		0.0933	0.500	1	10/29/2019 10:06	WG1371177
trans-1,2-Dichloroethene	0.398	J	0.152	0.500	1	10/29/2019 10:06	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 10:06	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 10:06	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 10:06	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 10:06	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 10:06	WG1371177
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/29/2019 10:06	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 10:06	WG1371177
Di-isopropyl ether	U	JO	0.0924	0.500	1	10/29/2019 10:06	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 10:06	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 10:06	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 10:06	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 10:06	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 10:06	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 10:06	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 10:06	WG1371177
2-Butanone (MEK)	U	JO	1.28	5.00	1	10/29/2019 10:06	WG1371177
Methylene Chloride	U		1.07	2.50	1	10/29/2019 10:06	WG1371177
4-Methyl-2-pentanone (MIBK)	U	JO	0.823	5.00	1	10/29/2019 10:06	WG1371177
Methyl tert-butyl ether	U		0.102	0.500	1	10/29/2019 10:06	WG1371177
Naphthalene	U		0.174	2.50	1	10/29/2019 10:06	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 10:06	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 10:06	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 10:06	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 10:06	WG1371177
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 10:06	WG1371177
Tetrachloroethene	135		0.995	2.50	5	10/29/2019 20:26	WG1371769
Toluene	U		0.412	0.500	1	10/29/2019 10:06	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 10:06	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 10:06	WG1371177
1,1,1-Trichloroethane	U	J4	0.0940	0.500	1	10/29/2019 10:06	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 10:06	WG1371177
Trichloroethene	46.6		0.153	0.500	1	10/29/2019 10:06	WG1371177
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 10:06	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 10:06	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 10:06	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 10:06	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 10:06	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>J0</u>	0.645	5.00	1	10/29/2019 10:06	WG1371177
Vinyl chloride	0.162	<u>J</u>	0.118	0.500	1	10/29/2019 10:06	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 10:06	WG1371177
(S) Toluene-d8	96.8			80.0-120		10/29/2019 10:06	WG1371177
(S) Toluene-d8	107			80.0-120		10/29/2019 20:26	WG1371769
(S) 4-Bromofluorobenzene	105			77.0-126		10/29/2019 10:06	WG1371177
(S) 4-Bromofluorobenzene	60.4	<u>J2</u>		77.0-126		10/29/2019 20:26	WG1371769
(S) 1,2-Dichloroethane-d4	103			70.0-130		10/29/2019 10:06	WG1371177
(S) 1,2-Dichloroethane-d4	95.6			70.0-130		10/29/2019 20:26	WG1371769

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	330000		2710	20000	1	10/25/2019 00:13	WG1369144

Sample Narrative:

L1152823-06 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	35000		51.9	1000	1	10/23/2019 21:12	WG1367978
Nitrate	U		22.7	100	1	10/23/2019 21:12	WG1367978
Sulfate	12800		77.4	5000	1	10/23/2019 21:12	WG1367978

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	2860	<u>B</u>	102	1000	1	10/26/2019 23:27	WG1370126

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	3060		75.0	500	5	10/29/2019 02:55	WG1368595
Manganese	1050		0.250	5.00	1	10/28/2019 17:22	WG1368595

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	96.4	<u>B, J</u>	31.6	100	1	10/31/2019 08:01	WG1371615
(S) a,a,a-Trifluorotoluene(FID)	95.1			78.0-120		10/31/2019 08:01	WG1371615

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	731		0.287	0.678	1	10/24/2019 11:56	WG1368615
Ethane	U		0.296	1.29	1	10/24/2019 11:56	WG1368615
Ethene	U		0.422	1.27	1	10/24/2019 11:56	WG1368615

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.40	<u>J, J4</u>	1.05	25.0	1	10/29/2019 10:27	WG1371177
Acrylonitrile	U	<u>J4</u>	0.873	5.00	1	10/29/2019 10:27	WG1371177
Benzene	U		0.0896	0.500	1	10/29/2019 10:27	WG1371177
Bromobenzene	U		0.133	0.500	1	10/29/2019 10:27	WG1371177
Bromodichloromethane	U	<u>J4</u>	0.0800	0.500	1	10/29/2019 10:27	WG1371177
Bromochloromethane	U		0.145	0.500	1	10/29/2019 10:27	WG1371177
Bromoform	U		0.186	0.500	1	10/29/2019 10:27	WG1371177
Bromomethane	U		0.157	2.50	1	10/29/2019 10:27	WG1371177
n-Butylbenzene	U		0.143	0.500	1	10/29/2019 10:27	WG1371177
sec-Butylbenzene	U		0.134	0.500	1	10/29/2019 10:27	WG1371177
tert-Butylbenzene	U		0.183	0.500	1	10/29/2019 10:27	WG1371177
Carbon disulfide	U		0.101	0.500	1	10/29/2019 10:27	WG1371177
Carbon tetrachloride	U		0.159	0.500	1	10/29/2019 10:27	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/29/2019 10:27	WG1371177
Chlorodibromomethane	U		0.128	0.500	1	10/29/2019 10:27	WG1371177
Chloroethane	U		0.141	2.50	1	10/29/2019 10:27	WG1371177
Chloroform	U		0.0860	0.500	1	10/29/2019 10:27	WG1371177
Chloromethane	U	JO	0.153	1.25	1	10/29/2019 10:27	WG1371177
2-Chlorotoluene	U		0.111	0.500	1	10/29/2019 10:27	WG1371177
4-Chlorotoluene	U		0.0972	0.500	1	10/29/2019 10:27	WG1371177
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 10:27	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 10:27	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 10:27	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 10:27	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 10:27	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 10:27	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 10:27	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 10:27	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 10:27	WG1371177
1,1-Dichloroethene	U		0.188	0.500	1	10/29/2019 10:27	WG1371177
cis-1,2-Dichloroethene	0.945		0.0933	0.500	1	10/29/2019 10:27	WG1371177
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/29/2019 10:27	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 10:27	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 10:27	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 10:27	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 10:27	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 10:27	WG1371177
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/29/2019 10:27	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 10:27	WG1371177
Di-isopropyl ether	U	JO	0.0924	0.500	1	10/29/2019 10:27	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 10:27	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 10:27	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 10:27	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 10:27	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 10:27	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 10:27	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 10:27	WG1371177
2-Butanone (MEK)	U	JO	1.28	5.00	1	10/29/2019 10:27	WG1371177
Methylene Chloride	U		1.07	2.50	1	10/29/2019 10:27	WG1371177
4-Methyl-2-pentanone (MIBK)	U	JO	0.823	5.00	1	10/29/2019 10:27	WG1371177
Methyl tert-butyl ether	U		0.102	0.500	1	10/29/2019 10:27	WG1371177
Naphthalene	U		0.174	2.50	1	10/29/2019 10:27	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 10:27	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 10:27	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 10:27	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 10:27	WG1371177
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 10:27	WG1371177
Tetrachloroethene	U		0.199	0.500	1	10/29/2019 20:45	WG1371769
Toluene	U		0.412	0.500	1	10/29/2019 10:27	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 10:27	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 10:27	WG1371177
1,1,1-Trichloroethane	U	J4	0.0940	0.500	1	10/29/2019 10:27	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 10:27	WG1371177
Trichloroethene	U		0.153	0.500	1	10/29/2019 10:27	WG1371177
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 10:27	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 10:27	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 10:27	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 10:27	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 10:27	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/29/2019 10:27	WG1371177
Vinyl chloride	0.214	<u>J</u>	0.118	0.500	1	10/29/2019 10:27	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 10:27	WG1371177
(S) Toluene-d8	99.2			80.0-120		10/29/2019 10:27	WG1371177
(S) Toluene-d8	106			80.0-120		10/29/2019 20:45	WG1371769
(S) 4-Bromofluorobenzene	109			77.0-126		10/29/2019 10:27	WG1371177
(S) 4-Bromofluorobenzene	98.1			77.0-126		10/29/2019 20:45	WG1371769
(S) 1,2-Dichloroethane-d4	102			70.0-130		10/29/2019 10:27	WG1371177
(S) 1,2-Dichloroethane-d4	95.3			70.0-130		10/29/2019 20:45	WG1371769

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	330000		2710	20000	1	10/25/2019 00:20	WG1369144

Sample Narrative:

L1152823-07 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	35100		51.9	1000	1	10/23/2019 21:28	WG1367978
Nitrate	U		22.7	100	1	10/23/2019 21:28	WG1367978
Sulfate	12800		77.4	5000	1	10/23/2019 21:28	WG1367978

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2900	<u>B</u>	102	1000	1	10/26/2019 23:44	WG1370126

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	2590		75.0	500	5	10/29/2019 02:58	WG1368595
Manganese	1030		0.250	5.00	1	10/28/2019 17:25	WG1368595

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	90.8	<u>B, J</u>	31.6	100	1	10/31/2019 08:23	WG1371615
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	96.4			78.0-120		10/31/2019 08:23	WG1371615

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	655		0.287	0.678	1	10/24/2019 11:58	WG1368615
Ethane	U		0.296	1.29	1	10/24/2019 11:58	WG1368615
Ethene	U		0.422	1.27	1	10/24/2019 11:58	WG1368615

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	1.47	<u>J</u>	1.05	25.0	1	10/31/2019 21:50	WG1373274
Acrylonitrile	U		0.873	5.00	1	10/31/2019 21:50	WG1373274
Benzene	U		0.0896	0.500	1	10/31/2019 21:50	WG1373274
Bromobenzene	U	<u>J4</u>	0.133	0.500	1	10/31/2019 21:50	WG1373274
Bromodichloromethane	U		0.0800	0.500	1	10/31/2019 21:50	WG1373274
Bromochloromethane	U		0.145	0.500	1	10/31/2019 21:50	WG1373274
Bromoform	U		0.186	0.500	1	10/31/2019 21:50	WG1373274
Bromomethane	U		0.157	2.50	1	10/31/2019 21:50	WG1373274
n-Butylbenzene	U		0.143	0.500	1	10/31/2019 21:50	WG1373274
sec-Butylbenzene	U		0.134	0.500	1	10/31/2019 21:50	WG1373274
tert-Butylbenzene	U		0.183	0.500	1	10/31/2019 21:50	WG1373274
Carbon disulfide	U		0.101	0.500	1	10/31/2019 21:50	WG1373274
Carbon tetrachloride	U		0.159	0.500	1	10/31/2019 21:50	WG1373274

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/22/19 14:00

L1152823

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/31/2019 21:50	WG1373274
Chlorodibromomethane	U		0.128	0.500	1	10/31/2019 21:50	WG1373274
Chloroethane	U		0.141	2.50	1	10/31/2019 21:50	WG1373274
Chloroform	U		0.0860	0.500	1	10/31/2019 21:50	WG1373274
Chloromethane	U		0.153	1.25	1	10/31/2019 21:50	WG1373274
2-Chlorotoluene	U	J4	0.111	0.500	1	10/31/2019 21:50	WG1373274
4-Chlorotoluene	U		0.0972	0.500	1	10/31/2019 21:50	WG1373274
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/31/2019 21:50	WG1373274
1,2-Dibromoethane	U		0.193	0.500	1	10/31/2019 21:50	WG1373274
Dibromomethane	U		0.117	0.500	1	10/31/2019 21:50	WG1373274
1,2-Dichlorobenzene	U		0.101	0.500	1	10/31/2019 21:50	WG1373274
1,3-Dichlorobenzene	U		0.130	0.500	1	10/31/2019 21:50	WG1373274
1,4-Dichlorobenzene	U		0.121	0.500	1	10/31/2019 21:50	WG1373274
Dichlorodifluoromethane	U		0.127	2.50	1	10/31/2019 21:50	WG1373274
1,1-Dichloroethane	U		0.114	0.500	1	10/31/2019 21:50	WG1373274
1,2-Dichloroethane	U		0.108	0.500	1	10/31/2019 21:50	WG1373274
1,1-Dichloroethene	U		0.188	0.500	1	10/31/2019 21:50	WG1373274
cis-1,2-Dichloroethene	0.720		0.0933	0.500	1	10/31/2019 21:50	WG1373274
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/31/2019 21:50	WG1373274
1,2-Dichloropropane	U		0.190	0.500	1	10/31/2019 21:50	WG1373274
1,1-Dichloropropene	U		0.128	0.500	1	10/31/2019 21:50	WG1373274
1,3-Dichloropropane	U		0.147	1.00	1	10/31/2019 21:50	WG1373274
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/31/2019 21:50	WG1373274
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/31/2019 21:50	WG1373274
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/31/2019 21:50	WG1373274
2,2-Dichloropropane	U		0.0929	0.500	1	10/31/2019 21:50	WG1373274
Di-isopropyl ether	U		0.0924	0.500	1	10/31/2019 21:50	WG1373274
Ethylbenzene	U		0.158	0.500	1	10/31/2019 21:50	WG1373274
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/31/2019 21:50	WG1373274
2-Hexanone	U		0.757	5.00	1	10/31/2019 21:50	WG1373274
n-Hexane	U		0.305	5.00	1	10/31/2019 21:50	WG1373274
Iodomethane	U		0.377	10.0	1	10/31/2019 21:50	WG1373274
Isopropylbenzene	U		0.126	0.500	1	10/31/2019 21:50	WG1373274
p-Isopropyltoluene	U		0.138	0.500	1	10/31/2019 21:50	WG1373274
2-Butanone (MEK)	U		1.28	5.00	1	10/31/2019 21:50	WG1373274
Methylene Chloride	U		1.07	2.50	1	10/31/2019 21:50	WG1373274
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/31/2019 21:50	WG1373274
Methyl tert-butyl ether	U		0.102	0.500	1	10/31/2019 21:50	WG1373274
Naphthalene	U		0.174	2.50	1	10/31/2019 21:50	WG1373274
n-Propylbenzene	U		0.162	0.500	1	10/31/2019 21:50	WG1373274
Styrene	U		0.117	0.500	1	10/31/2019 21:50	WG1373274
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/31/2019 21:50	WG1373274
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/31/2019 21:50	WG1373274
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/31/2019 21:50	WG1373274
Tetrachloroethene	U		0.199	0.500	1	10/31/2019 21:50	WG1373274
Toluene	U		0.412	0.500	1	10/31/2019 21:50	WG1373274
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/31/2019 21:50	WG1373274
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/31/2019 21:50	WG1373274
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/31/2019 21:50	WG1373274
1,1,2-Trichloroethane	U		0.186	0.500	1	10/31/2019 21:50	WG1373274
Trichloroethene	U		0.153	0.500	1	10/31/2019 21:50	WG1373274
Trichlorofluoromethane	U		0.130	2.50	1	10/31/2019 21:50	WG1373274
1,2,3-Trichloropropane	U		0.247	2.50	1	10/31/2019 21:50	WG1373274
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/31/2019 21:50	WG1373274
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/31/2019 21:50	WG1373274
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/31/2019 21:50	WG1373274

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/31/2019 21:50	WG1373274
Vinyl chloride	U		0.118	0.500	1	10/31/2019 21:50	WG1373274
Xylenes, Total	U		0.316	1.50	1	10/31/2019 21:50	WG1373274
<i>(S) Toluene-d8</i>	113			80.0-120		10/31/2019 21:50	WG1373274
<i>(S) 4-Bromofluorobenzene</i>	109			77.0-126		10/31/2019 21:50	WG1373274
<i>(S) 1,2-Dichloroethane-d4</i>	101			70.0-130		10/31/2019 21:50	WG1373274

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	4850	J	2710	20000	1	10/25/2019 00:29	WG1369144

Sample Narrative:

L1152823-08 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	397	J	51.9	1000	1	10/23/2019 21:44	WG1367978
Nitrate	U		22.7	100	1	10/23/2019 21:44	WG1367978
Sulfate	334	J	77.4	5000	1	10/23/2019 21:44	WG1367978

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	168	B J	102	1000	1	10/27/2019 00:02	WG1370126

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	25.5	J	15.0	100	1	10/28/2019 17:29	WG1368595
Manganese	4.16	B J	0.250	5.00	1	10/28/2019 17:29	WG1368595

Volatile Organic Compounds (GC) by Method NWTPHGX

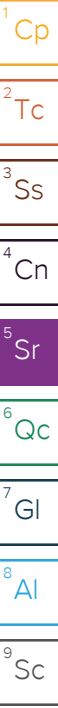
Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	88.4	B J	31.6	100	1	10/31/2019 08:44	WG1371615
(S) a,a,a-Trifluorotoluene(FID)	96.4			78.0-120		10/31/2019 08:44	WG1371615

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	32.7		0.287	0.678	1	10/24/2019 12:52	WG1368615
Ethane	U		0.296	1.29	1	10/24/2019 12:52	WG1368615
Ethene	U		0.422	1.27	1	10/24/2019 12:52	WG1368615

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	2.04	J	1.05	25.0	1	10/31/2019 22:10	WG1373274
Acrylonitrile	U		0.873	5.00	1	10/31/2019 22:10	WG1373274
Benzene	U		0.0896	0.500	1	10/31/2019 22:10	WG1373274
Bromobenzene	U	J4	0.133	0.500	1	10/31/2019 22:10	WG1373274
Bromodichloromethane	U		0.0800	0.500	1	10/31/2019 22:10	WG1373274
Bromochloromethane	U		0.145	0.500	1	10/31/2019 22:10	WG1373274
Bromoform	U		0.186	0.500	1	10/31/2019 22:10	WG1373274
Bromomethane	U		0.157	2.50	1	10/31/2019 22:10	WG1373274
n-Butylbenzene	U		0.143	0.500	1	10/31/2019 22:10	WG1373274
sec-Butylbenzene	U		0.134	0.500	1	10/31/2019 22:10	WG1373274
tert-Butylbenzene	U		0.183	0.500	1	10/31/2019 22:10	WG1373274
Carbon disulfide	U		0.101	0.500	1	10/31/2019 22:10	WG1373274
Carbon tetrachloride	U		0.159	0.500	1	10/31/2019 22:10	WG1373274





Collected date/time: 10/22/19 15:00

L1152823

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/31/2019 22:10	WG1373274
Chlorodibromomethane	U		0.128	0.500	1	10/31/2019 22:10	WG1373274
Chloroethane	U		0.141	2.50	1	10/31/2019 22:10	WG1373274
Chloroform	0.398	J	0.0860	0.500	1	10/31/2019 22:10	WG1373274
Chloromethane	U		0.153	1.25	1	10/31/2019 22:10	WG1373274
2-Chlorotoluene	U	J4	0.111	0.500	1	10/31/2019 22:10	WG1373274
4-Chlorotoluene	U		0.0972	0.500	1	10/31/2019 22:10	WG1373274
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/31/2019 22:10	WG1373274
1,2-Dibromoethane	U		0.193	0.500	1	10/31/2019 22:10	WG1373274
Dibromomethane	U		0.117	0.500	1	10/31/2019 22:10	WG1373274
1,2-Dichlorobenzene	U		0.101	0.500	1	10/31/2019 22:10	WG1373274
1,3-Dichlorobenzene	U		0.130	0.500	1	10/31/2019 22:10	WG1373274
1,4-Dichlorobenzene	U		0.121	0.500	1	10/31/2019 22:10	WG1373274
Dichlorodifluoromethane	U		0.127	2.50	1	10/31/2019 22:10	WG1373274
1,1-Dichloroethane	U		0.114	0.500	1	10/31/2019 22:10	WG1373274
1,2-Dichloroethane	U		0.108	0.500	1	10/31/2019 22:10	WG1373274
1,1-Dichloroethene	U		0.188	0.500	1	10/31/2019 22:10	WG1373274
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/31/2019 22:10	WG1373274
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/31/2019 22:10	WG1373274
1,2-Dichloropropane	U		0.190	0.500	1	10/31/2019 22:10	WG1373274
1,1-Dichloropropene	U		0.128	0.500	1	10/31/2019 22:10	WG1373274
1,3-Dichloropropane	U		0.147	1.00	1	10/31/2019 22:10	WG1373274
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/31/2019 22:10	WG1373274
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/31/2019 22:10	WG1373274
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/31/2019 22:10	WG1373274
2,2-Dichloropropane	U		0.0929	0.500	1	10/31/2019 22:10	WG1373274
Di-isopropyl ether	U		0.0924	0.500	1	10/31/2019 22:10	WG1373274
Ethylbenzene	U		0.158	0.500	1	10/31/2019 22:10	WG1373274
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/31/2019 22:10	WG1373274
2-Hexanone	U		0.757	5.00	1	10/31/2019 22:10	WG1373274
n-Hexane	U		0.305	5.00	1	10/31/2019 22:10	WG1373274
Iodomethane	U		0.377	10.0	1	10/31/2019 22:10	WG1373274
Isopropylbenzene	U		0.126	0.500	1	10/31/2019 22:10	WG1373274
p-Isopropyltoluene	U		0.138	0.500	1	10/31/2019 22:10	WG1373274
2-Butanone (MEK)	U		1.28	5.00	1	10/31/2019 22:10	WG1373274
Methylene Chloride	U		1.07	2.50	1	10/31/2019 22:10	WG1373274
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/31/2019 22:10	WG1373274
Methyl tert-butyl ether	U		0.102	0.500	1	10/31/2019 22:10	WG1373274
Naphthalene	U		0.174	2.50	1	10/31/2019 22:10	WG1373274
n-Propylbenzene	U		0.162	0.500	1	10/31/2019 22:10	WG1373274
Styrene	U		0.117	0.500	1	10/31/2019 22:10	WG1373274
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/31/2019 22:10	WG1373274
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/31/2019 22:10	WG1373274
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/31/2019 22:10	WG1373274
Tetrachloroethene	U		0.199	0.500	1	10/31/2019 22:10	WG1373274
Toluene	U		0.412	0.500	1	10/31/2019 22:10	WG1373274
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/31/2019 22:10	WG1373274
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/31/2019 22:10	WG1373274
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/31/2019 22:10	WG1373274
1,1,2-Trichloroethane	U		0.186	0.500	1	10/31/2019 22:10	WG1373274
Trichloroethene	U		0.153	0.500	1	10/31/2019 22:10	WG1373274
Trichlorofluoromethane	U		0.130	2.50	1	10/31/2019 22:10	WG1373274
1,2,3-Trichloropropane	U		0.247	2.50	1	10/31/2019 22:10	WG1373274
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/31/2019 22:10	WG1373274
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/31/2019 22:10	WG1373274
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/31/2019 22:10	WG1373274

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/22/19 15:00

L1152823

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/31/2019 22:10	WG1373274
Vinyl chloride	U		0.118	0.500	1	10/31/2019 22:10	WG1373274
Xylenes, Total	U		0.316	1.50	1	10/31/2019 22:10	WG1373274
(S) Toluene-d8	111			80.0-120		10/31/2019 22:10	WG1373274
(S) 4-Bromofluorobenzene	108			77.0-126		10/31/2019 22:10	WG1373274
(S) 1,2-Dichloroethane-d4	100			70.0-130		10/31/2019 22:10	WG1373274

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	91.3	<u>BJ</u>	31.6	100	1	10/31/2019 00:07	WG1371615
(S) a,a,a-Trifluorotoluene(FID)	96.1			78.0-120		10/31/2019 00:07	WG1371615

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3464935-1 10/24/19 21:15

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	U		2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1152333-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1152333-01 10/24/19 21:24 • (DUP) R3464935-2 10/24/19 21:31

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	589000	589000	1	0.0563		20

Sample Narrative:

OS: Endpoint pH 4.5
DUP: Endpoint pH 4.5

L1152791-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1152791-01 10/24/19 23:11 • (DUP) R3464935-4 10/24/19 23:20

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	519000	520000	1	0.243		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace
DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3464935-3 10/24/19 22:38

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	98500	98.5	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3464355-1 10/23/19 12:55

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	U		51.9	1000
Nitrate	U		22.7	100
Sulfate	U		77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1152818-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1152818-06 10/23/19 17:38 • (DUP) R3464355-3 10/23/19 17:55

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	335	331	1	1.26	U	15
Nitrate	U	0.000	1	0.000		15
Sulfate	U	0.000	1	0.000		15

L1152823-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1152823-08 10/23/19 21:44 • (DUP) R3464355-8 10/24/19 08:01

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	397	406	1	2.07	U	15
Nitrate	U	0.000	1	0.000		15
Sulfate	334	322	1	3.50	U	15

Laboratory Control Sample (LCS)

(LCS) R3464355-2 10/23/19 13:11

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Chloride	40000	38800	97.1	80.0-120	
Nitrate	8000	8040	101	80.0-120	
Sulfate	40000	39000	97.4	80.0-120	



L1152818-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1152818-06 10/23/19 17:38 • (MS) R3464355-4 10/23/19 18:11 • (MSD) R3464355-5 10/23/19 18:28

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	335	50000	49500	99.3	98.3	1	80.0-120			1.03	15
Nitrate	5000	U	4880	4820	97.6	96.4	1	80.0-120			1.19	15
Sulfate	50000	U	49700	49200	99.4	98.4	1	80.0-120			0.969	15

L1152823-08 Original Sample (OS) • Matrix Spike (MS)

(OS) L1152823-08 10/23/19 21:44 • (MS) R3464355-7 10/23/19 22:17

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	397	49500	98.3	1	80.0-120	
Nitrate	5000	U	4920	98.3	1	80.0-120	
Sulfate	50000	334	49300	97.9	1	80.0-120	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3466121-1 10/26/19 11:45

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	434	↓	102	1000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1152741-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1152741-04 10/26/19 15:20 • (DUP) R3466121-3 10/26/19 15:34

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC	ND	300	1	0.000		20

L1152823-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1152823-04 10/26/19 20:20 • (DUP) R3466121-6 10/26/19 20:39

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC	5510	5450	1	1.04		20

Laboratory Control Sample (LCS)

(LCS) R3466121-2 10/26/19 12:26

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC	75000	73300	97.7	85.0-115	

L1152741-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1152741-06 10/26/19 17:52 • (MS) R3466121-4 10/26/19 18:20 • (MSD) R3466121-5 10/26/19 18:43

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC	50000	ND	48400	48500	96.4	96.7	1	80.0-120			0.310	20

L1152823-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1152823-08 10/27/19 00:02 • (MS) R3466121-7 10/27/19 00:26 • (MSD) R3466121-8 10/27/19 00:53

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC	50000	168	50800	50800	101	101	1	80.0-120			0.0788	20



Method Blank (MB)

(MB) R3466042-1 10/28/19 16:24

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Iron	U		15.0	100
Manganese	0.427	J	0.250	5.00

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3466042-2 10/28/19 16:28 • (LCSD) R3466042-3 10/28/19 16:31

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Iron	5000	4950	5070	99.0	101	80.0-120			2.36	20
Manganese	50.0	49.3	51.5	98.6	103	80.0-120			4.31	20

5 Sr

6 Qc

L1152823-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1152823-01 10/28/19 16:34 • (MS) R3466042-5 10/28/19 16:41 • (MSD) R3466042-6 10/28/19 16:45

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Iron	5000	339	5370	5230	101	97.9	1	75.0-125			2.51	20
Manganese	50.0	313	360	361	93.9	96.6	1	75.0-125			0.373	20

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3467099-2 10/30/19 23:24

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	103		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	96.1			78.0-120

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS)

(LCS) R3467099-1 10/30/19 22:41

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5290	96.2	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			103	78.0-120	

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3467812-2 11/02/19 22:54

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	97.6	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	96.1			78.0-120

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS)

(LCS) R3467812-1 11/02/19 20:04

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	4900	89.1	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			103	78.0-120	

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3464593-1 10/24/19 11:26

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1152823-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1152823-06 10/24/19 11:56 • (DUP) R3464593-2 10/24/19 12:54

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	731	765	1	4.55		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

L1152959-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1152959-09 10/24/19 13:31 • (DUP) R3464593-3 10/24/19 13:37

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	U	0.000	1	0.000		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3464593-4 10/24/19 13:42 • (LCSD) R3464593-5 10/24/19 13:54

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	64.6	68.2	95.3	101	85.0-115			5.42	20
Ethane	129	112	131	86.8	102	85.0-115			15.6	20
Ethene	127	117	136	92.1	107	85.0-115			15.0	20



Method Blank (MB)

(MB) R3466378-3 10/29/19 03:41

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3466378-3 10/29/19 03:41

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	97.6			80.0-120
(S) 4-Bromofluorobenzene	107			77.0-126
(S) 1,2-Dichloroethane-d4	103			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3466378-1 10/29/19 02:20

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	125	91.7	73.4	19.0-160	J4
Acrylonitrile	125	90.2	72.2	55.0-149	J4
Benzene	25.0	27.6	110	70.0-123	
Bromobenzene	25.0	23.0	92.0	73.0-121	
Bromodichloromethane	25.0	30.2	121	75.0-120	J4
Bromochloromethane	25.0	29.1	116	76.0-122	
Bromoform	25.0	22.1	88.4	68.0-132	
Bromomethane	25.0	25.1	100	10.0-160	
n-Butylbenzene	25.0	26.1	104	73.0-125	
sec-Butylbenzene	25.0	24.5	98.0	75.0-125	
tert-Butylbenzene	25.0	25.3	101	76.0-124	
Carbon disulfide	25.0	24.5	98.0	61.0-128	
Carbon tetrachloride	25.0	30.0	120	68.0-126	
Chlorobenzene	25.0	24.6	98.4	80.0-121	
Chlorodibromomethane	25.0	26.6	106	77.0-125	
Chloroethane	25.0	23.2	92.8	47.0-150	
Chloroform	25.0	27.3	109	73.0-120	
Chloromethane	25.0	16.4	65.6	41.0-142	
2-Chlorotoluene	25.0	25.1	100	76.0-123	
4-Chlorotoluene	25.0	25.2	101	75.0-122	
1,2-Dibromo-3-Chloropropane	25.0	24.8	99.2	58.0-134	
1,2-Dibromoethane	25.0	23.3	93.2	80.0-122	
Dibromomethane	25.0	29.6	118	80.0-120	
1,2-Dichlorobenzene	25.0	23.2	92.8	79.0-121	
1,3-Dichlorobenzene	25.0	23.6	94.4	79.0-120	
1,4-Dichlorobenzene	25.0	22.6	90.4	79.0-120	
Dichlorodifluoromethane	25.0	27.2	109	51.0-149	
1,1-Dichloroethane	25.0	24.5	98.0	70.0-126	
1,2-Dichloroethane	25.0	26.6	106	70.0-128	
1,1-Dichloroethene	25.0	28.4	114	71.0-124	
cis-1,2-Dichloroethene	25.0	26.6	106	73.0-120	
trans-1,2-Dichloroethene	25.0	27.7	111	73.0-120	
1,2-Dichloropropane	25.0	24.0	96.0	77.0-125	
1,1-Dichloropropene	25.0	29.6	118	74.0-126	
1,3-Dichloropropane	25.0	24.7	98.8	80.0-120	
cis-1,3-Dichloropropene	25.0	29.6	118	80.0-123	
trans-1,3-Dichloropropene	25.0	26.7	107	78.0-124	
trans-1,4-Dichloro-2-butene	25.0	17.0	68.0	33.0-144	
2,2-Dichloropropane	25.0	30.5	122	58.0-130	
Di-isopropyl ether	25.0	17.5	70.0	58.0-138	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3466378-1 10/29/19 02:20

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Ethylbenzene	25.0	24.6	98.4	79.0-123	
Hexachloro-1,3-butadiene	25.0	26.8	107	54.0-138	
2-Hexanone	125	97.6	78.1	67.0-149	
n-Hexane	25.0	22.1	88.4	57.0-133	
Iodomethane	125	152	122	33.0-147	
Isopropylbenzene	25.0	25.1	100	76.0-127	
p-Isopropyltoluene	25.0	25.3	101	76.0-125	
2-Butanone (MEK)	125	90.9	72.7	44.0-160	
Methylene Chloride	25.0	22.8	91.2	67.0-120	
4-Methyl-2-pentanone (MIBK)	125	88.6	70.9	68.0-142	
Methyl tert-butyl ether	25.0	25.7	103	68.0-125	
Naphthalene	25.0	24.4	97.6	54.0-135	
n-Propylbenzene	25.0	25.9	104	77.0-124	
Styrene	25.0	23.9	95.6	73.0-130	
1,1,1,2-Tetrachloroethane	25.0	24.8	99.2	75.0-125	
1,1,2,2-Tetrachloroethane	25.0	21.8	87.2	65.0-130	
1,1,2-Trichlorotrifluoroethane	25.0	26.2	105	69.0-132	
Tetrachloroethene	25.0	27.3	109	72.0-132	
Toluene	25.0	26.3	105	79.0-120	
1,2,3-Trichlorobenzene	25.0	26.2	105	50.0-138	
1,2,4-Trichlorobenzene	25.0	25.6	102	57.0-137	
1,1,1-Trichloroethane	25.0	31.7	127	73.0-124	J4
1,1,2-Trichloroethane	25.0	26.3	105	80.0-120	
Trichloroethene	25.0	29.1	116	78.0-124	
Trichlorofluoromethane	25.0	29.1	116	59.0-147	
1,2,3-Trichloropropane	25.0	24.5	98.0	73.0-130	
1,2,4-Trimethylbenzene	25.0	24.7	98.8	76.0-121	
1,2,3-Trimethylbenzene	25.0	23.8	95.2	77.0-120	
1,3,5-Trimethylbenzene	25.0	24.7	98.8	76.0-122	
Vinyl acetate	125	88.5	70.8	11.0-160	
Vinyl chloride	25.0	21.0	84.0	67.0-131	
Xylenes, Total	75.0	72.0	96.0	79.0-123	
(S) Toluene-d8			99.9	80.0-120	
(S) 4-Bromofluorobenzene			105	77.0-126	
(S) 1,2-Dichloroethane-d4			98.5	70.0-130	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3467086-3 10/29/19 18:32

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
cis-1,2-Dichloroethene	0.167	↓	0.0933	0.500
Tetrachloroethene	U		0.199	0.500
(S) Toluene-d8	104			80.0-120
(S) 4-Bromofluorobenzene	97.9			77.0-126
(S) 1,2-Dichloroethane-d4	97.1			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3467086-1 10/29/19 17:35 • (LCSD) R3467086-2 10/29/19 17:54

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
cis-1,2-Dichloroethene	5.00	4.96	5.27	99.2	105	73.0-120			6.06	20
Tetrachloroethene	5.00	5.06	5.67	101	113	72.0-132			11.4	20
(S) Toluene-d8				104	104	80.0-120				
(S) 4-Bromofluorobenzene				99.8	98.6	77.0-126				
(S) 1,2-Dichloroethane-d4				98.8	96.4	70.0-130				

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3467617-4 10/31/19 20:42

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3467617-4 10/31/19 20:42

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,2,4-Trimethylbenzene	U		0.123	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	114			80.0-120
(S) 4-Bromofluorobenzene	109			77.0-126
(S) 1,2-Dichloroethane-d4	98.7			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3467617-1 10/31/19 19:21 • (LCSD) R3467617-2 10/31/19 19:41

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	25.0	23.4	19.7	93.6	78.8	19.0-160			17.2	27
Acrylonitrile	25.0	24.3	22.1	97.2	88.4	55.0-149			9.48	20
Benzene	5.00	4.59	4.37	91.8	87.4	70.0-123			4.91	20
Bromobenzene	5.00	4.05	3.63	81.0	72.6	73.0-121		J4	10.9	20
Bromodichloromethane	5.00	4.88	4.63	97.6	92.6	75.0-120			5.26	20
Bromochloromethane	5.00	5.53	5.30	111	106	76.0-122			4.25	20
Bromoform	5.00	6.04	5.96	121	119	68.0-132			1.33	20
Bromomethane	5.00	4.96	4.93	99.2	98.6	10.0-160			0.607	25
n-Butylbenzene	5.00	4.12	3.69	82.4	73.8	73.0-125			11.0	20
sec-Butylbenzene	5.00	4.32	3.99	86.4	79.8	75.0-125			7.94	20
tert-Butylbenzene	5.00	4.74	4.25	94.8	85.0	76.0-124			10.9	20
Carbon disulfide	5.00	4.23	4.11	84.6	82.2	61.0-128			2.88	20
Carbon tetrachloride	5.00	5.45	5.40	109	108	68.0-126			0.922	20
Chlorobenzene	5.00	5.17	4.90	103	98.0	80.0-121			5.36	20
Chlorodibromomethane	5.00	5.80	5.64	116	113	77.0-125			2.80	20
Chloroethane	5.00	4.85	4.77	97.0	95.4	47.0-150			1.66	20
Chloroform	5.00	4.46	4.43	89.2	88.6	73.0-120			0.675	20
Chloromethane	5.00	4.07	4.10	81.4	82.0	41.0-142			0.734	20
2-Chlorotoluene	5.00	4.27	3.77	85.4	75.4	76.0-123		J4	12.4	20
4-Chlorotoluene	5.00	4.29	3.77	85.8	75.4	75.0-122			12.9	20
1,2-Dibromo-3-Chloropropane	5.00	5.35	4.77	107	95.4	58.0-134			11.5	20
1,2-Dibromoethane	5.00	5.25	4.94	105	98.8	80.0-122			6.08	20
Dibromomethane	5.00	5.04	5.16	101	103	80.0-120			2.35	20
1,2-Dichlorobenzene	5.00	5.27	4.84	105	96.8	79.0-121			8.51	20
1,3-Dichlorobenzene	5.00	5.06	4.57	101	91.4	79.0-120			10.2	20
1,4-Dichlorobenzene	5.00	4.54	4.32	90.8	86.4	79.0-120			4.97	20
trans-1,4-Dichloro-2-butene	5.00	3.69	3.14	73.8	62.8	33.0-144			16.1	20
Dichlorodifluoromethane	5.00	4.40	4.24	88.0	84.8	51.0-149			3.70	20
1,1-Dichloroethane	5.00	4.67	4.53	93.4	90.6	70.0-126			3.04	20
1,2-Dichloroethane	5.00	4.42	4.43	88.4	88.6	70.0-128			0.226	20
1,1-Dichloroethene	5.00	4.59	4.60	91.8	92.0	71.0-124			0.218	20
cis-1,2-Dichloroethene	5.00	4.65	4.78	93.0	95.6	73.0-120			2.76	20
trans-1,2-Dichloroethene	5.00	4.74	4.76	94.8	95.2	73.0-120			0.421	20
1,2-Dichloropropane	5.00	4.59	4.69	91.8	93.8	77.0-125			2.16	20
1,1-Dichloropropene	5.00	4.72	4.52	94.4	90.4	74.0-126			4.33	20
1,3-Dichloropropane	5.00	5.03	4.73	101	94.6	80.0-120			6.15	20
cis-1,3-Dichloropropene	5.00	4.61	4.47	92.2	89.4	80.0-123			3.08	20
trans-1,3-Dichloropropene	5.00	4.82	4.85	96.4	97.0	78.0-124			0.620	20
2,2-Dichloropropane	5.00	5.14	4.76	103	95.2	58.0-130			7.68	20
Di-isopropyl ether	5.00	4.68	4.56	93.6	91.2	58.0-138			2.60	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3467617-1 10/31/19 19:21 • (LCSD) R3467617-2 10/31/19 19:41

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethylbenzene	5.00	4.92	4.74	98.4	94.8	79.0-123			3.73	20
Hexachloro-1,3-butadiene	5.00	4.63	4.21	92.6	84.2	54.0-138			9.50	20
2-Hexanone	25.0	24.8	24.3	99.2	97.2	67.0-149			2.04	20
n-Hexane	5.00	4.51	4.10	90.2	82.0	57.0-133			9.52	20
Iodomethane	25.0	26.8	26.3	107	105	33.0-147			1.88	26
Isopropylbenzene	5.00	5.34	4.93	107	98.6	76.0-127			7.98	20
p-Isopropyltoluene	5.00	4.64	4.12	92.8	82.4	76.0-125			11.9	20
2-Butanone (MEK)	25.0	24.4	22.4	97.6	89.6	44.0-160			8.55	20
Methylene Chloride	5.00	4.46	4.40	89.2	88.0	67.0-120			1.35	20
4-Methyl-2-pentanone (MIBK)	25.0	24.5	23.5	98.0	94.0	68.0-142			4.17	20
Methyl tert-butyl ether	5.00	5.04	4.80	101	96.0	68.0-125			4.88	20
Naphthalene	5.00	4.31	4.18	86.2	83.6	54.0-135			3.06	20
n-Propylbenzene	5.00	4.18	3.86	83.6	77.2	77.0-124			7.96	20
Styrene	5.00	5.15	5.00	103	100	73.0-130			2.96	20
1,1,1,2-Tetrachloroethane	5.00	5.56	5.44	111	109	75.0-125			2.18	20
1,1,2,2-Tetrachloroethane	5.00	4.03	3.79	80.6	75.8	65.0-130			6.14	20
Tetrachloroethene	5.00	5.40	5.28	108	106	72.0-132			2.25	20
Toluene	5.00	4.93	4.78	98.6	95.6	79.0-120			3.09	20
1,1,2-Trichlorotrifluoroethane	5.00	4.94	4.80	98.8	96.0	69.0-132			2.87	20
1,2,3-Trichlorobenzene	5.00	4.49	4.35	89.8	87.0	50.0-138			3.17	20
1,2,4-Trichlorobenzene	5.00	4.52	4.20	90.4	84.0	57.0-137			7.34	20
1,1,1-Trichloroethane	5.00	5.16	4.98	103	99.6	73.0-124			3.55	20
1,1,2-Trichloroethane	5.00	5.17	5.19	103	104	80.0-120			0.386	20
Trichloroethene	5.00	5.40	5.18	108	104	78.0-124			4.16	20
Trichlorofluoromethane	5.00	5.19	5.06	104	101	59.0-147			2.54	20
1,2,3-Trichloropropane	5.00	4.20	4.39	84.0	87.8	73.0-130			4.42	20
1,2,3-Trimethylbenzene	5.00	4.51	4.07	90.2	81.4	77.0-120			10.3	20
1,2,4-Trimethylbenzene	5.00	4.39	3.95	87.8	79.0	76.0-121			10.6	20
1,3,5-Trimethylbenzene	5.00	4.43	3.87	88.6	77.4	76.0-122			13.5	20
Vinyl acetate	25.0	23.3	22.4	93.2	89.6	11.0-160			3.94	20
Vinyl chloride	5.00	4.80	4.79	96.0	95.8	67.0-131			0.209	20
Xylenes, Total	15.0	15.3	14.7	102	98.0	79.0-123			4.00	20
(S) Toluene-d8				111	110	80.0-120				
(S) 4-Bromofluorobenzene				109	110	77.0-126				
(S) 1,2-Dichloroethane-d4				97.4	100	70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration method criteria.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
J4	The associated batch QC was outside the established quality control range for accuracy.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

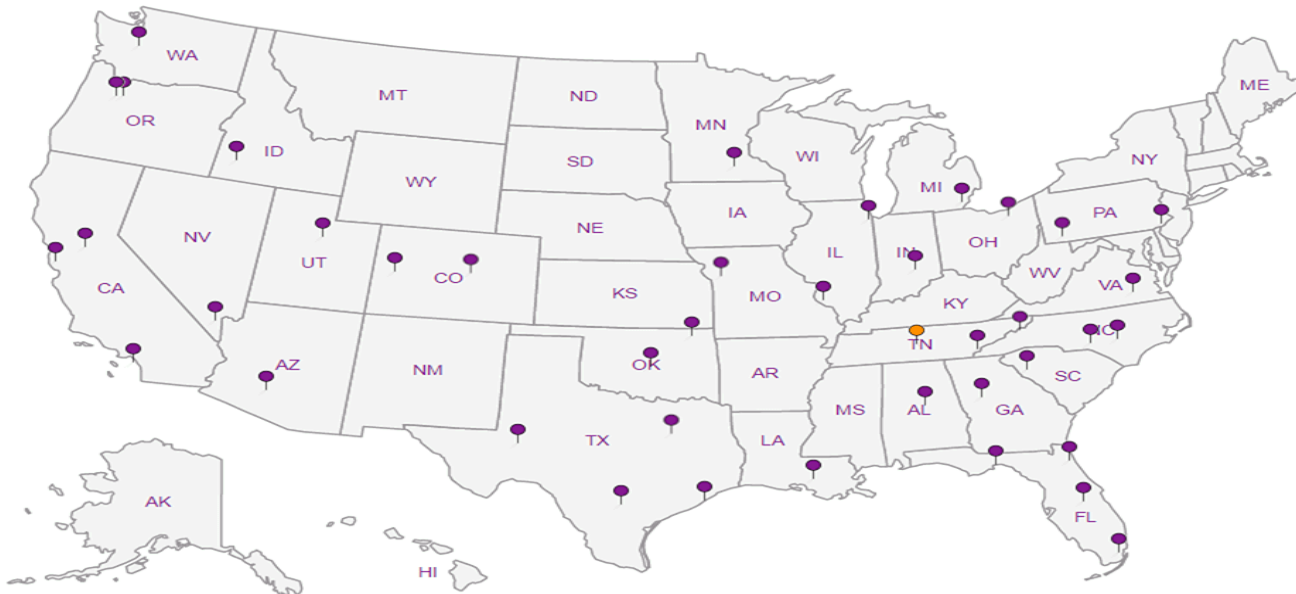
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

PES-Seattle

Billing Information:
PES-Seattle

Analysis / Container / Preservative

Chain of Custody Page ___ of ___



Report to:
Bill Haldeman/Brian O'neal

Email To:
on file

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



Project Description: *American Linsen*

City/State: *Seattle, WA*
Collected:

Phone: *on file*
Fax:

Client Project #
1413.001.02.501 E

Lab Project #
PESENVSWA-ALP

Collected by (print):
BLH/HRC

Site/Facility ID #
American Linsen

P.O. #

Collected by (signature):
[Signature]

Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Quote #
Date Results Needed

Immediately Packed on Ice N Y

Pres Chk

****NO3,S04,Chloride**48 hour hold**

NWTPHGX	VOCs (V8260LLC)	Total Fe Mn 6020	TOC	Alkalinity	EEM (RSK175LL)
---------	-----------------	------------------	-----	------------	----------------

L # *1152823*
F190
Acctnum: PESENVSWA
Template:
Prelogin:
TSR: Brian Ford
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	NO3	S04	Chloride	TOC	Alkalinity	EEM	Remarks	Sample # (lab only)
MW-918-102219	Grab	GW	35	10-22-19	0930	12	X	X	X	X	X	X		-01
MW116-102219		GW	40		1005	9	X	X	X	X	X	X		02
MW113-102219		GW	75		1045	9	X	X	X	X	X	X		03
MW115-102219		GW	40		1105	12	X	X	X	X	X	X	No Cu	04
BB8-102219		GW	35		1250	12	X	X	X	X	X	X		05
MW105-102219		GW	135		1300	12	X	X	X	X	X	X		06
MW-919-102219		GW	135		1400	12	X	X	X	X	X	X		07
EQ-102219		GW	-		1500	12	X	X	X	X	X	X		08
TRIP-102219		GW	-		1530	1	X	X	X	X	X	X		09

* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:
 pH _____ Temp _____
 Flow _____ Other _____
 Samples returned via:
 UPS FedEx Courier _____
 Tracking # *1203 5774 6529*

Sample Receipt Checklist
 COC Seal Present/Intact: Y N
 COC Signed/Accurate: Y N
 Bottles arrive intact: Y N
 Correct bottles used: Y N
 Sufficient volume sent: Y N
 If Applicable
 VOA Zero Headspace: Y N
 Preservation Correct/Checked: Y N

Relinquished by: (Signature)
[Signature]

Date: *10-22-19*
Time: *1600*

Received by: (Signature)
[Signature]

Trip Blank Received: Yes No
 HCL MeOH
 TBR

RAD SCREEN <0.5 mR/hr
If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date: _____ Time: _____

Received by: (Signature)

Temp: *2.8/1-2.9* °C
Bottles Received: *82*

Hold: _____ Condition: *NCF / OK*

Relinquished by: (Signature)

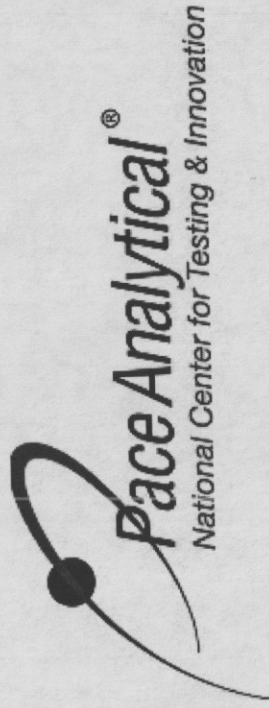
Date: _____ Time: _____

Received for lab by: (Signature)
[Signature]

Date: *10/23/19* Time: *8:45*

Hold: _____ Condition: *NCF / OK*

Matt Shacklock



Login #: L1152823	Client: PESEBVSWA	Date: 10/23	Evaluated by: Kelsey S
-------------------	-------------------	-------------	------------------------

Non-Conformance (check applicable items)

Sample Integrity	Chain of Custody Clarification	If Broken Container:
Parameter(s) past holding time	x Login Clarification Needed	Insufficient packing material around container
Temperature not in range	Chain of custody is incomplete	Insufficient packing material inside cooler
Improper container type	Please specify Metals requested.	Improper handling by carrier (FedEx / UPS / Courier)
pH not in range.	Please specify TCLP requested.	Sample was frozen
Insufficient sample volume.	Received additional samples not listed on coc.	Container lid not intact
Sample is biphasic.	Sample ids on containers do not match ids on coc	If no Chain of Custody:
Vials received with headspace.	Trip Blank not received.	Received by:
Broken container	Client did not "X" analysis.	Date/Time:
Broken container:	Chain of Custody is missing	Temp./Cont. Rec./pH:
Sufficient sample remains		Carrier:
		Tracking#

Login Comments: All 5 vials for MW-116-102219 received empty.

Client informed by:	Call	Email x	Voice Mail	Date: 10/23/19	Time: 1200
TSR Initials: bjf	Client Contact: PMS				

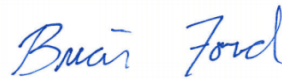
Login Instructions:

For **MW-116-102219**, proceed with all analyses marked on the COC except VOCs by 8260.

PES Environmental, Inc.- WA

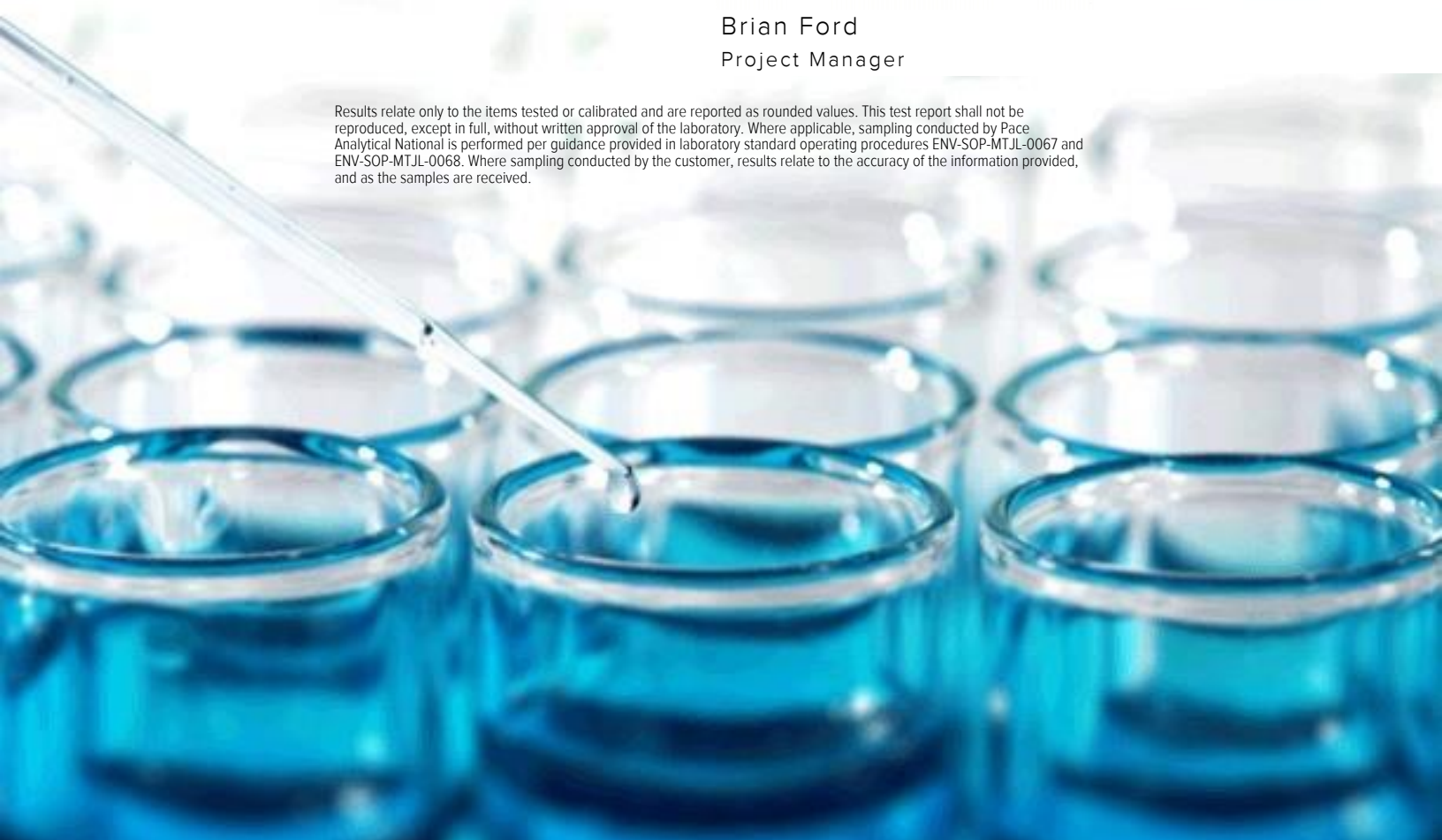
Sample Delivery Group: L1155658
Samples Received: 10/31/2019
Project Number: 1413.001.02.501E
Description:
Site: 1413.001.02.501E
Report To: Brian O'Neal/Bill Haldeman
1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





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Cn: Case Narrative	4	
Sr: Sample Results	5	3 Ss
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Wet Chemistry by Method 9056A	12	6 Qc
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SAMPLE SUMMARY



FMW-141-103019 L1155658-01 GW

Collected by
Chris DeBoer

Collected date/time
10/30/19 12:35

Received date/time
10/31/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1376309	1	11/06/19 19:55	11/06/19 19:55	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1372794	1	10/31/19 21:01	10/31/19 21:01	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1373549	1	11/01/19 15:54	11/01/19 15:54	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1374098	1	11/03/19 02:25	11/03/19 02:25	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1373700	10	11/05/19 13:47	11/05/19 17:46	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1373387	1	11/01/19 14:20	11/01/19 14:20	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1375825	1	11/06/19 21:11	11/06/19 21:11	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1377124	100	11/08/19 13:11	11/08/19 13:11	JAH	Mt. Juliet, TN

1
Cp

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Tc

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Ss

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Cn

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Sr

MW-920-103019 L1155658-02 GW

Collected by
Chris DeBoer

Collected date/time
10/30/19 13:15

Received date/time
10/31/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1376309	1	11/06/19 22:34	11/06/19 22:34	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1372794	1	10/31/19 21:36	10/31/19 21:36	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1373549	1	11/01/19 16:20	11/01/19 16:20	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1374098	1	11/03/19 02:41	11/03/19 02:41	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1373700	10	11/05/19 13:47	11/05/19 17:50	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1373387	1	11/01/19 14:25	11/01/19 14:25	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1375825	1	11/06/19 21:31	11/06/19 21:31	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1377124	100	11/08/19 13:31	11/08/19 13:31	JAH	Mt. Juliet, TN

6
Qc

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Gl

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Al

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Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	596000		2710	20000	1	11/06/2019 19:55	WG1376309

Sample Narrative:

L1155658-01 WG1376309: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	66900		51.9	1000	1	10/31/2019 21:01	WG1372794
Nitrate	U		22.7	100	1	10/31/2019 21:01	WG1372794
Sulfate	909	J	77.4	5000	1	11/01/2019 15:54	WG1373549

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	21200		102	1000	1	11/03/2019 02:25	WG1374098

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	8880		150	1000	10	11/05/2019 17:46	WG1373700
Manganese	1740		2.50	50.0	10	11/05/2019 17:46	WG1373700

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	6040		0.287	0.678	1	11/01/2019 14:20	WG1373387
Ethane	113		0.296	1.29	1	11/01/2019 14:20	WG1373387
Ethene	460		0.422	1.27	1	11/01/2019 14:20	WG1373387

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U		105	2500	100	11/08/2019 13:11	WG1377124
Acrylonitrile	U		0.873	5.00	1	11/06/2019 21:11	WG1375825
Benzene	0.230	J	0.0896	0.500	1	11/06/2019 21:11	WG1375825
Bromobenzene	U		0.133	0.500	1	11/06/2019 21:11	WG1375825
Bromodichloromethane	U		0.0800	0.500	1	11/06/2019 21:11	WG1375825
Bromochloromethane	U		0.145	0.500	1	11/06/2019 21:11	WG1375825
Bromoform	U		0.186	0.500	1	11/06/2019 21:11	WG1375825
Bromomethane	U	JO	0.157	2.50	1	11/06/2019 21:11	WG1375825
n-Butylbenzene	U		0.143	0.500	1	11/06/2019 21:11	WG1375825
sec-Butylbenzene	U		0.134	0.500	1	11/06/2019 21:11	WG1375825
tert-Butylbenzene	U		0.183	0.500	1	11/06/2019 21:11	WG1375825
Carbon disulfide	U		0.101	0.500	1	11/06/2019 21:11	WG1375825
Carbon tetrachloride	U		0.159	0.500	1	11/06/2019 21:11	WG1375825
Chlorobenzene	U		0.140	0.500	1	11/06/2019 21:11	WG1375825
Chlorodibromomethane	U		0.128	0.500	1	11/06/2019 21:11	WG1375825
Chloroethane	U		0.141	2.50	1	11/06/2019 21:11	WG1375825
Chloroform	U		0.0860	0.500	1	11/06/2019 21:11	WG1375825
Chloromethane	U	JO	0.153	1.25	1	11/06/2019 21:11	WG1375825
2-Chlorotoluene	U		0.111	0.500	1	11/06/2019 21:11	WG1375825
4-Chlorotoluene	U		0.0972	0.500	1	11/06/2019 21:11	WG1375825

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/06/2019 21:11	WG1375825
1,2-Dibromoethane	U		0.193	0.500	1	11/06/2019 21:11	WG1375825
Dibromomethane	U		0.117	0.500	1	11/06/2019 21:11	WG1375825
1,2-Dichlorobenzene	U		0.101	0.500	1	11/06/2019 21:11	WG1375825
1,3-Dichlorobenzene	U		0.130	0.500	1	11/06/2019 21:11	WG1375825
1,4-Dichlorobenzene	U		0.121	0.500	1	11/06/2019 21:11	WG1375825
Dichlorodifluoromethane	U		0.127	2.50	1	11/06/2019 21:11	WG1375825
1,1-Dichloroethane	U		0.114	0.500	1	11/06/2019 21:11	WG1375825
1,2-Dichloroethane	U		0.108	0.500	1	11/06/2019 21:11	WG1375825
1,1-Dichloroethene	2.51		0.188	0.500	1	11/06/2019 21:11	WG1375825
cis-1,2-Dichloroethene	1200		9.33	50.0	100	11/08/2019 13:11	WG1377124
trans-1,2-Dichloroethene	7.13		0.152	0.500	1	11/06/2019 21:11	WG1375825
1,2-Dichloropropane	U		0.190	0.500	1	11/06/2019 21:11	WG1375825
1,1-Dichloropropene	U		0.128	0.500	1	11/06/2019 21:11	WG1375825
1,3-Dichloropropane	U		0.147	1.00	1	11/06/2019 21:11	WG1375825
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/06/2019 21:11	WG1375825
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/06/2019 21:11	WG1375825
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	11/06/2019 21:11	WG1375825
2,2-Dichloropropane	U		0.0929	0.500	1	11/06/2019 21:11	WG1375825
Di-isopropyl ether	U		0.0924	0.500	1	11/06/2019 21:11	WG1375825
Ethylbenzene	U		0.158	0.500	1	11/06/2019 21:11	WG1375825
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/06/2019 21:11	WG1375825
2-Hexanone	U		0.757	5.00	1	11/06/2019 21:11	WG1375825
n-Hexane	U		0.305	5.00	1	11/06/2019 21:11	WG1375825
Iodomethane	U	JO	0.377	10.0	1	11/06/2019 21:11	WG1375825
Isopropylbenzene	U		0.126	0.500	1	11/06/2019 21:11	WG1375825
p-Isopropyltoluene	U		0.138	0.500	1	11/06/2019 21:11	WG1375825
2-Butanone (MEK)	U		1.28	5.00	1	11/06/2019 21:11	WG1375825
Methylene Chloride	U		1.07	2.50	1	11/06/2019 21:11	WG1375825
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/06/2019 21:11	WG1375825
Methyl tert-butyl ether	U		0.102	0.500	1	11/06/2019 21:11	WG1375825
Naphthalene	U		0.174	2.50	1	11/06/2019 21:11	WG1375825
n-Propylbenzene	U		0.162	0.500	1	11/06/2019 21:11	WG1375825
Styrene	U		0.117	0.500	1	11/06/2019 21:11	WG1375825
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/06/2019 21:11	WG1375825
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/06/2019 21:11	WG1375825
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/06/2019 21:11	WG1375825
Tetrachloroethene	U		0.199	0.500	1	11/06/2019 21:11	WG1375825
Toluene	U		0.412	0.500	1	11/06/2019 21:11	WG1375825
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/06/2019 21:11	WG1375825
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/06/2019 21:11	WG1375825
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/06/2019 21:11	WG1375825
1,1,2-Trichloroethane	U		0.186	0.500	1	11/06/2019 21:11	WG1375825
Trichloroethene	2.18		0.153	0.500	1	11/06/2019 21:11	WG1375825
Trichlorofluoromethane	U		0.130	2.50	1	11/06/2019 21:11	WG1375825
1,2,3-Trichloropropane	U		0.247	2.50	1	11/06/2019 21:11	WG1375825
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/06/2019 21:11	WG1375825
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/06/2019 21:11	WG1375825
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/06/2019 21:11	WG1375825
Vinyl acetate	U		0.645	5.00	1	11/06/2019 21:11	WG1375825
Vinyl chloride	1760		11.8	50.0	100	11/08/2019 13:11	WG1377124
Xylenes, Total	U		0.316	1.50	1	11/06/2019 21:11	WG1375825
(S) Toluene-d8	93.8			80.0-120		11/06/2019 21:11	WG1375825
(S) Toluene-d8	93.8			80.0-120		11/08/2019 13:11	WG1377124
(S) 4-Bromofluorobenzene	92.4			77.0-126		11/06/2019 21:11	WG1375825
(S) 4-Bromofluorobenzene	104			77.0-126		11/08/2019 13:11	WG1377124

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	89.9			70.0-130		11/06/2019 21:11	WG1375825
(S) 1,2-Dichloroethane-d4	106			70.0-130		11/08/2019 13:11	WG1377124

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	466000		2710	20000	1	11/06/2019 22:34	WG1376309

Sample Narrative:

L1155658-02 WG1376309: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	44500		51.9	1000	1	10/31/2019 21:36	WG1372794
Nitrate	U		22.7	100	1	10/31/2019 21:36	WG1372794
Sulfate	4730	J	77.4	5000	1	11/01/2019 16:20	WG1373549

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	18800		102	1000	1	11/03/2019 02:41	WG1374098

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	8380		150	1000	10	11/05/2019 17:50	WG1373700
Manganese	1520		2.50	50.0	10	11/05/2019 17:50	WG1373700

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	5710		0.287	0.678	1	11/01/2019 14:25	WG1373387
Ethane	84.9		0.296	1.29	1	11/01/2019 14:25	WG1373387
Ethene	305		0.422	1.27	1	11/01/2019 14:25	WG1373387

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U		105	2500	100	11/08/2019 13:31	WG1377124
Acrylonitrile	U		0.873	5.00	1	11/06/2019 21:31	WG1375825
Benzene	0.212	J	0.0896	0.500	1	11/06/2019 21:31	WG1375825
Bromobenzene	U		0.133	0.500	1	11/06/2019 21:31	WG1375825
Bromodichloromethane	U		0.0800	0.500	1	11/06/2019 21:31	WG1375825
Bromochloromethane	U		0.145	0.500	1	11/06/2019 21:31	WG1375825
Bromoform	U		0.186	0.500	1	11/06/2019 21:31	WG1375825
Bromomethane	U	JO	0.157	2.50	1	11/06/2019 21:31	WG1375825
n-Butylbenzene	U		0.143	0.500	1	11/06/2019 21:31	WG1375825
sec-Butylbenzene	U		0.134	0.500	1	11/06/2019 21:31	WG1375825
tert-Butylbenzene	U		0.183	0.500	1	11/06/2019 21:31	WG1375825
Carbon disulfide	U		0.101	0.500	1	11/06/2019 21:31	WG1375825
Carbon tetrachloride	U		0.159	0.500	1	11/06/2019 21:31	WG1375825
Chlorobenzene	U		0.140	0.500	1	11/06/2019 21:31	WG1375825
Chlorodibromomethane	U		0.128	0.500	1	11/06/2019 21:31	WG1375825
Chloroethane	U		0.141	2.50	1	11/06/2019 21:31	WG1375825
Chloroform	U		0.0860	0.500	1	11/06/2019 21:31	WG1375825
Chloromethane	U	JO	0.153	1.25	1	11/06/2019 21:31	WG1375825
2-Chlorotoluene	U		0.111	0.500	1	11/06/2019 21:31	WG1375825
4-Chlorotoluene	U		0.0972	0.500	1	11/06/2019 21:31	WG1375825

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/06/2019 21:31	WG1375825
1,2-Dibromoethane	U		0.193	0.500	1	11/06/2019 21:31	WG1375825
Dibromomethane	U		0.117	0.500	1	11/06/2019 21:31	WG1375825
1,2-Dichlorobenzene	U		0.101	0.500	1	11/06/2019 21:31	WG1375825
1,3-Dichlorobenzene	U		0.130	0.500	1	11/06/2019 21:31	WG1375825
1,4-Dichlorobenzene	U		0.121	0.500	1	11/06/2019 21:31	WG1375825
Dichlorodifluoromethane	U		0.127	2.50	1	11/06/2019 21:31	WG1375825
1,1-Dichloroethane	U		0.114	0.500	1	11/06/2019 21:31	WG1375825
1,2-Dichloroethane	U		0.108	0.500	1	11/06/2019 21:31	WG1375825
1,1-Dichloroethene	4.63		0.188	0.500	1	11/06/2019 21:31	WG1375825
cis-1,2-Dichloroethene	2250		9.33	50.0	100	11/08/2019 13:31	WG1377124
trans-1,2-Dichloroethene	10.5		0.152	0.500	1	11/06/2019 21:31	WG1375825
1,2-Dichloropropane	U		0.190	0.500	1	11/06/2019 21:31	WG1375825
1,1-Dichloropropene	U		0.128	0.500	1	11/06/2019 21:31	WG1375825
1,3-Dichloropropane	U		0.147	1.00	1	11/06/2019 21:31	WG1375825
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/06/2019 21:31	WG1375825
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/06/2019 21:31	WG1375825
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	11/06/2019 21:31	WG1375825
2,2-Dichloropropane	U		0.0929	0.500	1	11/06/2019 21:31	WG1375825
Di-isopropyl ether	U		0.0924	0.500	1	11/06/2019 21:31	WG1375825
Ethylbenzene	U		0.158	0.500	1	11/06/2019 21:31	WG1375825
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/06/2019 21:31	WG1375825
2-Hexanone	U		0.757	5.00	1	11/06/2019 21:31	WG1375825
n-Hexane	U		0.305	5.00	1	11/06/2019 21:31	WG1375825
Iodomethane	U	JO	0.377	10.0	1	11/06/2019 21:31	WG1375825
Isopropylbenzene	U		0.126	0.500	1	11/06/2019 21:31	WG1375825
p-Isopropyltoluene	U		0.138	0.500	1	11/06/2019 21:31	WG1375825
2-Butanone (MEK)	U		1.28	5.00	1	11/06/2019 21:31	WG1375825
Methylene Chloride	U		1.07	2.50	1	11/06/2019 21:31	WG1375825
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/06/2019 21:31	WG1375825
Methyl tert-butyl ether	U		0.102	0.500	1	11/06/2019 21:31	WG1375825
Naphthalene	U		0.174	2.50	1	11/06/2019 21:31	WG1375825
n-Propylbenzene	U		0.162	0.500	1	11/06/2019 21:31	WG1375825
Styrene	U		0.117	0.500	1	11/06/2019 21:31	WG1375825
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/06/2019 21:31	WG1375825
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/06/2019 21:31	WG1375825
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/06/2019 21:31	WG1375825
Tetrachloroethene	U		0.199	0.500	1	11/06/2019 21:31	WG1375825
Toluene	U		0.412	0.500	1	11/06/2019 21:31	WG1375825
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/06/2019 21:31	WG1375825
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/06/2019 21:31	WG1375825
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/06/2019 21:31	WG1375825
1,1,2-Trichloroethane	U		0.186	0.500	1	11/06/2019 21:31	WG1375825
Trichloroethene	12.7		0.153	0.500	1	11/06/2019 21:31	WG1375825
Trichlorofluoromethane	U		0.130	2.50	1	11/06/2019 21:31	WG1375825
1,2,3-Trichloropropane	U		0.247	2.50	1	11/06/2019 21:31	WG1375825
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/06/2019 21:31	WG1375825
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/06/2019 21:31	WG1375825
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/06/2019 21:31	WG1375825
Vinyl acetate	U		0.645	5.00	1	11/06/2019 21:31	WG1375825
Vinyl chloride	1710		11.8	50.0	100	11/08/2019 13:31	WG1377124
Xylenes, Total	U		0.316	1.50	1	11/06/2019 21:31	WG1375825
(S) Toluene-d8	93.5			80.0-120		11/06/2019 21:31	WG1375825
(S) Toluene-d8	102			80.0-120		11/08/2019 13:31	WG1377124
(S) 4-Bromofluorobenzene	94.2			77.0-126		11/06/2019 21:31	WG1375825
(S) 4-Bromofluorobenzene	104			77.0-126		11/08/2019 13:31	WG1377124

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	94.1			70.0-130		11/06/2019 21:31	WG1375825
(S) 1,2-Dichloroethane-d4	110			70.0-130		11/08/2019 13:31	WG1377124

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3469251-1 11/06/19 19:25

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	3080	↓	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1153228-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1153228-01 11/06/19 19:31 • (DUP) R3469251-2 11/06/19 19:39

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	87100	87200	1	0.0923		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace
DUP: Endpoint pH 4.5

L1155903-16 Original Sample (OS) • Duplicate (DUP)

(OS) L1155903-16 11/06/19 22:20 • (DUP) R3469251-4 11/06/19 22:27

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	432000	431000	1	0.123		20

Sample Narrative:

OS: Endpoint pH 4.5
DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3469251-3 11/06/19 20:43

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	100000	100	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3467343-1 10/31/19 08:59

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	53.1	↓	51.9	1000
Nitrate	U		22.7	100

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1155658-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1155658-01 10/31/19 21:01 • (DUP) R3467343-6 10/31/19 21:18

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	66900	66700	1	0.278		15
Nitrate	U	0.000	1	0.000		15

L1154639-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1154639-02 10/31/19 22:11 • (DUP) R3467343-8 10/31/19 22:29

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	125000	125000	5	0.0892		15
Nitrate	22100	22000	5	0.504		15

Laboratory Control Sample (LCS)

(LCS) R3467343-2 10/31/19 09:16

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Chloride	40000	39200	98.0	80.0-120	
Nitrate	8000	8160	102	80.0-120	

L1155572-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1155572-01 10/31/19 13:58 • (MS) R3467343-4 10/31/19 14:15 • (MSD) R3467343-5 10/31/19 14:33

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Chloride	50000	ND	50200	50700	99.8	101	1	80.0-120			1.12	15
Nitrate	5000	1650	6730	6770	102	102	1	80.0-120			0.554	15



L1155658-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1155658-02 10/31/19 21:36 • (MS) R3467343-7 10/31/19 21:53

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Chloride	50000	44500	92500	95.9	1	80.0-120	
Nitrate	5000	U	4990	99.8	1	80.0-120	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3467688-1 11/01/19 10:58

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Sulfate	90.9	↓	77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1155658-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1155658-01 11/01/19 15:54 • (DUP) R3467688-3 11/01/19 16:07

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	909	872	1	4.21	↓	15

L1156202-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1156202-03 11/01/19 20:03 • (DUP) R3467688-6 11/01/19 20:42

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	ND	100	1	1.88	↓	15

Laboratory Control Sample (LCS)

(LCS) R3467688-2 11/01/19 11:11

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Sulfate	40000	40000	100	80.0-120	

L1155905-05 Original Sample (OS) • Matrix Spike (MS)

(OS) L1155905-05 11/01/19 17:13 • (MS) R3467688-4 11/01/19 17:26

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Sulfate	50000	2710	53200	101	1	80.0-120	

L1155905-05 Original Sample (OS) • Matrix Spike (MS)

(OS) L1155905-05 11/01/19 17:13 • (MS) R3467688-5 11/01/19 18:05

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Sulfate	50000	2710	51900	98.3	1	80.0-120	



L1156212-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1156212-01 11/01/19 20:55 • (MS) R3467688-7 11/01/19 21:08

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Sulfate	50000	53200	101000	95.4	1	80.0-120	E

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3468492-1 11/02/19 22:57

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	387	↓	102	1000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1155639-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1155639-02 11/03/19 00:50 • (DUP) R3468492-3 11/03/19 01:03

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC	508	480	1	5.69	↓	20

L1155683-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1155683-01 11/03/19 03:10 • (DUP) R3468492-6 11/03/19 03:24

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC	1260	1210	1	4.46		20

Laboratory Control Sample (LCS)

(LCS) R3468492-2 11/02/19 23:27

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC	75000	72300	96.4	85.0-115	

L1155644-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1155644-02 11/03/19 01:35 • (MS) R3468492-4 11/03/19 01:53 • (MSD) R3468492-5 11/03/19 02:09

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC	50000	2330	50000	50500	95.3	96.4	1	80.0-120			1.09	20

L1155761-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1155761-10 11/03/19 05:37 • (MS) R3468492-7 11/03/19 05:56 • (MSD) R3468492-8 11/03/19 06:12

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC	50000	349	47400	48800	94.2	96.9	1	80.0-120			2.85	20



Method Blank (MB)

(MB) R3468712-1 11/05/19 15:58

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Iron	U		15.0	100
Manganese	0.609	J	0.250	5.00

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3468712-2 11/05/19 16:02 • (LCSD) R3468712-3 11/05/19 16:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Iron	5000	4750	4890	95.1	97.8	80.0-120			2.84	20
Manganese	50.0	47.3	49.1	94.7	98.3	80.0-120			3.73	20

5 Sr

6 Qc

L1155830-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1155830-07 11/05/19 16:09 • (MS) R3468712-5 11/05/19 16:17 • (MSD) R3468712-6 11/05/19 16:21

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Iron	5000	41.1	4900	4850	97.2	96.2	1	75.0-125			1.07	20
Manganese	50.0	20.3	69.5	68.6	98.4	96.7	1	75.0-125			1.26	20

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3467529-1 11/01/19 14:17

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

L1155658-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1155658-01 11/01/19 14:20 • (DUP) R3467529-2 11/01/19 14:33

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	6040	6040	1	0.000		20
Ethane	113	113	1	0.000		20
Ethene	460	458	1	0.436		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3467529-3 11/01/19 14:36 • (LCSD) R3467529-4 11/01/19 14:40

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	71.0	72.6	105	107	85.0-115			2.23	20
Ethane	129	126	127	97.7	98.4	85.0-115			0.791	20
Ethene	127	132	133	104	105	85.0-115			0.755	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3469663-2 11/06/19 15:28

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3469663-2 11/06/19 15:28

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,2,4-Trimethylbenzene	U		0.123	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	92.3			80.0-120
(S) 4-Bromofluorobenzene	92.6			77.0-126
(S) 1,2-Dichloroethane-d4	88.6			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3469663-1 11/06/19 14:07

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Acrylonitrile	25.0	23.6	94.4	55.0-149	
Benzene	5.00	4.64	92.8	70.0-123	
Bromobenzene	5.00	4.50	90.0	73.0-121	
Bromodichloromethane	5.00	4.58	91.6	75.0-120	
Bromochloromethane	5.00	5.14	103	76.0-122	
Bromoform	5.00	4.45	89.0	68.0-132	
Bromomethane	5.00	2.43	48.6	10.0-160	
n-Butylbenzene	5.00	4.78	95.6	73.0-125	
sec-Butylbenzene	5.00	4.84	96.8	75.0-125	
tert-Butylbenzene	5.00	4.73	94.6	76.0-124	
Carbon disulfide	5.00	5.07	101	61.0-128	
Carbon tetrachloride	5.00	4.81	96.2	68.0-126	
Chlorobenzene	5.00	4.72	94.4	80.0-121	
Chlorodibromomethane	5.00	4.48	89.6	77.0-125	
Chloroethane	5.00	5.30	106	47.0-150	
Chloroform	5.00	4.62	92.4	73.0-120	
Chloromethane	5.00	3.76	75.2	41.0-142	
2-Chlorotoluene	5.00	4.61	92.2	76.0-123	
4-Chlorotoluene	5.00	4.48	89.6	75.0-122	
1,2-Dibromo-3-Chloropropane	5.00	5.30	106	58.0-134	
1,2-Dibromoethane	5.00	4.85	97.0	80.0-122	
Dibromomethane	5.00	4.61	92.2	80.0-120	
1,2-Dichlorobenzene	5.00	4.64	92.8	79.0-121	
1,3-Dichlorobenzene	5.00	4.55	91.0	79.0-120	
1,4-Dichlorobenzene	5.00	4.56	91.2	79.0-120	
trans-1,4-Dichloro-2-butene	5.00	3.83	76.6	33.0-144	
Dichlorodifluoromethane	5.00	6.75	135	51.0-149	
1,1-Dichloroethane	5.00	4.70	94.0	70.0-126	
1,2-Dichloroethane	5.00	4.57	91.4	70.0-128	
1,1-Dichloroethene	5.00	5.16	103	71.0-124	
trans-1,2-Dichloroethene	5.00	4.74	94.8	73.0-120	
1,2-Dichloropropane	5.00	4.55	91.0	77.0-125	
1,1-Dichloropropene	5.00	4.81	96.2	74.0-126	
1,3-Dichloropropane	5.00	4.67	93.4	80.0-120	
cis-1,3-Dichloropropene	5.00	4.37	87.4	80.0-123	
trans-1,3-Dichloropropene	5.00	4.59	91.8	78.0-124	
2,2-Dichloropropane	5.00	4.99	99.8	58.0-130	
Di-isopropyl ether	5.00	4.43	88.6	58.0-138	
Ethylbenzene	5.00	4.77	95.4	79.0-123	
Hexachloro-1,3-butadiene	5.00	5.05	101	54.0-138	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3469663-1 11/06/19 14:07

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
2-Hexanone	25.0	24.0	96.0	67.0-149	
n-Hexane	5.00	4.91	98.2	57.0-133	
Iodomethane	25.0	18.9	75.6	33.0-147	
Isopropylbenzene	5.00	4.72	94.4	76.0-127	
p-Isopropyltoluene	5.00	4.82	96.4	76.0-125	
2-Butanone (MEK)	25.0	25.3	101	44.0-160	
Methylene Chloride	5.00	5.06	101	67.0-120	
4-Methyl-2-pentanone (MIBK)	25.0	22.4	89.6	68.0-142	
Methyl tert-butyl ether	5.00	4.71	94.2	68.0-125	
Naphthalene	5.00	4.92	98.4	54.0-135	
n-Propylbenzene	5.00	4.70	94.0	77.0-124	
Styrene	5.00	4.71	94.2	73.0-130	
1,1,1,2-Tetrachloroethane	5.00	4.49	89.8	75.0-125	
1,1,2,2-Tetrachloroethane	5.00	4.46	89.2	65.0-130	
Tetrachloroethene	5.00	4.86	97.2	72.0-132	
Toluene	5.00	4.48	89.6	79.0-120	
1,1,2-Trichlorotrifluoroethane	5.00	5.71	114	69.0-132	
1,2,3-Trichlorobenzene	5.00	4.82	96.4	50.0-138	
1,2,4-Trichlorobenzene	5.00	4.56	91.2	57.0-137	
1,1,1-Trichloroethane	5.00	5.24	105	73.0-124	
1,1,2-Trichloroethane	5.00	4.66	93.2	80.0-120	
Trichloroethene	5.00	5.02	100	78.0-124	
Trichlorofluoromethane	5.00	5.20	104	59.0-147	
1,2,3-Trichloropropane	5.00	4.68	93.6	73.0-130	
1,2,3-Trimethylbenzene	5.00	4.51	90.2	77.0-120	
1,2,4-Trimethylbenzene	5.00	4.64	92.8	76.0-121	
1,3,5-Trimethylbenzene	5.00	4.71	94.2	76.0-122	
Vinyl acetate	25.0	21.6	86.4	11.0-160	
Xylenes, Total	15.0	13.7	91.3	79.0-123	
(S) Toluene-d8			93.4	80.0-120	
(S) 4-Bromofluorobenzene			93.8	77.0-126	
(S) 1,2-Dichloroethane-d4			93.0	70.0-130	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



L1156286-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1156286-05 11/06/19 18:15 • (MS) R3469663-3 11/06/19 22:30 • (MSD) R3469663-4 11/06/19 22:50

Analyte	Spike Amount ug/l	Original Result	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Bromochloromethane	5.00		5.31	3.92	106	78.4	1	38.0-142		J3	30.1	26
Carbon disulfide	5.00		5.37	3.94	107	78.8	1	10.0-156		J3	30.7	28
Acrylonitrile	25.0		23.4	17.3	93.6	69.2	1	21.0-160			30.0	32
Benzene	5.00		4.80	3.54	96.0	70.8	1	17.0-158		J3	30.2	27
Bromobenzene	5.00		4.70	3.52	94.0	70.4	1	30.0-149		J3	28.7	28
Bromodichloromethane	5.00		4.75	3.48	95.0	69.6	1	31.0-150		J3	30.9	27
Bromoform	5.00		4.30	3.20	86.0	64.0	1	29.0-150		J3	29.3	29
Bromomethane	5.00		4.31	2.73	86.2	54.6	1	10.0-160		J3	44.9	38
n-Butylbenzene	5.00		4.92	3.60	98.4	72.0	1	31.0-150		J3	31.0	30
sec-Butylbenzene	5.00		4.98	3.68	99.6	73.6	1	33.0-155		J3	30.0	29
tert-Butylbenzene	5.00		4.94	3.59	98.8	71.8	1	34.0-153		J3	31.7	28
Carbon tetrachloride	5.00		5.50	3.94	110	78.8	1	23.0-159		J3	33.1	28
Chlorobenzene	5.00		4.86	3.63	97.2	72.6	1	33.0-152		J3	29.0	27
Chlorodibromomethane	5.00		4.45	3.33	89.0	66.6	1	37.0-149		J3	28.8	27
Chloroethane	5.00		5.47	4.24	109	84.8	1	10.0-160			25.3	30
Chloroform	5.00		5.02	3.72	100	74.4	1	29.0-154		J3	29.7	28
Chloromethane	5.00		4.28	3.22	85.6	64.4	1	10.0-160			28.3	29
trans-1,4-Dichloro-2-butene	5.00		3.52	2.63	70.4	52.6	1	10.0-157			28.9	37
2-Chlorotoluene	5.00		4.65	3.69	93.0	73.8	1	32.0-153			23.0	28
4-Chlorotoluene	5.00		4.58	3.51	91.6	70.2	1	32.0-150			26.5	28
1,2-Dibromo-3-Chloropropane	5.00		4.85	3.80	97.0	76.0	1	22.0-151			24.3	34
1,2-Dibromoethane	5.00		4.91	3.49	98.2	69.8	1	34.0-147		J3	33.8	27
2-Hexanone	25.0		23.2	16.1	92.8	64.4	1	21.0-160		J3	36.1	29
Dibromomethane	5.00		4.87	3.62	97.4	72.4	1	30.0-151		J3	29.4	27
1,2-Dichlorobenzene	5.00		4.63	3.70	92.6	74.0	1	34.0-149			22.3	28
n-Hexane	5.00		5.15	3.68	103	73.6	1	10.0-153		J3	33.3	28
1,3-Dichlorobenzene	5.00		4.50	3.32	90.0	66.4	1	36.0-146		J3	30.2	27
Iodomethane	25.0		14.6	14.1	58.4	56.4	1	10.0-160			3.48	40
1,4-Dichlorobenzene	5.00		4.58	3.52	91.6	70.4	1	35.0-142			26.2	27
Dichlorodifluoromethane	5.00		7.20	5.78	144	116	1	10.0-160			21.9	29
1,1-Dichloroethane	5.00		4.85	3.58	97.0	71.6	1	25.0-158		J3	30.1	27
1,2-Dichloroethane	5.00	U	4.78	3.57	95.6	71.4	1	29.0-151		J3	29.0	27
1,1-Dichloroethene	5.00		5.64	4.19	113	83.8	1	11.0-160		J3	29.5	29
trans-1,2-Dichloroethene	5.00	U	5.10	3.69	102	73.8	1	17.0-153		J3	32.1	27
1,2-Dichloropropane	5.00		4.67	3.48	93.4	69.6	1	30.0-156		J3	29.2	27
1,1-Dichloropropene	5.00		5.29	3.81	106	76.2	1	25.0-158		J3	32.5	27
1,3-Dichloropropane	5.00		4.82	3.51	96.4	70.2	1	38.0-147		J3	31.5	27
cis-1,3-Dichloropropene	5.00		4.60	3.31	92.0	66.2	1	34.0-149		J3	32.6	28
trans-1,3-Dichloropropene	5.00		4.41	3.20	88.2	64.0	1	32.0-149		J3	31.8	28
2,2-Dichloropropane	5.00		5.39	3.95	108	79.0	1	24.0-152		J3	30.8	29

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



L1156286-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1156286-05 11/06/19 18:15 • (MS) R3469663-3 11/06/19 22:30 • (MSD) R3469663-4 11/06/19 22:50

Analyte	Spike Amount ug/l	Original Result	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Di-isopropyl ether	5.00		4.62	3.44	92.4	68.8	1	21.0-160		J3	29.3	28
Ethylbenzene	5.00		4.80	3.64	96.0	72.8	1	30.0-155		J3	27.5	27
Hexachloro-1,3-butadiene	5.00		5.38	3.74	108	74.8	1	20.0-154		J3	36.0	34
Isopropylbenzene	5.00		4.94	3.63	98.8	72.6	1	28.0-157		J3	30.6	27
Vinyl acetate	25.0		22.9	16.7	91.6	66.8	1	12.0-160		J3	31.3	31
p-Isopropyltoluene	5.00		4.95	3.64	99.0	72.8	1	30.0-154		J3	30.5	29
2-Butanone (MEK)	25.0		24.7	18.4	98.8	73.6	1	10.0-160			29.2	32
Methylene Chloride	5.00		4.85	3.62	97.0	72.4	1	23.0-144		J3	29.0	28
4-Methyl-2-pentanone (MIBK)	25.0		22.1	16.1	88.4	64.4	1	29.0-160		J3	31.4	29
Methyl tert-butyl ether	5.00		4.84	3.53	96.8	70.6	1	28.0-150		J3	31.3	29
Naphthalene	5.00		4.47	3.57	89.4	71.4	1	12.0-156			22.4	35
n-Propylbenzene	5.00		4.89	3.64	97.8	72.8	1	31.0-154		J3	29.3	28
Styrene	5.00		4.72	3.48	94.4	69.6	1	33.0-155		J3	30.2	28
1,1,1,2-Tetrachloroethane	5.00		4.72	3.41	94.4	68.2	1	36.0-151		J3	32.2	29
1,1,2,2-Tetrachloroethane	5.00	U	4.41	3.55	88.2	71.0	1	33.0-150			21.6	28
Tetrachloroethene	5.00	U	5.06	3.88	101	77.6	1	10.0-160			26.4	27
Toluene	5.00		4.67	3.44	93.4	68.8	1	26.0-154		J3	30.3	28
1,1,2-Trichlorotrifluoroethane	5.00		6.02	4.66	120	93.2	1	23.0-160			25.5	30
1,2,3-Trichlorobenzene	5.00		4.65	3.43	93.0	68.6	1	17.0-150			30.2	36
1,2,4-Trichlorobenzene	5.00		4.40	3.43	88.0	68.6	1	24.0-150			24.8	33
1,1,1-Trichloroethane	5.00		5.49	4.02	110	80.4	1	23.0-160		J3	30.9	28
1,1,2-Trichloroethane	5.00	U	4.61	3.39	92.2	67.8	1	35.0-147		J3	30.5	27
Trichloroethene	5.00	0.228	6.01	4.36	120	87.2	1	10.0-160		J3	31.8	25
Trichlorofluoromethane	5.00		5.78	4.25	116	85.0	1	17.0-160			30.5	31
1,2,3-Trichloropropane	5.00		4.67	3.48	93.4	69.6	1	34.0-151		J3	29.2	29
1,2,3-Trimethylbenzene	5.00		4.76	3.51	95.2	70.2	1	32.0-149		J3	30.2	28
1,2,4-Trimethylbenzene	5.00		4.79	3.64	95.8	72.8	1	26.0-154		J3	27.3	27
1,3,5-Trimethylbenzene	5.00		4.79	3.54	95.8	70.8	1	28.0-153		J3	30.0	27
Xylenes, Total	15.0		14.2	10.2	94.7	68.0	1	29.0-154		J3	32.8	28
(S) Toluene-d8					91.4	93.3		80.0-120				
(S) 4-Bromofluorobenzene					93.4	93.6		77.0-126				
(S) 1,2-Dichloroethane-d4					92.2	93.8		70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3470024-2 11/08/19 11:13

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Acetone	U		1.05	25.0
cis-1,2-Dichloroethene	U		0.0933	0.500
Vinyl chloride	U		0.118	0.500
(S) Toluene-d8	97.9			80.0-120
(S) 4-Bromofluorobenzene	105			77.0-126
(S) 1,2-Dichloroethane-d4	106			70.0-130

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Laboratory Control Sample (LCS)

(LCS) R3470024-1 11/08/19 10:33

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Acetone	25.0	39.3	157	19.0-160	
cis-1,2-Dichloroethene	5.00	4.91	98.2	73.0-120	
Vinyl chloride	5.00	5.63	113	67.0-131	
(S) Toluene-d8			95.5	80.0-120	
(S) 4-Bromofluorobenzene			106	77.0-126	
(S) 1,2-Dichloroethane-d4			104	70.0-130	

6 Qc

7 Gl

8 Al

9 Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration method criteria.
J3	The associated batch QC was outside the established quality control range for precision.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

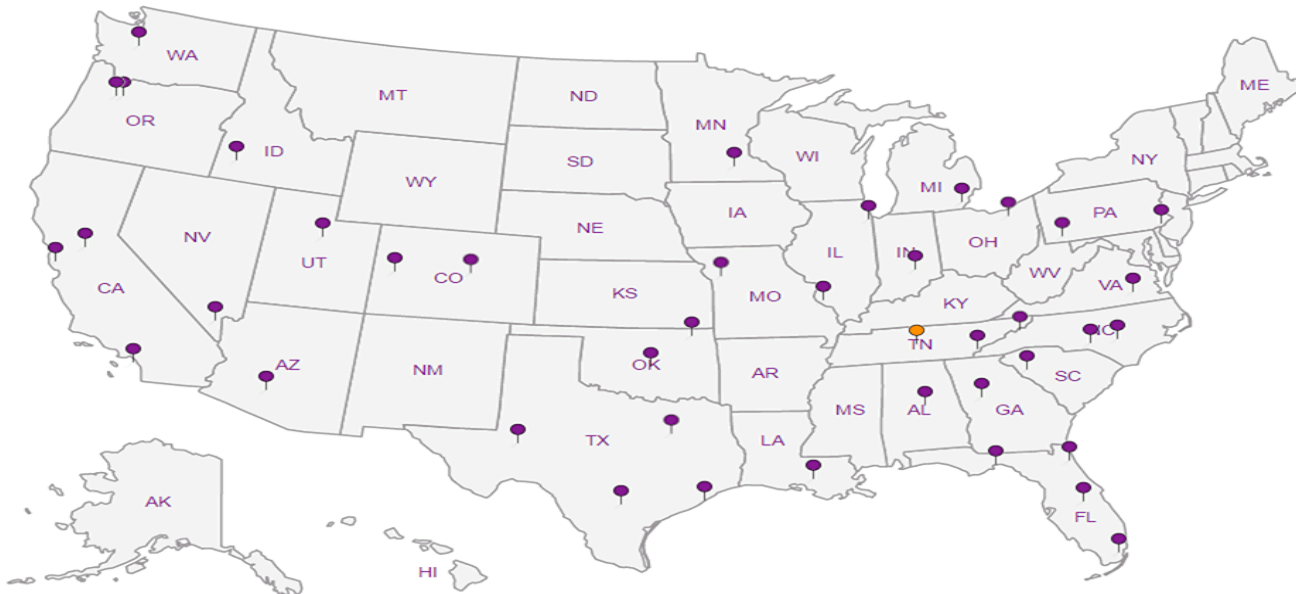
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

F205

ALL SHADED AREAS are for LAB USE ONLY

Company: PES Environmental, Inc.	Billing Information: Attn: Accounts Payable 1215 4th Ave STE 1350, Seattle, WA 98161
Address: 1215 4th Ave STE 1350, Seattle, WA 98161	
Report To: Bill Haldeman/Brian O'Neal	Email To: bhaldeman@pesenv.com; boneal@pesenv.com
Copy To: Kim Vik, Shannon McKernan, Karsten Springstead	Site Collection Info/Address: 700 Dexter Ave N

Container Preservative Type ** Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Customer Project Name/Number: American Linen 1413.001.02.501E	State: _____ County/City: _____ Time Zone Collected: _____ WA / King/Seattle [x]PT []MT []CT []ET
Phone: 206-529-3980 Email: mjoiner@pesenv.com	Site/Facility ID #: 1413.001.02.501E Compliance Monitoring? [x] Yes [] No
Collected By (print): <i>Chris DeBoer</i>	Purchase Order #: 1413.001.02.501E Quote #: PESENVSWA-ALP DW PWS ID #: DW Location Code:
Collected By (signature): <i>Chris DeBoer</i>	Turnaround Date Required: Immediately Packed on Ice: [x] Yes [] No
Sample Disposal: [] Dispose as appropriate [] Return [] Archive: [] Hold:	Rush: [] Same Day [] Next Day [] 2 Day [] 3 Day [] 4 Day [] 5 Day (Expedite Charges Apply) Field Filtered (if applicable): [] Yes [] No Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Composite End		Res Cl	# of Ctns
			Date	Time	Date	Time		
FW-141-103019	GW	Grab	10/30/19	1235				12
MW-990-103019	GW	Grab	10/30/19	1315				12

Analyses					Lab Profile/Line:	
NO3, SO4, Cl 125mlHDPE-NoPres	Alkalinity 125mlHDPE-NoPres	EEM RSK175LL 40mlAmb-HCI	TOC 250mlAmb-HCI or 250mlHDPE-HCI	Total Fe, Mn 6020 250mlHDPE-HNO3	VOCs 8260LLC 40mlAmb-HCI	Lab Sample Receipt Checklist: Custody Seals Present/Intact Y N NA Custody Signatures Present Y N NA Collector Signatures Present Y N NA Bottles Intact Y N NA Correct Bottles X N NA Sufficient Volume X N NA Samples Received on Ice X N NA VOA - Headspace Acceptable X N NA USDA Regulated Soils Y N NA Samples in Holding Time X N NA Residual Chlorine Present Y N NA Cl Strips: _____ Sample pH Acceptable Y N NA pH Strips: _____ Sulfide Present Y N NA Lead Acetate Strips: _____
LAB USE ONLY: Lab Sample # / Comments:						RAD SCREEN: <0.5 mR/hr 1155658 -01 02

Customer Remarks / Special Conditions / Possible Hazards:	Type of Ice Used: Wet Blue Dry None	SHORT HOLDS PRESENT (<72 hours): Y N N/A	LAB Sample Temperature Info: Temp Blank Received: Y N NA Therm ID#: 43 Cooler 1 Temp Upon Receipt: 28.0C Cooler 1 Therm Corr. Factor: 0.2C Cooler 1 Corrected Temp: 27.8C Comments: AL
	Packing Material Used:	Lab Tracking #:	
	Radchem sample(s) screened (<500 cpm): Y N NA	Samples received via: FEDEX UPS Client Courier Pace Courier	

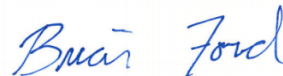
Relinquished by/Company: (Signature) <i>Chris DeBoer</i>	Date/Time: 10/30/19 1400	Received by/Company: (Signature)	Date/Time:	MTJL LAB USE ONLY Table #:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Acctnum: Template: Prelogin:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature) <i>Harley</i>	Date/Time: 10/31/19 0900	PM: PB:
				Trip Blank Received: Y N NA HCL MeOH TSP Other
				Non Conformance(s): YES / NO Page: _____ of: _____

1275 9100 0739

PES Environmental, Inc.- WA

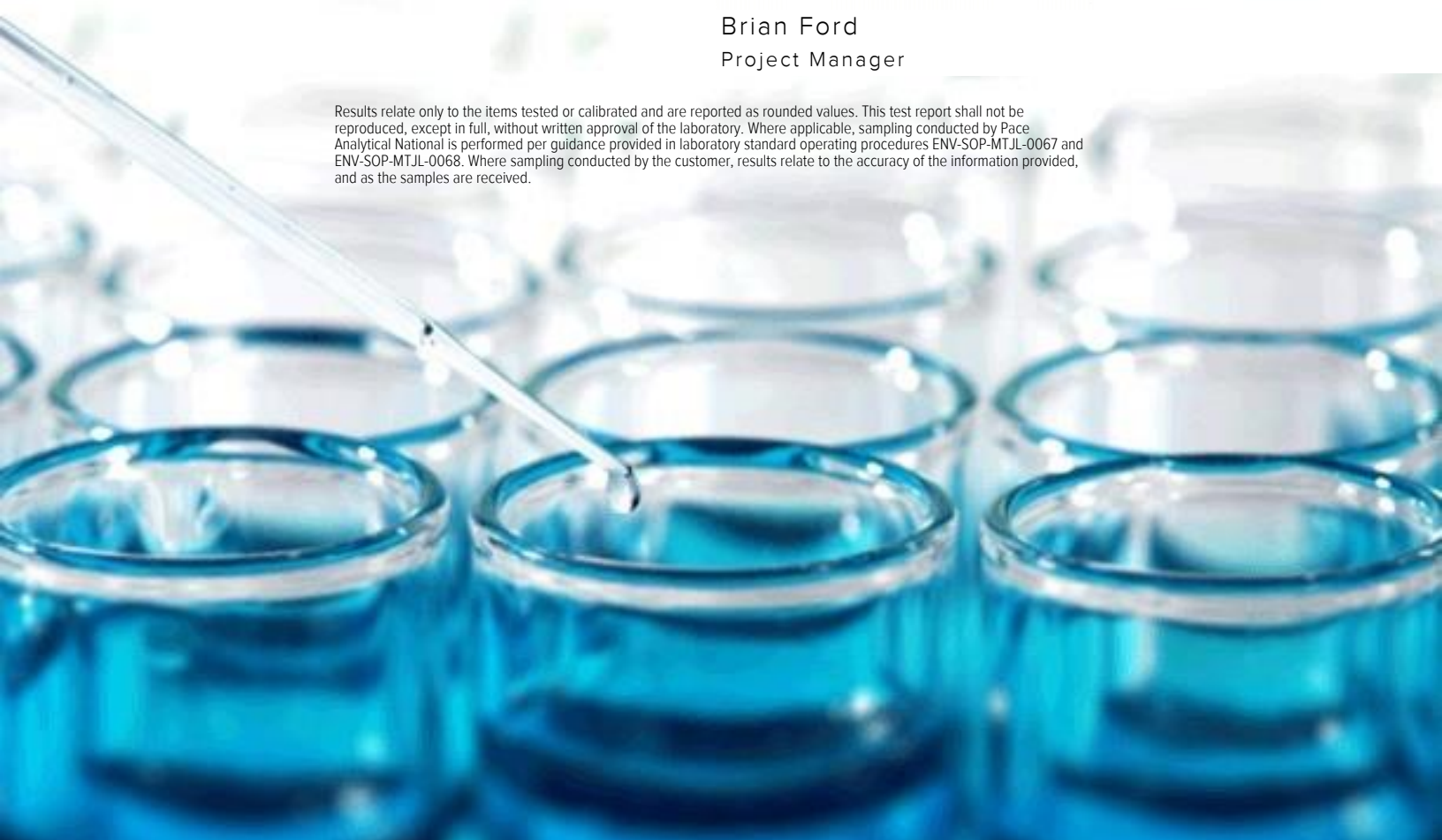
Sample Delivery Group: L1156109
Samples Received: 11/01/2019
Project Number: 1413.001.02.501E
Description: American Linen
Site: 1413.001.02.501E
Report To: Brian O'Neal/Bill Haldeman
1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





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SAMPLE SUMMARY



FMW-140-103119 L1156109-01 GW

Collected by
Chris DeBoer

Collected date/time
10/31/19 09:05

Received date/time
11/01/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1376333	1	11/07/19 02:56	11/07/19 02:56	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1373549	1	11/01/19 18:44	11/01/19 18:44	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1375433	1	11/05/19 22:49	11/05/19 22:49	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1373704	1	11/07/19 10:35	11/07/19 13:42	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1375047	1	11/05/19 15:54	11/05/19 15:54	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1377899	1	11/09/19 14:23	11/09/19 14:23	ACG	Mt. Juliet, TN

1
Cp

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Tc

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Ss

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Cn

FMW-142-103119 L1156109-02 GW

Collected by
Chris DeBoer

Collected date/time
10/31/19 10:15

Received date/time
11/01/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1376333	1	11/07/19 03:03	11/07/19 03:03	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1373549	1	11/01/19 18:58	11/01/19 18:58	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1375433	1	11/06/19 00:43	11/06/19 00:43	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1373704	1	11/07/19 10:35	11/07/19 14:31	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1375047	1	11/05/19 15:56	11/05/19 15:56	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1375795	10	11/06/19 14:48	11/06/19 14:48	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1377899	1	11/09/19 14:43	11/09/19 14:43	ACG	Mt. Juliet, TN

5
Sr

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Qc

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Gl

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Al

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Sc

MW-116-103119 L1156109-03 GW

Collected by
Chris DeBoer

Collected date/time
10/31/19 11:50

Received date/time
11/01/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method RSK175	WG1375047	1	11/05/19 16:01	11/05/19 16:01	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1375795	10	11/06/19 14:52	11/06/19 14:52	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1377899	1	11/09/19 15:04	11/09/19 15:04	ACG	Mt. Juliet, TN



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	396000		2710	20000	1	11/07/2019 02:56	WG1376333

Sample Narrative:

L1156109-01 WG1376333: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	17600		51.9	1000	1	11/01/2019 18:44	WG1373549
Nitrate	U		22.7	100	1	11/01/2019 18:44	WG1373549
Sulfate	2990	J	77.4	5000	1	11/01/2019 18:44	WG1373549

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	16800		102	1000	1	11/05/2019 22:49	WG1375433

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	213		15.0	100	1	11/07/2019 13:42	WG1373704
Manganese	1020		0.250	5.00	1	11/07/2019 13:42	WG1373704

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	2440		0.287	0.678	1	11/05/2019 15:54	WG1375047
Ethane	75.1		0.296	1.29	1	11/05/2019 15:54	WG1375047
Ethene	81.1		0.422	1.27	1	11/05/2019 15:54	WG1375047

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	5.97	J JO J4	1.05	25.0	1	11/09/2019 14:23	WG1377899
Acrylonitrile	U	J4	0.873	5.00	1	11/09/2019 14:23	WG1377899
Benzene	18.5		0.0896	0.500	1	11/09/2019 14:23	WG1377899
Bromobenzene	U		0.133	0.500	1	11/09/2019 14:23	WG1377899
Bromodichloromethane	U		0.0800	0.500	1	11/09/2019 14:23	WG1377899
Bromochloromethane	U		0.145	0.500	1	11/09/2019 14:23	WG1377899
Bromoform	U		0.186	0.500	1	11/09/2019 14:23	WG1377899
Bromomethane	U		0.157	2.50	1	11/09/2019 14:23	WG1377899
n-Butylbenzene	U	JO J4	0.143	0.500	1	11/09/2019 14:23	WG1377899
sec-Butylbenzene	U		0.134	0.500	1	11/09/2019 14:23	WG1377899
tert-Butylbenzene	U		0.183	0.500	1	11/09/2019 14:23	WG1377899
Carbon disulfide	3.49		0.101	0.500	1	11/09/2019 14:23	WG1377899
Carbon tetrachloride	U		0.159	0.500	1	11/09/2019 14:23	WG1377899
Chlorobenzene	U		0.140	0.500	1	11/09/2019 14:23	WG1377899
Chlorodibromomethane	U		0.128	0.500	1	11/09/2019 14:23	WG1377899
Chloroethane	U		0.141	2.50	1	11/09/2019 14:23	WG1377899
Chloroform	U		0.0860	0.500	1	11/09/2019 14:23	WG1377899
Chloromethane	U		0.153	1.25	1	11/09/2019 14:23	WG1377899
2-Chlorotoluene	U		0.111	0.500	1	11/09/2019 14:23	WG1377899
4-Chlorotoluene	U		0.0972	0.500	1	11/09/2019 14:23	WG1377899

1 Cp

2 Tc

3 Ss

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5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U	<u>JO</u>	0.325	2.50	1	11/09/2019 14:23	WG1377899
1,2-Dibromoethane	U		0.193	0.500	1	11/09/2019 14:23	WG1377899
Dibromomethane	U		0.117	0.500	1	11/09/2019 14:23	WG1377899
1,2-Dichlorobenzene	U		0.101	0.500	1	11/09/2019 14:23	WG1377899
1,3-Dichlorobenzene	U		0.130	0.500	1	11/09/2019 14:23	WG1377899
1,4-Dichlorobenzene	U		0.121	0.500	1	11/09/2019 14:23	WG1377899
Dichlorodifluoromethane	U		0.127	2.50	1	11/09/2019 14:23	WG1377899
1,1-Dichloroethane	U		0.114	0.500	1	11/09/2019 14:23	WG1377899
1,2-Dichloroethane	U		0.108	0.500	1	11/09/2019 14:23	WG1377899
1,1-Dichloroethene	U		0.188	0.500	1	11/09/2019 14:23	WG1377899
cis-1,2-Dichloroethene	0.160	<u>J</u>	0.0933	0.500	1	11/09/2019 14:23	WG1377899
trans-1,2-Dichloroethene	U		0.152	0.500	1	11/09/2019 14:23	WG1377899
1,2-Dichloropropane	U		0.190	0.500	1	11/09/2019 14:23	WG1377899
1,1-Dichloropropene	U		0.128	0.500	1	11/09/2019 14:23	WG1377899
1,3-Dichloropropane	U		0.147	1.00	1	11/09/2019 14:23	WG1377899
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/09/2019 14:23	WG1377899
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/09/2019 14:23	WG1377899
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/09/2019 14:23	WG1377899
2,2-Dichloropropane	U		0.0929	0.500	1	11/09/2019 14:23	WG1377899
Di-isopropyl ether	0.327	<u>J</u>	0.0924	0.500	1	11/09/2019 14:23	WG1377899
Ethylbenzene	U		0.158	0.500	1	11/09/2019 14:23	WG1377899
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/09/2019 14:23	WG1377899
2-Hexanone	U		0.757	5.00	1	11/09/2019 14:23	WG1377899
n-Hexane	U		0.305	5.00	1	11/09/2019 14:23	WG1377899
Iodomethane	U		0.377	10.0	1	11/09/2019 14:23	WG1377899
Isopropylbenzene	U		0.126	0.500	1	11/09/2019 14:23	WG1377899
p-Isopropyltoluene	U		0.138	0.500	1	11/09/2019 14:23	WG1377899
2-Butanone (MEK)	1.50	<u>J JO</u>	1.28	5.00	1	11/09/2019 14:23	WG1377899
Methylene Chloride	U	<u>JO</u>	1.07	2.50	1	11/09/2019 14:23	WG1377899
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/09/2019 14:23	WG1377899
Methyl tert-butyl ether	0.200	<u>J</u>	0.102	0.500	1	11/09/2019 14:23	WG1377899
Naphthalene	U		0.174	2.50	1	11/09/2019 14:23	WG1377899
n-Propylbenzene	U		0.162	0.500	1	11/09/2019 14:23	WG1377899
Styrene	U		0.117	0.500	1	11/09/2019 14:23	WG1377899
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/09/2019 14:23	WG1377899
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/09/2019 14:23	WG1377899
1,1,2-Trichlorotrifluoroethane	U	<u>JO J4</u>	0.164	0.500	1	11/09/2019 14:23	WG1377899
Tetrachloroethene	U		0.199	0.500	1	11/09/2019 14:23	WG1377899
Toluene	1.43		0.412	0.500	1	11/09/2019 14:23	WG1377899
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/09/2019 14:23	WG1377899
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/09/2019 14:23	WG1377899
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/09/2019 14:23	WG1377899
1,1,2-Trichloroethane	U		0.186	0.500	1	11/09/2019 14:23	WG1377899
Trichloroethene	U		0.153	0.500	1	11/09/2019 14:23	WG1377899
Trichlorofluoromethane	U		0.130	2.50	1	11/09/2019 14:23	WG1377899
1,2,3-Trichloropropane	U		0.247	2.50	1	11/09/2019 14:23	WG1377899
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/09/2019 14:23	WG1377899
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/09/2019 14:23	WG1377899
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/09/2019 14:23	WG1377899
Vinyl acetate	U		0.645	5.00	1	11/09/2019 14:23	WG1377899
Vinyl chloride	189		0.118	0.500	1	11/09/2019 14:23	WG1377899
Xylenes, Total	U		0.316	1.50	1	11/09/2019 14:23	WG1377899
(S) Toluene-d8	94.4			80.0-120		11/09/2019 14:23	WG1377899
(S) 4-Bromofluorobenzene	102			77.0-126		11/09/2019 14:23	WG1377899
(S) 1,2-Dichloroethane-d4	116			70.0-130		11/09/2019 14:23	WG1377899

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	276000		2710	20000	1	11/07/2019 03:03	WG1376333

Sample Narrative:

L1156109-02 WG1376333: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	25500		51.9	1000	1	11/01/2019 18:58	WG1373549
Nitrate	U		22.7	100	1	11/01/2019 18:58	WG1373549
Sulfate	18200		77.4	5000	1	11/01/2019 18:58	WG1373549

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	6500		102	1000	1	11/06/2019 00:43	WG1375433

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	3360		15.0	100	1	11/07/2019 14:31	WG1373704
Manganese	307		0.250	5.00	1	11/07/2019 14:31	WG1373704

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	8040		2.87	6.78	10	11/06/2019 14:48	WG1375795
Ethane	5.07		0.296	1.29	1	11/05/2019 15:56	WG1375047
Ethene	U		0.422	1.27	1	11/05/2019 15:56	WG1375047

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	3.11	J JO J4	1.05	25.0	1	11/09/2019 14:43	WG1377899
Acrylonitrile	U	J4	0.873	5.00	1	11/09/2019 14:43	WG1377899
Benzene	U		0.0896	0.500	1	11/09/2019 14:43	WG1377899
Bromobenzene	U		0.133	0.500	1	11/09/2019 14:43	WG1377899
Bromodichloromethane	U		0.0800	0.500	1	11/09/2019 14:43	WG1377899
Bromochloromethane	U		0.145	0.500	1	11/09/2019 14:43	WG1377899
Bromoform	U		0.186	0.500	1	11/09/2019 14:43	WG1377899
Bromomethane	U		0.157	2.50	1	11/09/2019 14:43	WG1377899
n-Butylbenzene	U	JO J4	0.143	0.500	1	11/09/2019 14:43	WG1377899
sec-Butylbenzene	U		0.134	0.500	1	11/09/2019 14:43	WG1377899
tert-Butylbenzene	U		0.183	0.500	1	11/09/2019 14:43	WG1377899
Carbon disulfide	0.894		0.101	0.500	1	11/09/2019 14:43	WG1377899
Carbon tetrachloride	U		0.159	0.500	1	11/09/2019 14:43	WG1377899
Chlorobenzene	U		0.140	0.500	1	11/09/2019 14:43	WG1377899
Chlorodibromomethane	U		0.128	0.500	1	11/09/2019 14:43	WG1377899
Chloroethane	U		0.141	2.50	1	11/09/2019 14:43	WG1377899
Chloroform	U		0.0860	0.500	1	11/09/2019 14:43	WG1377899
Chloromethane	U		0.153	1.25	1	11/09/2019 14:43	WG1377899
2-Chlorotoluene	U		0.111	0.500	1	11/09/2019 14:43	WG1377899
4-Chlorotoluene	U		0.0972	0.500	1	11/09/2019 14:43	WG1377899

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U	<u>JO</u>	0.325	2.50	1	11/09/2019 14:43	WG1377899
1,2-Dibromoethane	U		0.193	0.500	1	11/09/2019 14:43	WG1377899
Dibromomethane	U		0.117	0.500	1	11/09/2019 14:43	WG1377899
1,2-Dichlorobenzene	U		0.101	0.500	1	11/09/2019 14:43	WG1377899
1,3-Dichlorobenzene	U		0.130	0.500	1	11/09/2019 14:43	WG1377899
1,4-Dichlorobenzene	U		0.121	0.500	1	11/09/2019 14:43	WG1377899
Dichlorodifluoromethane	U		0.127	2.50	1	11/09/2019 14:43	WG1377899
1,1-Dichloroethane	U		0.114	0.500	1	11/09/2019 14:43	WG1377899
1,2-Dichloroethane	U		0.108	0.500	1	11/09/2019 14:43	WG1377899
1,1-Dichloroethene	U		0.188	0.500	1	11/09/2019 14:43	WG1377899
cis-1,2-Dichloroethene	U		0.0933	0.500	1	11/09/2019 14:43	WG1377899
trans-1,2-Dichloroethene	U		0.152	0.500	1	11/09/2019 14:43	WG1377899
1,2-Dichloropropane	U		0.190	0.500	1	11/09/2019 14:43	WG1377899
1,1-Dichloropropene	U		0.128	0.500	1	11/09/2019 14:43	WG1377899
1,3-Dichloropropane	U		0.147	1.00	1	11/09/2019 14:43	WG1377899
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/09/2019 14:43	WG1377899
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/09/2019 14:43	WG1377899
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/09/2019 14:43	WG1377899
2,2-Dichloropropane	U		0.0929	0.500	1	11/09/2019 14:43	WG1377899
Di-isopropyl ether	U		0.0924	0.500	1	11/09/2019 14:43	WG1377899
Ethylbenzene	U		0.158	0.500	1	11/09/2019 14:43	WG1377899
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/09/2019 14:43	WG1377899
2-Hexanone	U		0.757	5.00	1	11/09/2019 14:43	WG1377899
n-Hexane	U		0.305	5.00	1	11/09/2019 14:43	WG1377899
Iodomethane	U		0.377	10.0	1	11/09/2019 14:43	WG1377899
Isopropylbenzene	U		0.126	0.500	1	11/09/2019 14:43	WG1377899
p-Isopropyltoluene	U		0.138	0.500	1	11/09/2019 14:43	WG1377899
2-Butanone (MEK)	U	<u>JO</u>	1.28	5.00	1	11/09/2019 14:43	WG1377899
Methylene Chloride	U	<u>JO</u>	1.07	2.50	1	11/09/2019 14:43	WG1377899
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/09/2019 14:43	WG1377899
Methyl tert-butyl ether	U		0.102	0.500	1	11/09/2019 14:43	WG1377899
Naphthalene	U		0.174	2.50	1	11/09/2019 14:43	WG1377899
n-Propylbenzene	U		0.162	0.500	1	11/09/2019 14:43	WG1377899
Styrene	U		0.117	0.500	1	11/09/2019 14:43	WG1377899
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/09/2019 14:43	WG1377899
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/09/2019 14:43	WG1377899
1,1,2-Trichlorotrifluoroethane	U	<u>JO J4</u>	0.164	0.500	1	11/09/2019 14:43	WG1377899
Tetrachloroethene	U		0.199	0.500	1	11/09/2019 14:43	WG1377899
Toluene	U		0.412	0.500	1	11/09/2019 14:43	WG1377899
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/09/2019 14:43	WG1377899
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/09/2019 14:43	WG1377899
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/09/2019 14:43	WG1377899
1,1,2-Trichloroethane	U		0.186	0.500	1	11/09/2019 14:43	WG1377899
Trichloroethene	U		0.153	0.500	1	11/09/2019 14:43	WG1377899
Trichlorofluoromethane	U		0.130	2.50	1	11/09/2019 14:43	WG1377899
1,2,3-Trichloropropane	U		0.247	2.50	1	11/09/2019 14:43	WG1377899
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/09/2019 14:43	WG1377899
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/09/2019 14:43	WG1377899
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/09/2019 14:43	WG1377899
Vinyl acetate	U		0.645	5.00	1	11/09/2019 14:43	WG1377899
Vinyl chloride	U		0.118	0.500	1	11/09/2019 14:43	WG1377899
Xylenes, Total	U		0.316	1.50	1	11/09/2019 14:43	WG1377899
(S) Toluene-d8	91.8			80.0-120		11/09/2019 14:43	WG1377899
(S) 4-Bromofluorobenzene	100			77.0-126		11/09/2019 14:43	WG1377899
(S) 1,2-Dichloroethane-d4	118			70.0-130		11/09/2019 14:43	WG1377899

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	7650		2.87	6.78	10	11/06/2019 14:52	WG1375795
Ethane	U		0.296	1.29	1	11/05/2019 16:01	WG1375047
Ethene	U		0.422	1.27	1	11/05/2019 16:01	WG1375047

1 Cp

2 Tc

3 Ss

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	3.74	J JO J4	1.05	25.0	1	11/09/2019 15:04	WG1377899
Acrylonitrile	U	J4	0.873	5.00	1	11/09/2019 15:04	WG1377899
Benzene	U		0.0896	0.500	1	11/09/2019 15:04	WG1377899
Bromobenzene	U		0.133	0.500	1	11/09/2019 15:04	WG1377899
Bromodichloromethane	U		0.0800	0.500	1	11/09/2019 15:04	WG1377899
Bromochloromethane	U		0.145	0.500	1	11/09/2019 15:04	WG1377899
Bromoform	U		0.186	0.500	1	11/09/2019 15:04	WG1377899
Bromomethane	U		0.157	2.50	1	11/09/2019 15:04	WG1377899
n-Butylbenzene	U	JO J4	0.143	0.500	1	11/09/2019 15:04	WG1377899
sec-Butylbenzene	U		0.134	0.500	1	11/09/2019 15:04	WG1377899
tert-Butylbenzene	U		0.183	0.500	1	11/09/2019 15:04	WG1377899
Carbon disulfide	U		0.101	0.500	1	11/09/2019 15:04	WG1377899
Carbon tetrachloride	U		0.159	0.500	1	11/09/2019 15:04	WG1377899
Chlorobenzene	U		0.140	0.500	1	11/09/2019 15:04	WG1377899
Chlorodibromomethane	U		0.128	0.500	1	11/09/2019 15:04	WG1377899
Chloroethane	U		0.141	2.50	1	11/09/2019 15:04	WG1377899
Chloroform	U		0.0860	0.500	1	11/09/2019 15:04	WG1377899
Chloromethane	U		0.153	1.25	1	11/09/2019 15:04	WG1377899
2-Chlorotoluene	U		0.111	0.500	1	11/09/2019 15:04	WG1377899
4-Chlorotoluene	U		0.0972	0.500	1	11/09/2019 15:04	WG1377899
1,2-Dibromo-3-Chloropropane	U	JO	0.325	2.50	1	11/09/2019 15:04	WG1377899
1,2-Dibromoethane	U		0.193	0.500	1	11/09/2019 15:04	WG1377899
Dibromomethane	U		0.117	0.500	1	11/09/2019 15:04	WG1377899
1,2-Dichlorobenzene	U		0.101	0.500	1	11/09/2019 15:04	WG1377899
1,3-Dichlorobenzene	U		0.130	0.500	1	11/09/2019 15:04	WG1377899
1,4-Dichlorobenzene	U		0.121	0.500	1	11/09/2019 15:04	WG1377899
Dichlorodifluoromethane	U		0.127	2.50	1	11/09/2019 15:04	WG1377899
1,1-Dichloroethane	U		0.114	0.500	1	11/09/2019 15:04	WG1377899
1,2-Dichloroethane	U		0.108	0.500	1	11/09/2019 15:04	WG1377899
1,1-Dichloroethene	U		0.188	0.500	1	11/09/2019 15:04	WG1377899
cis-1,2-Dichloroethene	U		0.0933	0.500	1	11/09/2019 15:04	WG1377899
trans-1,2-Dichloroethene	U		0.152	0.500	1	11/09/2019 15:04	WG1377899
1,2-Dichloropropane	U		0.190	0.500	1	11/09/2019 15:04	WG1377899
1,1-Dichloropropene	U		0.128	0.500	1	11/09/2019 15:04	WG1377899
1,3-Dichloropropane	U		0.147	1.00	1	11/09/2019 15:04	WG1377899
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/09/2019 15:04	WG1377899
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/09/2019 15:04	WG1377899
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/09/2019 15:04	WG1377899
2,2-Dichloropropane	U		0.0929	0.500	1	11/09/2019 15:04	WG1377899
Di-isopropyl ether	U		0.0924	0.500	1	11/09/2019 15:04	WG1377899
Ethylbenzene	U		0.158	0.500	1	11/09/2019 15:04	WG1377899
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/09/2019 15:04	WG1377899
2-Hexanone	U		0.757	5.00	1	11/09/2019 15:04	WG1377899
n-Hexane	U		0.305	5.00	1	11/09/2019 15:04	WG1377899
Iodomethane	U		0.377	10.0	1	11/09/2019 15:04	WG1377899
Isopropylbenzene	U		0.126	0.500	1	11/09/2019 15:04	WG1377899
p-Isopropyltoluene	U		0.138	0.500	1	11/09/2019 15:04	WG1377899
2-Butanone (MEK)	U		1.28	5.00	1	11/09/2019 15:04	WG1377899

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methylene Chloride	U	<u>JO</u>	1.07	2.50	1	11/09/2019 15:04	WG1377899
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/09/2019 15:04	WG1377899
Methyl tert-butyl ether	U		0.102	0.500	1	11/09/2019 15:04	WG1377899
Naphthalene	U		0.174	2.50	1	11/09/2019 15:04	WG1377899
n-Propylbenzene	U		0.162	0.500	1	11/09/2019 15:04	WG1377899
Styrene	U		0.117	0.500	1	11/09/2019 15:04	WG1377899
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/09/2019 15:04	WG1377899
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/09/2019 15:04	WG1377899
1,1,2-Trichlorotrifluoroethane	U	<u>JO J4</u>	0.164	0.500	1	11/09/2019 15:04	WG1377899
Tetrachloroethene	U		0.199	0.500	1	11/09/2019 15:04	WG1377899
Toluene	U		0.412	0.500	1	11/09/2019 15:04	WG1377899
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/09/2019 15:04	WG1377899
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/09/2019 15:04	WG1377899
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/09/2019 15:04	WG1377899
1,1,2-Trichloroethane	U		0.186	0.500	1	11/09/2019 15:04	WG1377899
Trichloroethene	U		0.153	0.500	1	11/09/2019 15:04	WG1377899
Trichlorofluoromethane	U		0.130	2.50	1	11/09/2019 15:04	WG1377899
1,2,3-Trichloropropane	U		0.247	2.50	1	11/09/2019 15:04	WG1377899
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/09/2019 15:04	WG1377899
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/09/2019 15:04	WG1377899
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/09/2019 15:04	WG1377899
Vinyl acetate	U		0.645	5.00	1	11/09/2019 15:04	WG1377899
Vinyl chloride	U		0.118	0.500	1	11/09/2019 15:04	WG1377899
Xylenes, Total	U		0.316	1.50	1	11/09/2019 15:04	WG1377899
(S) Toluene-d8	94.6			80.0-120		11/09/2019 15:04	WG1377899
(S) 4-Bromofluorobenzene	102			77.0-126		11/09/2019 15:04	WG1377899
(S) 1,2-Dichloroethane-d4	117			70.0-130		11/09/2019 15:04	WG1377899

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3469414-1 11/06/19 23:16

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	3390	↓	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1156246-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1156246-04 11/07/19 03:39 • (DUP) R3469414-4 11/07/19 03:46

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	384000	383000	1	0.218		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

L1155933-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1155933-01 11/07/19 03:53 • (DUP) R3469414-6 11/07/19 04:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	75300	74900	1	0.504		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3469414-3 11/07/19 01:57

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	101000	101	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3467688-1 11/01/19 10:58

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	83.7	↓	51.9	1000
Nitrate	U		22.7	100
Sulfate	90.9	↓	77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L115658-01 Original Sample (OS) • Duplicate (DUP)

(OS) L115658-01 11/01/19 15:54 • (DUP) R3467688-3 11/01/19 16:07

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	67500	65200	1	3.56		15
Nitrate	U	0.000	1	0.000		15
Sulfate	909	872	1	4.21	↓	15

L1156202-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1156202-03 11/01/19 20:03 • (DUP) R3467688-6 11/01/19 20:42

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	ND	0.000	1	0.000		15
Nitrate	ND	0.000	1	0.000		15
Sulfate	ND	100	1	1.88	↓	15

Laboratory Control Sample (LCS)

(LCS) R3467688-2 11/01/19 11:11

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Chloride	40000	39500	98.7	80.0-120	
Nitrate	8000	8200	102	80.0-120	
Sulfate	40000	40000	100	80.0-120	



L1155905-05 Original Sample (OS) • Matrix Spike (MS)

(OS) L1155905-05 11/01/19 17:13 • (MS) R3467688-4 11/01/19 17:26

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	49700	97900	96.4	1	80.0-120	
Nitrate	5000	U	5070	101	1	80.0-120	
Sulfate	50000	2710	53200	101	1	80.0-120	

1 Cp

2 Tc

3 Ss

4 Cn

L1155905-05 Original Sample (OS) • Matrix Spike (MS)

(OS) L1155905-05 11/01/19 17:13 • (MS) R3467688-5 11/01/19 18:05

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	49700	95600	91.8	1	80.0-120	
Nitrate	5000	U	4990	99.9	1	80.0-120	
Sulfate	50000	2710	51900	98.3	1	80.0-120	

5 Sr

6 Qc

7 Gl

L1156212-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1156212-01 11/01/19 20:55 • (MS) R3467688-7 11/01/19 21:08

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	7210	56500	98.5	1	80.0-120	
Nitrate	5000	917	5900	99.7	1	80.0-120	
Sulfate	50000	53200	101000	95.4	1	80.0-120	E

8 Al

9 Sc



Method Blank (MB)

(MB) R3468961-1 11/05/19 20:18

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	345	↓	102	1000

1 Cp

2 Tc

3 Ss

L1156109-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1156109-01 11/05/19 22:49 • (DUP) R3468961-3 11/05/19 23:09

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	16800	16400	1	2.11		20

4 Cn

5 Sr

L1156246-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1156246-04 11/06/19 02:54 • (DUP) R3468961-6 11/06/19 03:11

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	ND	578	1	0.000		20

6 Qc

7 Gl

8 Al

Laboratory Control Sample (LCS)

(LCS) R3468961-2 11/05/19 20:58

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC (Total Organic Carbon)	75000	74100	98.8	85.0-115	

9 Sc

L1156483-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1156483-01 11/06/19 06:03 • (MS) R3468961-7 11/06/19 06:25 • (MSD) R3468961-8 11/06/19 06:44

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	27500	76700	77000	98.5	99.1	1	80.0-120			0.390	20



Method Blank (MB)

(MB) R3469566-1 11/07/19 13:11

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Iron	U		15.0	100
Manganese	U		0.250	5.00

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3469566-2 11/07/19 13:15 • (LCSD) R3469566-3 11/07/19 13:18

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Iron	5000	5050	5040	101	101	80.0-120			0.200	20
Manganese	50.0	51.5	50.1	103	100	80.0-120			2.56	20

L1156093-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1156093-01 11/07/19 13:21 • (MS) R3469566-5 11/07/19 13:28 • (MSD) R3469566-6 11/07/19 13:32

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Iron	5000	9910	15500	16000	111	122	1	75.0-125			3.49	20
Manganese	50.0	1630	1620	1640	0.000	31.3	1	75.0-125	V	V	1.65	20



Method Blank (MB)

(MB) R3468700-1 11/05/19 15:11

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1156461-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1156461-01 11/05/19 15:13 • (DUP) R3468700-2 11/05/19 16:20

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	ND	0.000	1	0.000		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

L1156483-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1156483-01 11/05/19 17:05 • (DUP) R3468700-3 11/05/19 17:14

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	33.6	32.3	1	3.95		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3468700-4 11/05/19 17:20 • (LCSD) R3468700-5 11/05/19 17:23

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	73.6	75.6	109	112	85.0-115			2.68	20
Ethane	129	135	137	105	106	85.0-115			1.47	20
Ethene	127	141	143	111	113	85.0-115			1.41	20



Method Blank (MB)

(MB) R3469102-1 11/06/19 11:24

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Methane	U		0.287	0.678

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1156976-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1156976-01 11/06/19 11:27 • (DUP) R3469102-2 11/06/19 14:09

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	ND	0.000	1	0.000		20

L1155754-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1155754-05 11/06/19 14:23 • (DUP) R3469102-3 11/06/19 14:55

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	ND	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3469102-4 11/06/19 14:57 • (LCSD) R3469102-5 11/06/19 15:01

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Methane	67.8	73.4	75.7	108	112	85.0-115			3.09	20



Method Blank (MB)

(MB) R3470351-2 11/09/19 04:42

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3470351-2 11/09/19 04:42

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	93.8			80.0-120
(S) 4-Bromofluorobenzene	106			77.0-126
(S) 1,2-Dichloroethane-d4	110			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3470351-1 11/09/19 04:01

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	25.0	41.6	166	19.0-160	J4
Acrylonitrile	25.0	38.7	155	55.0-149	J4
Benzene	5.00	4.66	93.2	70.0-123	
Bromobenzene	5.00	4.99	99.8	73.0-121	
Bromodichloromethane	5.00	4.70	94.0	75.0-120	
Bromochloromethane	5.00	5.14	103	76.0-122	
Bromoform	5.00	4.38	87.6	68.0-132	
Bromomethane	5.00	4.62	92.4	10.0-160	
n-Butylbenzene	5.00	3.64	72.8	73.0-125	J4
sec-Butylbenzene	5.00	5.00	100	75.0-125	
tert-Butylbenzene	5.00	5.28	106	76.0-124	
Carbon disulfide	5.00	4.63	92.6	61.0-128	
Carbon tetrachloride	5.00	4.83	96.6	68.0-126	
Chlorobenzene	5.00	4.78	95.6	80.0-121	
Chlorodibromomethane	5.00	4.30	86.0	77.0-125	
Chloroethane	5.00	4.77	95.4	47.0-150	
Chloroform	5.00	4.87	97.4	73.0-120	
Chloromethane	5.00	6.60	132	41.0-142	
2-Chlorotoluene	5.00	5.65	113	76.0-123	
4-Chlorotoluene	5.00	5.88	118	75.0-122	
1,2-Dibromo-3-Chloropropane	5.00	4.40	88.0	58.0-134	
1,2-Dibromoethane	5.00	4.05	81.0	80.0-122	
Dibromomethane	5.00	4.68	93.6	80.0-120	
1,2-Dichlorobenzene	5.00	4.15	83.0	79.0-121	
1,3-Dichlorobenzene	5.00	4.95	99.0	79.0-120	
1,4-Dichlorobenzene	5.00	4.68	93.6	79.0-120	
Dichlorodifluoromethane	5.00	5.30	106	51.0-149	
1,1-Dichloroethane	5.00	5.29	106	70.0-126	
1,2-Dichloroethane	5.00	5.38	108	70.0-128	
1,1-Dichloroethene	5.00	4.53	90.6	71.0-124	
cis-1,2-Dichloroethene	5.00	4.73	94.6	73.0-120	
trans-1,2-Dichloroethene	5.00	4.61	92.2	73.0-120	
1,2-Dichloropropane	5.00	4.93	98.6	77.0-125	
1,1-Dichloropropene	5.00	4.78	95.6	74.0-126	
1,3-Dichloropropane	5.00	4.08	81.6	80.0-120	
cis-1,3-Dichloropropene	5.00	4.72	94.4	80.0-123	
trans-1,3-Dichloropropene	5.00	4.15	83.0	78.0-124	
trans-1,4-Dichloro-2-butene	5.00	6.38	128	33.0-144	
2,2-Dichloropropane	5.00	4.19	83.8	58.0-130	
Di-isopropyl ether	5.00	5.54	111	58.0-138	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3470351-1 11/09/19 04:01

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Ethylbenzene	5.00	4.38	87.6	79.0-123	
Hexachloro-1,3-butadiene	5.00	3.88	77.6	54.0-138	
2-Hexanone	25.0	27.5	110	67.0-149	
n-Hexane	5.00	5.89	118	57.0-133	
Iodomethane	25.0	22.5	90.0	33.0-147	
Isopropylbenzene	5.00	4.49	89.8	76.0-127	
p-Isopropyltoluene	5.00	4.95	99.0	76.0-125	
2-Butanone (MEK)	25.0	38.9	156	44.0-160	
Methylene Chloride	5.00	3.65	73.0	67.0-120	
4-Methyl-2-pentanone (MIBK)	25.0	25.8	103	68.0-142	
Methyl tert-butyl ether	5.00	4.78	95.6	68.0-125	
Naphthalene	5.00	5.06	101	54.0-135	
n-Propylbenzene	5.00	5.30	106	77.0-124	
Styrene	5.00	4.72	94.4	73.0-130	
1,1,1,2-Tetrachloroethane	5.00	4.14	82.8	75.0-125	
1,1,2,2-Tetrachloroethane	5.00	4.56	91.2	65.0-130	
1,1,2-Trichlorotrifluoroethane	5.00	3.36	67.2	69.0-132	J4
Tetrachloroethene	5.00	4.39	87.8	72.0-132	
Toluene	5.00	4.38	87.6	79.0-120	
1,2,3-Trichlorobenzene	5.00	4.49	89.8	50.0-138	
1,2,4-Trichlorobenzene	5.00	4.43	88.6	57.0-137	
1,1,1-Trichloroethane	5.00	5.08	102	73.0-124	
1,1,2-Trichloroethane	5.00	4.18	83.6	80.0-120	
Trichloroethene	5.00	5.23	105	78.0-124	
Trichlorofluoromethane	5.00	5.21	104	59.0-147	
1,2,3-Trichloropropane	5.00	5.97	119	73.0-130	
1,2,4-Trimethylbenzene	5.00	5.58	112	76.0-121	
1,2,3-Trimethylbenzene	5.00	4.53	90.6	77.0-120	
1,3,5-Trimethylbenzene	5.00	5.47	109	76.0-122	
Vinyl acetate	25.0	25.1	100	11.0-160	
Vinyl chloride	5.00	4.90	98.0	67.0-131	
Xylenes, Total	15.0	13.6	90.7	79.0-123	
(S) Toluene-d8			96.2	80.0-120	
(S) 4-Bromofluorobenzene			105	77.0-126	
(S) 1,2-Dichloroethane-d4			111	70.0-130	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration method criteria.
J4	The associated batch QC was outside the established quality control range for accuracy.
V	The sample concentration is too high to evaluate accurate spike recoveries.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

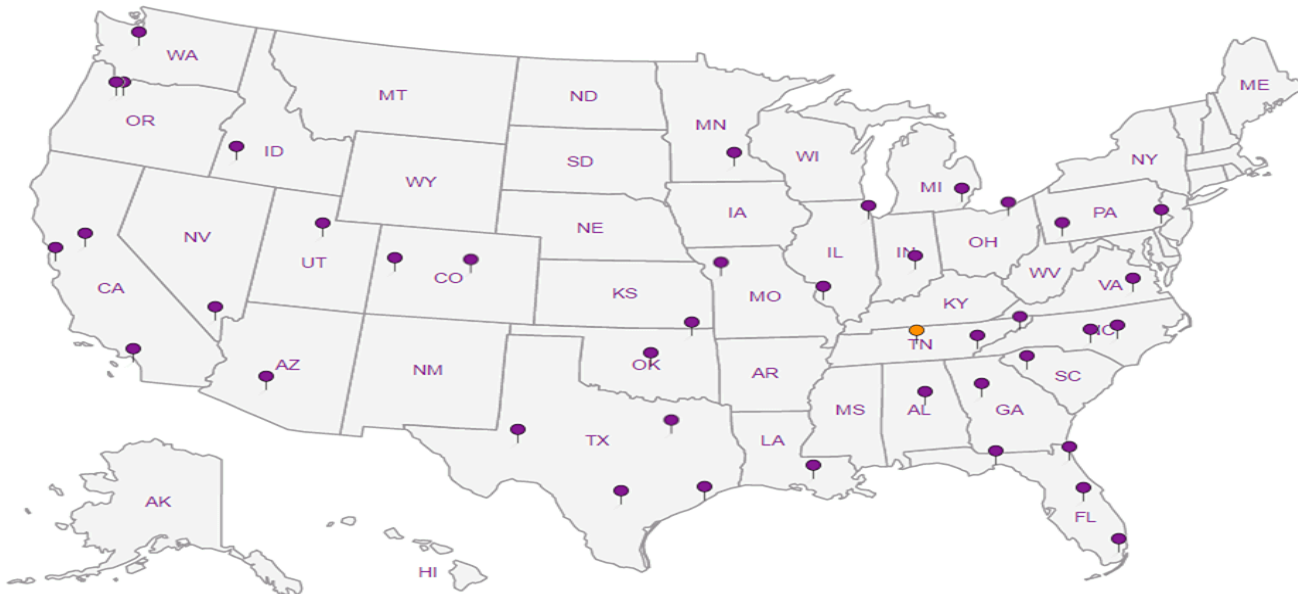
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

Company: PES Environmental, Inc.
Address: 1215 4th Ave STE 1350, Seattle, WA 98161

Billing Information: Attn: Accounts Payable 1215 4th Ave STE 1350, Seattle, WA 98161

Report To: Bill Haldeman/Brian O'Neal

Email To: bhdeman@pesenv.com; boneal@pesenv.com

Copy To: Kim Vik, Shannon McKernan, Karsten Springstead

Site Collection Info/Address: 700 Dexter Ave N

Customer Project Name/Number: American Linen
1413.001.02.501E

State: WA / County/City: King/Seattle [x] PT [] MT [] CT [] ET
Time Zone Collected: []

Phone: 206-529-3980
Email: mjoiner@pesenv.com

Site/Facility ID #: 1413.001.02.501E

Compliance Monitoring?
[x] Yes [] No

Collected By (print): *Chris DeBoer*

Purchase Order #: 1413.001.02.501E

DW PWS ID #:

Collected By (signature): *Chris DeBoer*

Quote #: PESENSWA-ALP
Turnaround Date Required:

DW Location Code:

Sample Disposal:

Rush: [] Same Day [] Next Day
[] 2 Day [] 3 Day [] 4 Day [] 5 Day
(Expedite Charges Apply)

Immediately Packed on Ice:
[x] Yes [] No

Field Filtered (if applicable):
[] Yes [] No

[] Dispose as appropriate [] Return
[] Archive:
[] Hold:

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Composite End		Res Cl	# of Ctns
			Date	Time	Date	Time		
FMW-140-103119	GW	Grab	10/31/19	0905				12
FMW-142-103119	GW	Grab	10/31/19	1015				12
MW-116-103119	GW	Grab	10/31/19	1150				78
								PH

Analytes	Lab Profile/Line:
NO3, SO4, Cl 125mLHDPE-NoPres	Lab Sample Receipt Checklist: Custody Seals Present/Intact Y N <input checked="" type="checkbox"/> NA Custody Signatures Present Y N <input checked="" type="checkbox"/> NA Collector Signature Present <input checked="" type="checkbox"/> N NA Bottles Intact <input checked="" type="checkbox"/> N NA Correct Bottles <input checked="" type="checkbox"/> N NA Sufficient Volume <input checked="" type="checkbox"/> N NA Samples Received on Ice <input checked="" type="checkbox"/> N NA VOA - Headspace Acceptable <input checked="" type="checkbox"/> N NA USDA Regulated Soils Y N <input checked="" type="checkbox"/> NA Samples in Holding Time <input checked="" type="checkbox"/> N NA Residual Chlorine Present Y N <input checked="" type="checkbox"/> NA Cl Strips: _____
Alkalinity 125mLHDPE-NoPres	Sample pH Acceptable Y N <input checked="" type="checkbox"/> NA pH Strips: _____
EEM RSK175LL 40mL Amb-HCl	Sulfide Present Y N <input checked="" type="checkbox"/> NA Lead Acetate Strips: _____
TOC 250mL Amb-HCl or 250mL HDPE-HNO3	LAB USE ONLY: Lab Sample # / Comments: B036
Total Fe, Mn 6020 250mL HDPE-HNO3	
VOCs 8260LLC 40mL Amb-HCl	

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

Container Preservative Type ** Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

Customer Remarks / Special Conditions / Possible Hazards:
Type of Ice Used: Wet Blue Dry None
Packing Material Used:
Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A
Lab Tracking #:
Samples received via:
 FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: *252*
Cooler 1 Temp Upon Receipt: *3* °C
Cooler 1 Therm Corr. Factor: *2*
Cooler 1 Corrected Temp: *5* °C
Comments:
RAD SCREEN: <0.5 mR/hr
LOC 2
Trip Blank Received: Y N NA
HCL MeOH TSP Other
Non Conformance(s): YES / NO
Page: *OK*
of:

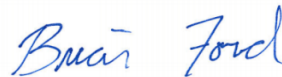
Relinquished by/Company: (Signature) *Chris DeBoer PES* Date/Time: 10/31/19 1805
Received by/Company: (Signature)
Relinquished by/Company: (Signature) Date/Time: Received by/Company: (Signature)
Relinquished by/Company: (Signature) Date/Time: Received by/Company: (Signature) *[Signature]*

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

PES Environmental, Inc.- WA

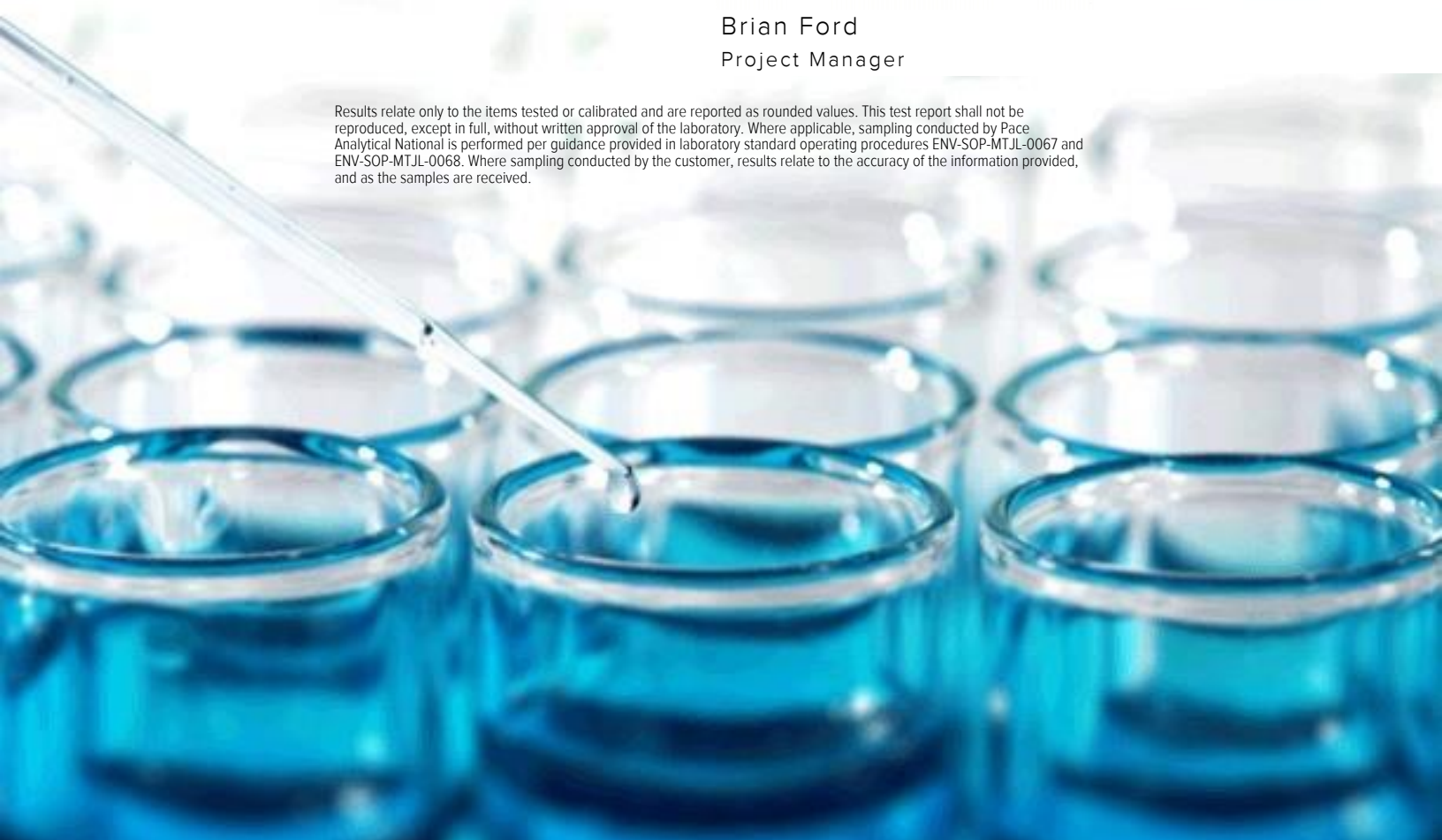
Sample Delivery Group: L1156445
Samples Received: 11/02/2019
Project Number: 1413.001.02.501E
Description: American Linen
Site: 1413.001.02.501E
Report To: Brian O'Neal/Bill Haldeman
1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





Cp: Cover Page	1	1 Cp
Tc: Table of Contents	2	2 Tc
Ss: Sample Summary	3	3 Ss
Cn: Case Narrative	4	4 Cn
Sr: Sample Results	5	5 Sr
FMW-143-103119 L1156445-01	5	5 Qc
Qc: Quality Control Summary	7	7 Gl
Wet Chemistry by Method 2320 B-2011	7	7 Al
Wet Chemistry by Method 9056A	8	8 Sc
Wet Chemistry by Method 9060A	10	
Metals (ICPMS) by Method 6020B	11	
Volatile Organic Compounds (GC) by Method RSK175	12	
Volatile Organic Compounds (GC/MS) by Method 8260C	13	
Gl: Glossary of Terms	17	
Al: Accreditations & Locations	18	
Sc: Sample Chain of Custody	19	

SAMPLE SUMMARY



FMW-143-103119 L1156445-01 GW

Collected by: Chris DeBoer
 Collected date/time: 10/31/19 16:05
 Received date/time: 11/02/19 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1376629	1	11/07/19 17:54	11/07/19 17:54	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1373953	1	11/02/19 12:20	11/02/19 12:20	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1375433	1	11/06/19 04:59	11/06/19 04:59	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1375892	1	11/06/19 13:48	11/06/19 16:20	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1375047	1	11/05/19 16:34	11/05/19 16:34	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1378314	1	11/11/19 00:18	11/11/19 00:18	ACG	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	405000		2710	20000	1	11/07/2019 17:54	WG1376629

Sample Narrative:

L1156445-01 WG1376629: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	68400		51.9	1000	1	11/02/2019 12:20	WG1373953
Nitrate	U		22.7	100	1	11/02/2019 12:20	WG1373953
Sulfate	28000		77.4	5000	1	11/02/2019 12:20	WG1373953

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	4340		102	1000	1	11/06/2019 04:59	WG1375433

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	3570		15.0	100	1	11/06/2019 16:20	WG1375892
Manganese	5180		0.250	5.00	1	11/06/2019 16:20	WG1375892

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	1490		0.287	0.678	1	11/05/2019 16:34	WG1375047
Ethane	U		0.296	1.29	1	11/05/2019 16:34	WG1375047
Ethene	U		0.422	1.27	1	11/05/2019 16:34	WG1375047

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.15	<u>J</u>	1.05	25.0	1	11/11/2019 00:18	WG1378314
Acrylonitrile	U		0.873	5.00	1	11/11/2019 00:18	WG1378314
Benzene	U		0.0896	0.500	1	11/11/2019 00:18	WG1378314
Bromobenzene	U	<u>JO</u>	0.133	0.500	1	11/11/2019 00:18	WG1378314
Bromodichloromethane	U		0.0800	0.500	1	11/11/2019 00:18	WG1378314
Bromochloromethane	U		0.145	0.500	1	11/11/2019 00:18	WG1378314
Bromoform	U		0.186	0.500	1	11/11/2019 00:18	WG1378314
Bromomethane	U		0.157	2.50	1	11/11/2019 00:18	WG1378314
n-Butylbenzene	U	<u>JO</u>	0.143	0.500	1	11/11/2019 00:18	WG1378314
sec-Butylbenzene	U		0.134	0.500	1	11/11/2019 00:18	WG1378314
tert-Butylbenzene	U		0.183	0.500	1	11/11/2019 00:18	WG1378314
Carbon disulfide	U		0.101	0.500	1	11/11/2019 00:18	WG1378314
Carbon tetrachloride	U	<u>J4</u>	0.159	0.500	1	11/11/2019 00:18	WG1378314
Chlorobenzene	U		0.140	0.500	1	11/11/2019 00:18	WG1378314
Chlorodibromomethane	U		0.128	0.500	1	11/11/2019 00:18	WG1378314
Chloroethane	U		0.141	2.50	1	11/11/2019 00:18	WG1378314
Chloroform	U		0.0860	0.500	1	11/11/2019 00:18	WG1378314
Chloromethane	U		0.153	1.25	1	11/11/2019 00:18	WG1378314
2-Chlorotoluene	U		0.111	0.500	1	11/11/2019 00:18	WG1378314
4-Chlorotoluene	U		0.0972	0.500	1	11/11/2019 00:18	WG1378314

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/11/2019 00:18	WG1378314
1,2-Dibromoethane	U		0.193	0.500	1	11/11/2019 00:18	WG1378314
Dibromomethane	U		0.117	0.500	1	11/11/2019 00:18	WG1378314
1,2-Dichlorobenzene	U		0.101	0.500	1	11/11/2019 00:18	WG1378314
1,3-Dichlorobenzene	U		0.130	0.500	1	11/11/2019 00:18	WG1378314
1,4-Dichlorobenzene	U		0.121	0.500	1	11/11/2019 00:18	WG1378314
Dichlorodifluoromethane	U		0.127	2.50	1	11/11/2019 00:18	WG1378314
1,1-Dichloroethane	U		0.114	0.500	1	11/11/2019 00:18	WG1378314
1,2-Dichloroethane	U		0.108	0.500	1	11/11/2019 00:18	WG1378314
1,1-Dichloroethene	U		0.188	0.500	1	11/11/2019 00:18	WG1378314
cis-1,2-Dichloroethene	U		0.0933	0.500	1	11/11/2019 00:18	WG1378314
trans-1,2-Dichloroethene	U		0.152	0.500	1	11/11/2019 00:18	WG1378314
1,2-Dichloropropane	U		0.190	0.500	1	11/11/2019 00:18	WG1378314
1,1-Dichloropropene	U		0.128	0.500	1	11/11/2019 00:18	WG1378314
1,3-Dichloropropane	U		0.147	1.00	1	11/11/2019 00:18	WG1378314
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/11/2019 00:18	WG1378314
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/11/2019 00:18	WG1378314
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	11/11/2019 00:18	WG1378314
2,2-Dichloropropane	U		0.0929	0.500	1	11/11/2019 00:18	WG1378314
Di-isopropyl ether	U		0.0924	0.500	1	11/11/2019 00:18	WG1378314
Ethylbenzene	U		0.158	0.500	1	11/11/2019 00:18	WG1378314
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/11/2019 00:18	WG1378314
2-Hexanone	U		0.757	5.00	1	11/11/2019 00:18	WG1378314
n-Hexane	U		0.305	5.00	1	11/11/2019 00:18	WG1378314
Iodomethane	U		0.377	10.0	1	11/11/2019 00:18	WG1378314
Isopropylbenzene	U		0.126	0.500	1	11/11/2019 00:18	WG1378314
p-Isopropyltoluene	U		0.138	0.500	1	11/11/2019 00:18	WG1378314
2-Butanone (MEK)	U		1.28	5.00	1	11/11/2019 00:18	WG1378314
Methylene Chloride	U		1.07	2.50	1	11/11/2019 00:18	WG1378314
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/11/2019 00:18	WG1378314
Methyl tert-butyl ether	U		0.102	0.500	1	11/11/2019 00:18	WG1378314
Naphthalene	U	JO	0.174	2.50	1	11/11/2019 00:18	WG1378314
n-Propylbenzene	U	JO	0.162	0.500	1	11/11/2019 00:18	WG1378314
Styrene	U		0.117	0.500	1	11/11/2019 00:18	WG1378314
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/11/2019 00:18	WG1378314
1,1,2,2-Tetrachloroethane	U	JO	0.130	0.500	1	11/11/2019 00:18	WG1378314
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/11/2019 00:18	WG1378314
Tetrachloroethene	U		0.199	0.500	1	11/11/2019 00:18	WG1378314
Toluene	U		0.412	0.500	1	11/11/2019 00:18	WG1378314
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/11/2019 00:18	WG1378314
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/11/2019 00:18	WG1378314
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/11/2019 00:18	WG1378314
1,1,2-Trichloroethane	U		0.186	0.500	1	11/11/2019 00:18	WG1378314
Trichloroethene	U	J4	0.153	0.500	1	11/11/2019 00:18	WG1378314
Trichlorofluoromethane	U		0.130	2.50	1	11/11/2019 00:18	WG1378314
1,2,3-Trichloropropane	U		0.247	2.50	1	11/11/2019 00:18	WG1378314
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/11/2019 00:18	WG1378314
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/11/2019 00:18	WG1378314
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/11/2019 00:18	WG1378314
Vinyl acetate	U	JO	0.645	5.00	1	11/11/2019 00:18	WG1378314
Vinyl chloride	U		0.118	0.500	1	11/11/2019 00:18	WG1378314
Xylenes, Total	U		0.316	1.50	1	11/11/2019 00:18	WG1378314
(S) Toluene-d8	107			80.0-120		11/11/2019 00:18	WG1378314
(S) 4-Bromofluorobenzene	111			77.0-126		11/11/2019 00:18	WG1378314
(S) 1,2-Dichloroethane-d4	114			70.0-130		11/11/2019 00:18	WG1378314

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3469668-1 11/07/19 15:00

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	3970	↓	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1156212-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1156212-01 11/07/19 15:42 • (DUP) R3469668-2 11/07/19 15:50

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	276000	276000	1	0.262		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

L1156460-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1156460-01 11/07/19 18:01 • (DUP) R3469668-4 11/07/19 18:10

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	1720000	1840000	1	6.52		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3469668-3 11/07/19 16:21

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	99600	99.6	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3467998-1 11/02/19 08:43

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Chloride	U		51.9	1000
Nitrate	U		22.7	100
Sulfate	U		77.4	5000

L1156445-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1156445-01 11/02/19 12:20 • (DUP) R3467998-3 11/02/19 12:40

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	68400	68400	1	0.0712		15
Nitrate	U	0.000	1	0.000		15
Sulfate	28000	28100	1	0.163		15

L1156483-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1156483-05 11/02/19 18:43 • (DUP) R3467998-6 11/02/19 19:01

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	12300	12300	1	0.271		15
Nitrate	U	0.000	1	0.000		15
Sulfate	15200	15200	1	0.0263		15

Laboratory Control Sample (LCS)

(LCS) R3467998-2 11/02/19 09:01

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Chloride	40000	38900	97.4	80.0-120	
Nitrate	8000	8110	101	80.0-120	
Sulfate	40000	39400	98.5	80.0-120	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



L1156445-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1156445-01 11/02/19 12:20 • (MS) R3467998-4 11/02/19 12:57 • (MSD) R3467998-5 11/02/19 13:14

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	68400	115000	116000	94.1	94.9	1	80.0-120	E	E	0.338	15
Nitrate	5000	U	4980	5000	99.7	100	1	80.0-120			0.369	15
Sulfate	50000	28000	77100	77500	98.2	99.0	1	80.0-120			0.516	15

L1156483-05 Original Sample (OS) • Matrix Spike (MS)

(OS) L1156483-05 11/02/19 18:43 • (MS) R3467998-7 11/02/19 19:19

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	12300	62400	100	1	80.0-120	
Nitrate	5000	U	5120	102	1	80.0-120	
Sulfate	50000	15200	64900	99.5	1	80.0-120	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3468961-1 11/05/19 20:18

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	345	↓	102	1000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1156109-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1156109-01 11/05/19 22:49 • (DUP) R3468961-3 11/05/19 23:09

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	16800	16400	1	2.11		20

L1156246-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1156246-04 11/06/19 02:54 • (DUP) R3468961-6 11/06/19 03:11

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	ND	578	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3468961-2 11/05/19 20:58

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC (Total Organic Carbon)	75000	74100	98.8	85.0-115	

L1156483-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1156483-01 11/06/19 06:03 • (MS) R3468961-7 11/06/19 06:25 • (MSD) R3468961-8 11/06/19 06:44

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	27500	76700	77000	98.5	99.1	1	80.0-120			0.390	20



Method Blank (MB)

(MB) R3469130-1 11/06/19 15:35

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Iron	U		15.0	100
Manganese	0.432	J	0.250	5.00

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3469130-2 11/06/19 15:38 • (LCSD) R3469130-3 11/06/19 15:42

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Iron	5000	5010	5040	100	101	80.0-120			0.571	20
Manganese	50.0	51.3	51.1	103	102	80.0-120			0.320	20

5 Sr

6 Qc

L1154680-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1154680-01 11/06/19 15:45 • (MS) R3469130-5 11/06/19 15:52 • (MSD) R3469130-6 11/06/19 15:55

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Iron	5000	242	5080	5080	96.8	96.7	1	75.0-125			0.0771	20
Manganese	50.0	163	206	208	86.2	89.0	1	75.0-125			0.673	20

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3468700-1 11/05/19 15:11

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1156461-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1156461-01 11/05/19 15:13 • (DUP) R3468700-2 11/05/19 16:20

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	ND	0.000	1	0.000		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

L1156483-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1156483-01 11/05/19 17:05 • (DUP) R3468700-3 11/05/19 17:14

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	33.6	32.3	1	3.95		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3468700-4 11/05/19 17:20 • (LCSD) R3468700-5 11/05/19 17:23

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	73.6	75.6	109	112	85.0-115			2.68	20
Ethane	129	135	137	105	106	85.0-115			1.47	20
Ethene	127	141	143	111	113	85.0-115			1.41	20



Method Blank (MB)

(MB) R3470534-3 11/10/19 21:17

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3470534-3 11/10/19 21:17

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	109			80.0-120
(S) 4-Bromofluorobenzene	110			77.0-126
(S) 1,2-Dichloroethane-d4	113			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3470534-2 11/10/19 18:51

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Acetone	25.0	18.2	72.8	19.0-160	
Acrylonitrile	25.0	22.8	91.2	55.0-149	
Benzene	5.00	4.82	96.4	70.0-123	
Bromobenzene	5.00	3.71	74.2	73.0-121	
Bromodichloromethane	5.00	5.42	108	75.0-120	
Bromochloromethane	5.00	5.71	114	76.0-122	
Bromoform	5.00	6.10	122	68.0-132	
Bromomethane	5.00	5.61	112	10.0-160	
n-Butylbenzene	5.00	3.99	79.8	73.0-125	
sec-Butylbenzene	5.00	4.11	82.2	75.0-125	
tert-Butylbenzene	5.00	4.71	94.2	76.0-124	
Carbon disulfide	5.00	4.74	94.8	61.0-128	
Carbon tetrachloride	5.00	6.62	132	68.0-126	J4
Chlorobenzene	5.00	5.08	102	80.0-121	
Chlorodibromomethane	5.00	6.03	121	77.0-125	
Chloroethane	5.00	5.06	101	47.0-150	
Chloroform	5.00	5.12	102	73.0-120	
Chloromethane	5.00	4.86	97.2	41.0-142	
2-Chlorotoluene	5.00	4.09	81.8	76.0-123	
4-Chlorotoluene	5.00	4.15	83.0	75.0-122	
1,2-Dibromo-3-Chloropropane	5.00	4.35	87.0	58.0-134	
1,2-Dibromoethane	5.00	4.89	97.8	80.0-122	
Dibromomethane	5.00	5.81	116	80.0-120	
1,2-Dichlorobenzene	5.00	5.01	100	79.0-121	
1,3-Dichlorobenzene	5.00	4.77	95.4	79.0-120	
1,4-Dichlorobenzene	5.00	4.42	88.4	79.0-120	
Dichlorodifluoromethane	5.00	5.67	113	51.0-149	
1,1-Dichloroethane	5.00	5.14	103	70.0-126	
1,2-Dichloroethane	5.00	5.47	109	70.0-128	
1,1-Dichloroethene	5.00	5.58	112	71.0-124	
cis-1,2-Dichloroethene	5.00	5.06	101	73.0-120	
trans-1,2-Dichloroethene	5.00	5.27	105	73.0-120	
1,2-Dichloropropane	5.00	4.75	95.0	77.0-125	
1,1-Dichloropropene	5.00	5.27	105	74.0-126	
1,3-Dichloropropane	5.00	4.77	95.4	80.0-120	
cis-1,3-Dichloropropene	5.00	5.02	100	80.0-123	
trans-1,3-Dichloropropene	5.00	4.95	99.0	78.0-124	
trans-1,4-Dichloro-2-butene	5.00	3.46	69.2	33.0-144	
2,2-Dichloropropane	5.00	4.76	95.2	58.0-130	
Di-isopropyl ether	5.00	4.66	93.2	58.0-138	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3470534-2 11/10/19 18:51

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Ethylbenzene	5.00	4.92	98.4	79.0-123	
Hexachloro-1,3-butadiene	5.00	4.71	94.2	54.0-138	
2-Hexanone	25.0	21.4	85.6	67.0-149	
n-Hexane	5.00	4.29	85.8	57.0-133	
Iodomethane	25.0	31.2	125	33.0-147	
Isopropylbenzene	5.00	5.23	105	76.0-127	
p-Isopropyltoluene	5.00	4.39	87.8	76.0-125	
2-Butanone (MEK)	25.0	22.7	90.8	44.0-160	
Methylene Chloride	5.00	4.95	99.0	67.0-120	
4-Methyl-2-pentanone (MIBK)	25.0	22.1	88.4	68.0-142	
Methyl tert-butyl ether	5.00	5.53	111	68.0-125	
Naphthalene	5.00	3.85	77.0	54.0-135	
n-Propylbenzene	5.00	3.96	79.2	77.0-124	
Styrene	5.00	5.13	103	73.0-130	
1,1,1,2-Tetrachloroethane	5.00	5.87	117	75.0-125	
1,1,2,2-Tetrachloroethane	5.00	3.31	66.2	65.0-130	
1,1,2-Trichlorotrifluoroethane	5.00	5.57	111	69.0-132	
Tetrachloroethene	5.00	5.57	111	72.0-132	
Toluene	5.00	4.91	98.2	79.0-120	
1,2,3-Trichlorobenzene	5.00	4.49	89.8	50.0-138	
1,2,4-Trichlorobenzene	5.00	4.49	89.8	57.0-137	
1,1,1-Trichloroethane	5.00	6.14	123	73.0-124	
1,1,2-Trichloroethane	5.00	5.02	100	80.0-120	
Trichloroethene	5.00	6.24	125	78.0-124	<u>J4</u>
Trichlorofluoromethane	5.00	6.03	121	59.0-147	
1,2,3-Trichloropropane	5.00	4.55	91.0	73.0-130	
1,2,4-Trimethylbenzene	5.00	4.13	82.6	76.0-121	
1,2,3-Trimethylbenzene	5.00	4.15	83.0	77.0-120	
1,3,5-Trimethylbenzene	5.00	4.19	83.8	76.0-122	
Vinyl acetate	25.0	12.3	49.2	11.0-160	
Vinyl chloride	5.00	4.98	99.6	67.0-131	
Xylenes, Total	15.0	15.2	101	79.0-123	
(S) Toluene-d8			104	80.0-120	
(S) 4-Bromofluorobenzene			108	77.0-126	
(S) 1,2-Dichloroethane-d4			115	70.0-130	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration method criteria.
J4	The associated batch QC was outside the established quality control range for accuracy.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

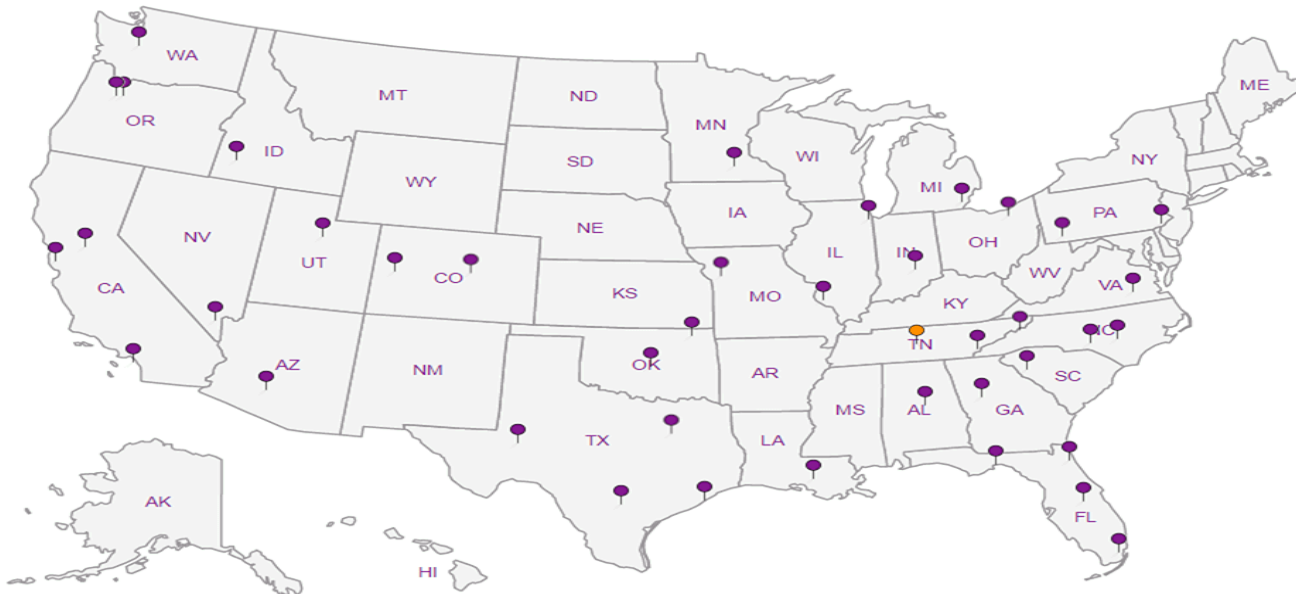
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.





CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

Company: PES Environmental, Inc

Address: 1215 4th Ave, STE 1350 Seattle, WA 98161

Report To: Bill Haldeman/Brian O'Neal

Copy To: Kim Vik, Shannon McKernan, Karsten Springstead

Customer Project Name/Number:
American Linen 1413.001.02.501E

Phone: (206) 529-3980
Email: mjoiner@pesenv.com

Collected By (print): Chris DeBoer

Collected By (signature): *Chris DeBoer*

Sample Disposal:
[] Dispose as appropriate [] Return
[] Archive:
[] Hold:

Rush:
[] Same Day [] Next Day
[] 2 Day [] 3 Day [] 4 Day [] 5 Day
(Expedite Charges Apply)

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Billing Information:
Attn: Accounts Payable 1215 4th Ave STE 1350, Seattle, WA 98161

Email To: bhaldeman@pesenv.com, boneal@pesenv.com

Site Collection Info/Address:
700 Dexter Ave N

State: WA / County/City: King / Seattle
Time Zone Collected: PT [] MT [] CT [] ET

Compliance Monitoring?
[x] Yes [] No

DW PWS ID #:
DW Location Code:

Immediately Packed on Ice:
[x] Yes [] No

Field Filtered (if applicable):
[] Yes [] No

Analysis:

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Container Preservative Type ** Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

Analyses

Analyses	Container Preservative Type **
NO3, SO4, Cl 125mlHDPE-NoPres	
X Alkalinity 125mlHDPE-NoPres	
X EEM RSK175LL 40mlAmb-HCl	
X TOC 250mlAmb-HCL or 250mlHDPE-HCl 2	
X Total Fe, Mn, 6020 250HDPE-HNO3 2	
X VOCs 8260LLC 40mlAmb-Hcl	

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips:	
Sample pH Acceptable	Y N NA
pH Strips:	
Sulfide Present	Y N NA
Lead Acetate Strips:	

LAB USE ONLY:
Lab Sample # / Comments: L1156445

RAD SCREEN: <0.5 mR/hr

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Composite End		Res Cl	# of Ctns
			Date	Time	Date	Time		
FMW-143-103119	GW	Grab	10/31/19	1605				12

Customer Remarks / Special Conditions / Possible Hazards: Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #:

Samples received via: FEDEX UPS Client Courier Pace Courier

E200

Lab Sample Temperature Info:

Temp Blank Received: Y N NA
Therm ID#: 16
Cooler 1 Temp Upon Receipt: 4.9 oC
Cooler 1 Therm Corr. Factor: -1 oC
Cooler 1 Corrected Temp: 4.9 oC
Comments: AL

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO
Page: of:

Relinquished by/Company: (Signature) Date/Time: 10/31/19 1300

Relinquished by/Company: (Signature) Date/Time:

Relinquished by/Company: (Signature) Date/Time:

Received by/Company: (Signature) Date/Time:

Received by/Company: (Signature) Date/Time:

Received by/Company: (Signature) Date/Time: 11/2/19 9:15

Acctnum: Template: Prelogin:

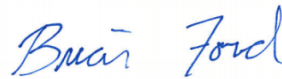
PM: PB:

Acctnum: Template: Prelogin: PM: PB:

PES Environmental, Inc.- WA

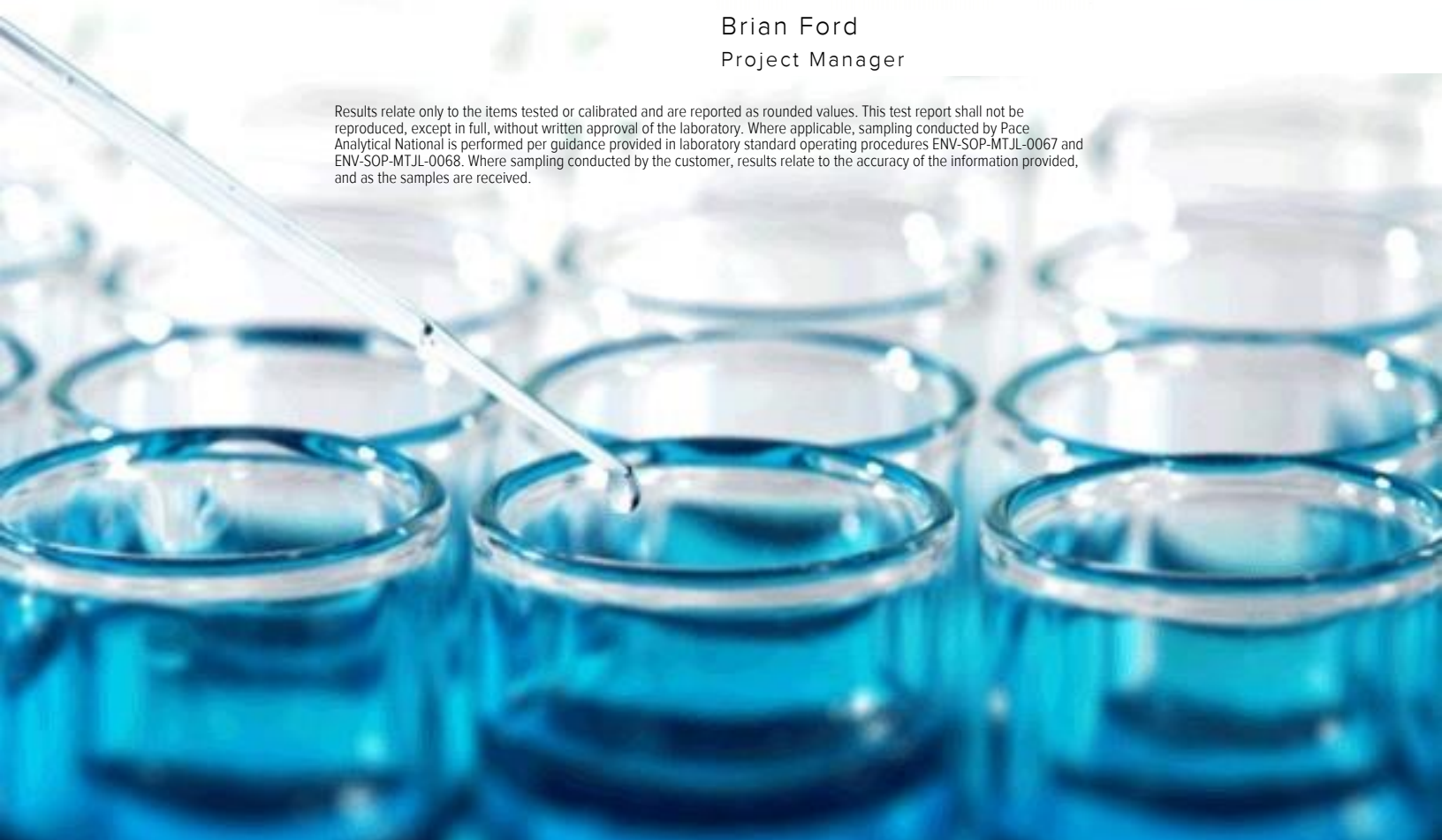
Sample Delivery Group: L1158143
Samples Received: 11/07/2019
Project Number: 1413.001.02.501E
Description: American Linen
Site: 1413.001.02.501E
Report To: Brian O'Neal/Bill Haldeman
1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Entire Report Reviewed By:









Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





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SAMPLE SUMMARY

FMW-137-110619 L1158143-01 GW

Collected by	Collected date/time	Received date/time
Karsten Springstead	11/06/19 06:05	11/07/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1379400	1	11/14/19 02:40	11/14/19 02:40	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1376795	1	11/08/19 01:15	11/08/19 01:15	JD	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1378047	1	11/10/19 05:44	11/10/19 05:44	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1377945	1	11/09/19 16:00	11/10/19 22:05	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1378445	1	11/11/19 14:38	11/11/19 14:38	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1381516	1	11/16/19 01:30	11/16/19 01:30	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1382748	1	11/19/19 15:21	11/19/19 15:21	JHH	Mt. Juliet, TN

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	408000		2710	20000	1	11/14/2019 02:40	WG1379400

Sample Narrative:

L1158143-01 WG1379400: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	24300		51.9	1000	1	11/08/2019 01:15	WG1376795
Nitrate	33.1	<u>B J</u>	22.7	100	1	11/08/2019 01:15	WG1376795
Sulfate	37000		77.4	5000	1	11/08/2019 01:15	WG1376795

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	3200		102	1000	1	11/10/2019 05:44	WG1378047

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	400		15.0	100	1	11/10/2019 22:05	WG1377945
Manganese	2670		0.250	5.00	1	11/10/2019 22:05	WG1377945

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	U		0.287	0.678	1	11/11/2019 14:38	WG1378445
Ethane	U		0.296	1.29	1	11/11/2019 14:38	WG1378445
Ethene	U		0.422	1.27	1	11/11/2019 14:38	WG1378445

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.32	<u>B J</u>	1.05	25.0	1	11/16/2019 01:30	WG1381516
Acrylonitrile	U		0.873	5.00	1	11/16/2019 01:30	WG1381516
Benzene	U		0.0896	0.500	1	11/16/2019 01:30	WG1381516
Bromobenzene	U		0.133	0.500	1	11/16/2019 01:30	WG1381516
Bromodichloromethane	U		0.0800	0.500	1	11/16/2019 01:30	WG1381516
Bromochloromethane	U		0.145	0.500	1	11/16/2019 01:30	WG1381516
Bromoform	U		0.186	0.500	1	11/16/2019 01:30	WG1381516
Bromomethane	U		0.157	2.50	1	11/19/2019 15:21	WG1382748
n-Butylbenzene	U		0.143	0.500	1	11/16/2019 01:30	WG1381516
sec-Butylbenzene	U		0.134	0.500	1	11/16/2019 01:30	WG1381516
tert-Butylbenzene	U		0.183	0.500	1	11/16/2019 01:30	WG1381516
Carbon disulfide	0.990		0.101	0.500	1	11/16/2019 01:30	WG1381516
Carbon tetrachloride	U		0.159	0.500	1	11/16/2019 01:30	WG1381516
Chlorobenzene	U		0.140	0.500	1	11/16/2019 01:30	WG1381516
Chlorodibromomethane	U		0.128	0.500	1	11/16/2019 01:30	WG1381516
Chloroethane	U		0.141	2.50	1	11/16/2019 01:30	WG1381516
Chloroform	U		0.0860	0.500	1	11/16/2019 01:30	WG1381516
Chloromethane	U		0.153	1.25	1	11/16/2019 01:30	WG1381516
2-Chlorotoluene	U		0.111	0.500	1	11/16/2019 01:30	WG1381516
4-Chlorotoluene	U		0.0972	0.500	1	11/16/2019 01:30	WG1381516

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/16/2019 01:30	WG1381516
1,2-Dibromoethane	U		0.193	0.500	1	11/16/2019 01:30	WG1381516
Dibromomethane	U		0.117	0.500	1	11/16/2019 01:30	WG1381516
1,2-Dichlorobenzene	U		0.101	0.500	1	11/16/2019 01:30	WG1381516
1,3-Dichlorobenzene	U		0.130	0.500	1	11/16/2019 01:30	WG1381516
1,4-Dichlorobenzene	U		0.121	0.500	1	11/16/2019 01:30	WG1381516
Dichlorodifluoromethane	U		0.127	2.50	1	11/16/2019 01:30	WG1381516
1,1-Dichloroethane	U		0.114	0.500	1	11/16/2019 01:30	WG1381516
1,2-Dichloroethane	U		0.108	0.500	1	11/16/2019 01:30	WG1381516
1,1-Dichloroethene	U		0.188	0.500	1	11/16/2019 01:30	WG1381516
cis-1,2-Dichloroethene	1.27		0.0933	0.500	1	11/19/2019 15:21	WG1382748
trans-1,2-Dichloroethene	U		0.152	0.500	1	11/19/2019 15:21	WG1382748
1,2-Dichloropropane	U		0.190	0.500	1	11/16/2019 01:30	WG1381516
1,1-Dichloropropene	U		0.128	0.500	1	11/16/2019 01:30	WG1381516
1,3-Dichloropropane	U		0.147	1.00	1	11/16/2019 01:30	WG1381516
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/16/2019 01:30	WG1381516
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/16/2019 01:30	WG1381516
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	11/16/2019 01:30	WG1381516
2,2-Dichloropropane	U		0.0929	0.500	1	11/16/2019 01:30	WG1381516
Di-isopropyl ether	U		0.0924	0.500	1	11/16/2019 01:30	WG1381516
Ethylbenzene	U		0.158	0.500	1	11/16/2019 01:30	WG1381516
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/16/2019 01:30	WG1381516
2-Hexanone	U		0.757	5.00	1	11/16/2019 01:30	WG1381516
n-Hexane	U		0.305	5.00	1	11/16/2019 01:30	WG1381516
Iodomethane	U	JO	0.377	10.0	1	11/16/2019 01:30	WG1381516
Isopropylbenzene	U		0.126	0.500	1	11/16/2019 01:30	WG1381516
p-Isopropyltoluene	U		0.138	0.500	1	11/16/2019 01:30	WG1381516
2-Butanone (MEK)	U		1.28	5.00	1	11/16/2019 01:30	WG1381516
Methylene Chloride	U		1.07	2.50	1	11/16/2019 01:30	WG1381516
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/16/2019 01:30	WG1381516
Methyl tert-butyl ether	U		0.102	0.500	1	11/16/2019 01:30	WG1381516
Naphthalene	U		0.174	2.50	1	11/16/2019 01:30	WG1381516
n-Propylbenzene	U		0.162	0.500	1	11/16/2019 01:30	WG1381516
Styrene	U		0.117	0.500	1	11/16/2019 01:30	WG1381516
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/16/2019 01:30	WG1381516
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/16/2019 01:30	WG1381516
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/16/2019 01:30	WG1381516
Tetrachloroethene	U		0.199	0.500	1	11/19/2019 15:21	WG1382748
Toluene	U		0.412	0.500	1	11/16/2019 01:30	WG1381516
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/16/2019 01:30	WG1381516
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/16/2019 01:30	WG1381516
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/16/2019 01:30	WG1381516
1,1,2-Trichloroethane	U		0.186	0.500	1	11/16/2019 01:30	WG1381516
Trichloroethene	U		0.153	0.500	1	11/19/2019 15:21	WG1382748
Trichlorofluoromethane	U		0.130	2.50	1	11/16/2019 01:30	WG1381516
1,2,3-Trichloropropane	U	JO	0.247	2.50	1	11/19/2019 15:21	WG1382748
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/16/2019 01:30	WG1381516
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/16/2019 01:30	WG1381516
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/16/2019 01:30	WG1381516
Vinyl acetate	U		0.645	5.00	1	11/16/2019 01:30	WG1381516
Vinyl chloride	U		0.118	0.500	1	11/19/2019 15:21	WG1382748
Xylenes, Total	U		0.316	1.50	1	11/16/2019 01:30	WG1381516
(S) Toluene-d8	98.4			80.0-120		11/16/2019 01:30	WG1381516
(S) Toluene-d8	109			80.0-120		11/19/2019 15:21	WG1382748
(S) 4-Bromofluorobenzene	96.1			77.0-126		11/16/2019 01:30	WG1381516
(S) 4-Bromofluorobenzene	106			77.0-126		11/19/2019 15:21	WG1382748

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	98.4			70.0-130		11/16/2019 01:30	WG1381516
(S) 1,2-Dichloroethane-d4	115			70.0-130		11/19/2019 15:21	WG1382748

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3471760-1 11/13/19 23:16

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	4200	↓	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1158107-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1158107-01 11/13/19 23:30 • (DUP) R3471760-2 11/13/19 23:39

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	222000	221000	1	0.503		20

Sample Narrative:

OS: Endpoint pH 4.5
DUP: Endpoint pH 4.5

L1158133-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1158133-05 11/14/19 02:09 • (DUP) R3471760-4 11/14/19 02:16

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	1180000	1180000	1	0.113		20

Sample Narrative:

OS: Endpoint pH 4.5
DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3471760-3 11/14/19 00:38

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	101000	101	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3469886-1 11/07/19 12:05

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	131	↓	51.9	1000
Nitrate	30.1	↓	22.7	100
Sulfate	221	↓	77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1158126-19 Original Sample (OS) • Duplicate (DUP)

(OS) L1158126-19 11/07/19 18:29 • (DUP) R3469886-6 11/07/19 18:43

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	157000	159000	5	1.39		15
Nitrate	22900	23200	5	1.06		15
Sulfate	218000	223000	5	2.14		15

L1158135-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1158135-01 11/07/19 23:57 • (DUP) R3469886-7 11/08/19 00:10

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	12400	12000	1	3.64		15
Nitrate	7180	6830	1	4.89		15
Sulfate	14700	14300	1	3.10		15

Laboratory Control Sample (LCS)

(LCS) R3469886-2 11/07/19 12:18

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39100	97.7	80.0-120	
Nitrate	8000	8040	100	80.0-120	
Sulfate	40000	39400	98.4	80.0-120	



L1158135-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1158135-01 11/07/19 23:57 • (MS) R3469886-8 11/08/19 00:23

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	12400	61600	98.2	1	80.0-120	
Nitrate	5000	7180	11500	87.2	1	80.0-120	E
Sulfate	50000	14700	63200	97.0	1	80.0-120	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3470339-1 11/09/19 19:32

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	296	↓	102	1000

1 Cp

2 Tc

3 Ss

L1158107-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1158107-03 11/09/19 22:11 • (DUP) R3470339-3 11/09/19 22:29

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC	ND	735	1	0.000		20

4 Cn

5 Sr

Laboratory Control Sample (LCS)

(LCS) R3470339-2 11/09/19 20:15

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC	75000	80200	107	85.0-115	

6 Qc

7 Gl

L1158114-27 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1158114-27 11/10/19 00:33 • (MS) R3470339-4 11/10/19 00:55 • (MSD) R3470339-5 11/10/19 01:18

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC	50000	11100	63800	66100	105	110	1	80.0-120			3.51	20

8 Al

9 Sc

L1158145-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1158145-01 11/10/19 06:04 • (MS) R3470339-7 11/10/19 10:53 • (MSD) R3470339-8 11/10/19 11:16

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC	50000	2790	58000	58900	110	112	1	80.0-120			1.56	20



Method Blank (MB)

(MB) R3470422-1 11/10/19 19:41

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Iron	U		15.0	100
Manganese	0.736	J	0.250	5.00

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3470422-2 11/10/19 19:45 • (LCSD) R3470422-3 11/10/19 19:48

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Iron	5000	4770	4560	95.3	91.3	80.0-120			4.36	20
Manganese	50.0	48.1	48.6	96.1	97.2	80.0-120			1.13	20

5 Sr

6 Qc

L1155666-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1155666-01 11/10/19 19:52 • (MS) R3470422-5 11/10/19 19:59 • (MSD) R3470422-6 11/10/19 20:02

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Iron	5000	123	4880	4790	95.2	93.3	1	75.0-125			1.89	20
Manganese	50.0	13.4	60.1	59.8	93.5	92.8	1	75.0-125			0.572	20

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3470714-1 11/11/19 13:51

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

L1158126-24 Original Sample (OS) • Duplicate (DUP)

(OS) L1158126-24 11/11/19 14:01 • (DUP) R3470714-2 11/11/19 14:49

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	ND	0.000	1	0.000		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3470714-3 11/11/19 15:47 • (LCSD) R3470714-4 11/11/19 16:02

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	76.1	77.3	112	114	85.0-115			1.56	20
Ethane	129	138	134	107	104	85.0-115			2.94	20
Ethene	127	144	140	113	110	85.0-115			2.82	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3473319-3 11/15/19 22:11

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	1.05	U	1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3473319-3 11/15/19 22:11

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
Toluene	U		0.412	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,2,4-Trimethylbenzene	U		0.123	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	97.2			80.0-120
(S) 4-Bromofluorobenzene	101			77.0-126
(S) 1,2-Dichloroethane-d4	99.4			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3473319-1 11/15/19 21:11 • (LCSD) R3473319-2 11/15/19 21:31

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	25.0	22.3	21.4	89.2	85.6	19.0-160			4.12	27
Acrylonitrile	25.0	22.3	22.6	89.2	90.4	55.0-149			1.34	20
Benzene	5.00	4.33	4.40	86.6	88.0	70.0-123			1.60	20
Bromobenzene	5.00	4.62	4.72	92.4	94.4	73.0-121			2.14	20
Bromodichloromethane	5.00	4.34	4.48	86.8	89.6	75.0-120			3.17	20



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3473319-1 11/15/19 21:11 • (LCSD) R3473319-2 11/15/19 21:31

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Bromochloromethane	5.00	4.41	5.06	88.2	101	76.0-122			13.7	20
Bromoform	5.00	4.06	3.92	81.2	78.4	68.0-132			3.51	20
n-Butylbenzene	5.00	4.72	5.05	94.4	101	73.0-125			6.76	20
sec-Butylbenzene	5.00	4.60	4.78	92.0	95.6	75.0-125			3.84	20
tert-Butylbenzene	5.00	4.50	4.36	90.0	87.2	76.0-124			3.16	20
Carbon disulfide	5.00	4.68	4.66	93.6	93.2	61.0-128			0.428	20
Carbon tetrachloride	5.00	4.82	4.72	96.4	94.4	68.0-126			2.10	20
Chlorobenzene	5.00	4.83	4.70	96.6	94.0	80.0-121			2.73	20
Chlorodibromomethane	5.00	4.39	4.37	87.8	87.4	77.0-125			0.457	20
Chloroethane	5.00	5.10	4.69	102	93.8	47.0-150			8.38	20
Chloroform	5.00	4.35	4.39	87.0	87.8	73.0-120			0.915	20
Chloromethane	5.00	4.07	4.25	81.4	85.0	41.0-142			4.33	20
2-Chlorotoluene	5.00	4.72	4.73	94.4	94.6	76.0-123			0.212	20
4-Chlorotoluene	5.00	4.67	4.75	93.4	95.0	75.0-122			1.70	20
1,2-Dibromo-3-Chloropropane	5.00	4.04	3.71	80.8	74.2	58.0-134			8.52	20
1,2-Dibromoethane	5.00	4.64	4.69	92.8	93.8	80.0-122			1.07	20
Dibromomethane	5.00	4.74	4.86	94.8	97.2	80.0-120			2.50	20
1,2-Dichlorobenzene	5.00	4.75	5.00	95.0	100	79.0-121			5.13	20
1,3-Dichlorobenzene	5.00	4.99	4.98	99.8	99.6	79.0-120			0.201	20
1,4-Dichlorobenzene	5.00	5.06	5.19	101	104	79.0-120			2.54	20
trans-1,4-Dichloro-2-butene	5.00	3.92	3.49	78.4	69.8	33.0-144			11.6	20
Dichlorodifluoromethane	5.00	5.45	5.58	109	112	51.0-149			2.36	20
1,1-Dichloroethane	5.00	4.37	4.65	87.4	93.0	70.0-126			6.21	20
1,2-Dichloroethane	5.00	4.45	4.44	89.0	88.8	70.0-128			0.225	20
1,1-Dichloroethene	5.00	4.76	4.91	95.2	98.2	71.0-124			3.10	20
1,2-Dichloropropane	5.00	4.36	4.23	87.2	84.6	77.0-125			3.03	20
1,1-Dichloropropene	5.00	4.89	4.84	97.8	96.8	74.0-126			1.03	20
1,3-Dichloropropane	5.00	4.68	4.60	93.6	92.0	80.0-120			1.72	20
cis-1,3-Dichloropropene	5.00	4.32	4.59	86.4	91.8	80.0-123			6.06	20
trans-1,3-Dichloropropene	5.00	4.77	4.59	95.4	91.8	78.0-124			3.85	20
2,2-Dichloropropane	5.00	4.68	4.50	93.6	90.0	58.0-130			3.92	20
Di-isopropyl ether	5.00	4.55	4.60	91.0	92.0	58.0-138			1.09	20
Ethylbenzene	5.00	4.42	4.50	88.4	90.0	79.0-123			1.79	20
Hexachloro-1,3-butadiene	5.00	5.12	4.49	102	89.8	54.0-138			13.1	20
2-Hexanone	25.0	22.3	21.2	89.2	84.8	67.0-149			5.06	20
n-Hexane	5.00	4.95	5.01	99.0	100	57.0-133			1.20	20
Iodomethane	25.0	19.8	22.7	79.2	90.8	33.0-147			13.6	26
Isopropylbenzene	5.00	4.47	4.54	89.4	90.8	76.0-127			1.55	20
p-Isopropyltoluene	5.00	4.59	4.52	91.8	90.4	76.0-125			1.54	20
2-Butanone (MEK)	25.0	23.5	21.8	94.0	87.2	44.0-160			7.51	20

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3473319-1 11/15/19 21:11 • (LCSD) R3473319-2 11/15/19 21:31

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Methylene Chloride	5.00	4.43	4.36	88.6	87.2	67.0-120			1.59	20
4-Methyl-2-pentanone (MIBK)	25.0	22.3	21.0	89.2	84.0	68.0-142			6.00	20
Methyl tert-butyl ether	5.00	4.50	4.58	90.0	91.6	68.0-125			1.76	20
Naphthalene	5.00	4.36	4.06	87.2	81.2	54.0-135			7.13	20
n-Propylbenzene	5.00	4.52	4.75	90.4	95.0	77.0-124			4.96	20
Styrene	5.00	4.72	4.67	94.4	93.4	73.0-130			1.06	20
1,1,1,2-Tetrachloroethane	5.00	4.54	4.63	90.8	92.6	75.0-125			1.96	20
1,1,2,2-Tetrachloroethane	5.00	4.55	4.28	91.0	85.6	65.0-130			6.12	20
Toluene	5.00	4.49	4.67	89.8	93.4	79.0-120			3.93	20
1,1,2-Trichlorotrifluoroethane	5.00	5.25	5.47	105	109	69.0-132			4.10	20
1,2,3-Trichlorobenzene	5.00	4.67	4.48	93.4	89.6	50.0-138			4.15	20
1,2,4-Trichlorobenzene	5.00	5.40	5.44	108	109	57.0-137			0.738	20
1,1,1-Trichloroethane	5.00	4.73	4.84	94.6	96.8	73.0-124			2.30	20
1,1,2-Trichloroethane	5.00	4.80	4.68	96.0	93.6	80.0-120			2.53	20
Trichlorofluoromethane	5.00	5.30	5.22	106	104	59.0-147			1.52	20
1,2,3-Trimethylbenzene	5.00	4.85	4.73	97.0	94.6	77.0-120			2.51	20
1,2,4-Trimethylbenzene	5.00	4.62	4.82	92.4	96.4	76.0-121			4.24	20
1,3,5-Trimethylbenzene	5.00	4.77	4.60	95.4	92.0	76.0-122			3.63	20
Vinyl acetate	25.0	20.5	19.4	82.0	77.6	11.0-160			5.51	20
Xylenes, Total	15.0	14.0	13.8	93.3	92.0	79.0-123			1.44	20
(S) Toluene-d8				99.2	96.6	80.0-120				
(S) 4-Bromofluorobenzene				103	97.5	77.0-126				
(S) 1,2-Dichloroethane-d4				97.1	97.3	70.0-130				

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3473794-4 11/19/19 10:30

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Bromomethane	U		0.157	2.50
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
Tetrachloroethene	U		0.199	0.500
Trichloroethene	U		0.153	0.500
1,2,3-Trichloropropane	U		0.247	2.50
Vinyl chloride	U		0.118	0.500
(S) Toluene-d8	112			80.0-120
(S) 4-Bromofluorobenzene	112			77.0-126
(S) 1,2-Dichloroethane-d4	111			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3473794-1 11/19/19 09:08 • (LCSD) R3473794-2 11/19/19 09:29

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Bromomethane	5.00	5.27	5.07	105	101	10.0-160			3.87	25
cis-1,2-Dichloroethene	5.00	5.12	4.61	102	92.2	73.0-120			10.5	20
trans-1,2-Dichloroethene	5.00	4.99	4.45	99.8	89.0	73.0-120			11.4	20
Tetrachloroethene	5.00	5.55	5.47	111	109	72.0-132			1.45	20
Trichloroethene	5.00	5.49	5.33	110	107	78.0-124			2.96	20
1,2,3-Trichloropropane	5.00	3.78	4.02	75.6	80.4	73.0-130			6.15	20
Vinyl chloride	5.00	4.88	4.77	97.6	95.4	67.0-131			2.28	20
(S) Toluene-d8				107	108	80.0-120				
(S) 4-Bromofluorobenzene				110	112	77.0-126				
(S) 1,2-Dichloroethane-d4				114	112	70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration method criteria.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

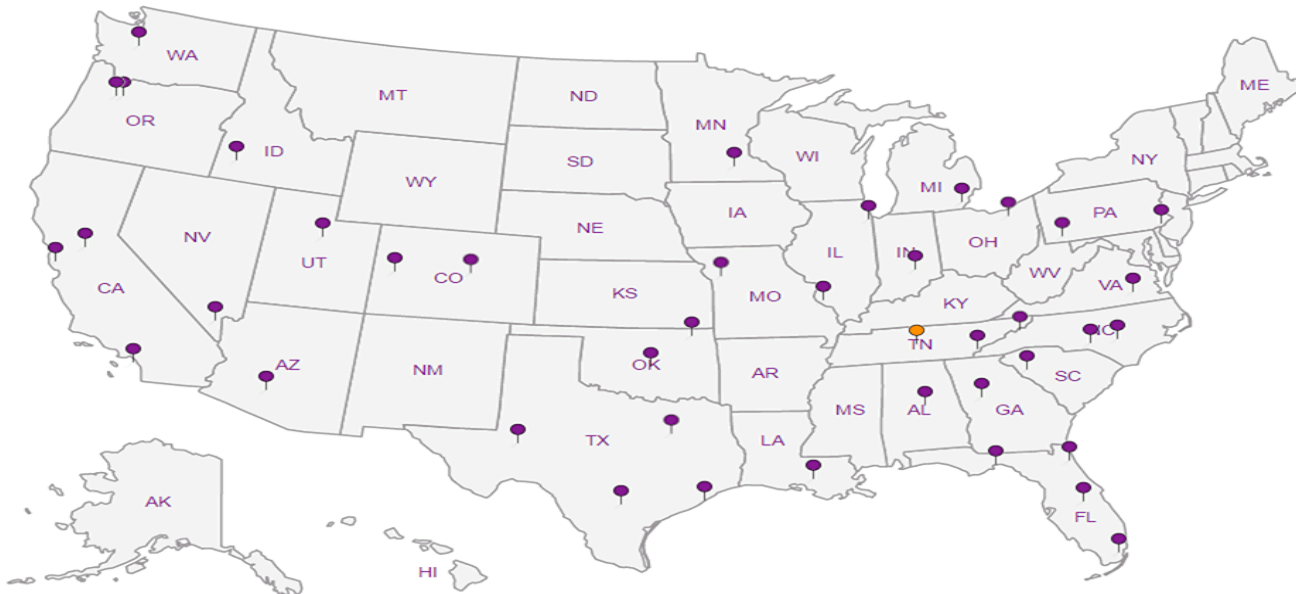
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: PES Environmental, Inc. Billing Information: Attn: Accounts Payable 1215 4th Ave STE 1350, Seattle, WA 98161

Address: 1215 4th Ave STE 1350, Seattle, WA 98161

Report To: Bill Haldeman/Brian O'Neal Email To: bhaldeman@pesenv.com; boneal@pesenv.com

Copy To: Kim Vik, Shannon McKernan, Karsten Springstead Site Collection Info/Address: 700 Dexter Ave N

Container Preservative Type ** Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

Customer Project Name/Number: American Linen 1413.001.02.501E State: WA / County/City: King/Seattle [x] PT [] MT [] CT [] ET

Phone: 206-529-3980 Email: mjoiner@pesenv.com Site/Facility ID #: 1413.001.02.501E Compliance Monitoring? [x] Yes [] No

Collected By (print): Karsten Springstead Purchase Order #: PESENVSWA-ALP DW PWS ID #: DW Location Code: Quote #: STANDARD Immediately Packed on Ice: [x] Yes [] No

Collected By (signature): Sample Disposal: [] Dispose as appropriate [] Return [] Archive: [] Hold: [] Rush: [] Same Day [] Next Day [] 2 Day [] 3 Day [] 4 Day [] 5 Day (Expedite Charges Apply) Field Filtered (if applicable): [] Yes [] No Analysis:

Analyses

NO3, SO4, Cl	125mlHDPE-NoPres	Alkalinity	125mlHDPE-NoPres	EEM RSK175LL 40mlAmb-HCl	TOC 250mlAmb-HCl or 250mlHDPE-HCl	Total Fe, Mn 6020 250mlHDPE-HNO3	VOCs 8260LLC 40mlAmb-HCl
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Lab Profile/Line: Lab Sample Receipt Checklist: Custody Seals Present/Intact Y N NA Custody Signatures Present Y N NA Collector Signature Present N NA Bottles Intact N NA Correct Bottles N NA Sufficient Volume N NA Samples Received on Ice N NA VOA - Headspace Acceptable N NA USDA Regulated Soils Y N NA Samples in Holding Time Y N NA Residual Chlorine Present Y N NA Cl Strips: Sample pH Acceptable N NA pH Strips: Sulfide Present Y N NA Lead Acetate Strips:

LAB USE ONLY: Lab Sample # / Comments: L1158143 -01

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Composite End		Res Cl	# of Ctns
			Date	Time	Date	Time		
FWW-137-110619	GW	Grab	11-6-19	605			-	9

Customer Remarks / Special Conditions / Possible Hazards:	Type of Ice Used: Wet Blue Dry None	SHORT HOLDS PRESENT (<72 hours): Y N N/A	LAB Sample Temperature Info: Temp Blank Received: Y N NA Therm ID#: Cooler 1 Temp Upon Receipt: 27°C Cooler 1 Therm Corr. Factor: -1.0°C Cooler 1 Corrected Temp: 25.9°C Comments:
	Packing Material Used:	Lab Tracking #: 120357840133	
	Radchem sample(s) screened (<500 cpm): Y N NA	Samples received via: FEDEX UPS Client Courier Pace Courier	

Relinquished by/Company: (Signature) Date/Time: 11-6-19/630 Received by/Company: (Signature) Date/Time: 11/7/19 5:30

Relinquished by/Company: (Signature) Date/Time: Received by/Company: (Signature) Date/Time:

Relinquished by/Company: (Signature) Date/Time: Received by/Company: (Signature) Date/Time:

D007

Trips Blank Received: Y N NA HCL MeOH TSP Other

Non Conformance(s): YES / NO Page: of:

PES Environmental, Inc.- WA

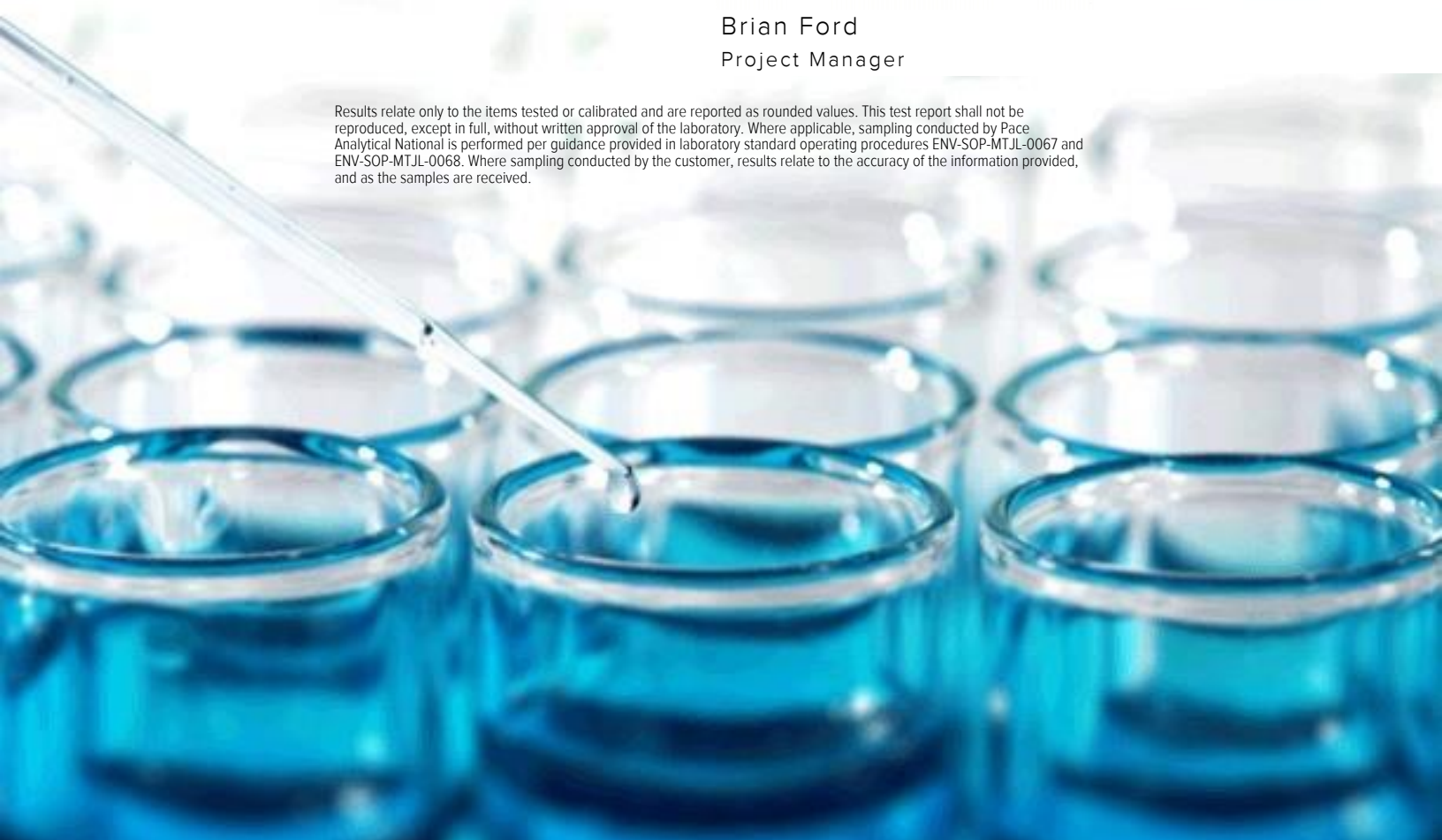
Sample Delivery Group: L1161106
Samples Received: 11/15/2019
Project Number: 1413.001.02.501E
Description: American Linen
Site: AMERICAN LINEN
Report To: Brian O'Neal/Bill Haldeman
1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





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Tc: Table of Contents	2	2 Tc
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Gl: Glossary of Terms	20	9 Sc
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SAMPLE SUMMARY

MW102-111419 L1161106-01 GW

Collected by Hannah Cohen
 Collected date/time 11/14/19 10:45
 Received date/time 11/15/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1384195	1	11/21/19 14:32	11/21/19 14:32	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1381079	1	11/15/19 17:07	11/15/19 17:07	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1382360	1	11/19/19 03:34	11/19/19 03:34	EEM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1381630	1	11/16/19 10:14	11/16/19 14:53	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1383395	1	11/20/19 08:45	11/20/19 08:45	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1383583	1	11/20/19 11:40	11/20/19 11:40	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1385753	1	11/23/19 01:56	11/23/19 01:56	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1386329	1	11/24/19 11:49	11/24/19 11:49	ACG	Mt. Juliet, TN

- 1
Cp
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Tc
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Ss
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Cn
- 5
Sr
- 6
Qc
- 7
Gl
- 8
Al
- 9
Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	176000		2710	20000	1	11/21/2019 14:32	WG1384195

Sample Narrative:

L1161106-01 WG1384195: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	8170		51.9	1000	1	11/15/2019 17:07	WG1381079
Nitrate	161	P1	22.7	100	1	11/15/2019 17:07	WG1381079
Sulfate	2570	J	77.4	5000	1	11/15/2019 17:07	WG1381079

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	4190		102	1000	1	11/19/2019 03:34	WG1382360

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	4010		15.0	100	1	11/16/2019 14:53	WG1381630
Manganese	329		0.250	5.00	1	11/16/2019 14:53	WG1381630

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	11/20/2019 08:45	WG1383395
(S) a,a,a-Trifluorotoluene(FID)	106			78.0-120		11/20/2019 08:45	WG1383395

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	224		0.287	0.678	1	11/20/2019 11:40	WG1383583
Ethane	U		0.296	1.29	1	11/20/2019 11:40	WG1383583
Ethene	U		0.422	1.27	1	11/20/2019 11:40	WG1383583

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	1.19	J	1.05	25.0	1	11/24/2019 11:49	WG1386329
Acrylonitrile	U		0.873	5.00	1	11/23/2019 01:56	WG1385753
Benzene	U		0.0896	0.500	1	11/23/2019 01:56	WG1385753
Bromobenzene	U		0.133	0.500	1	11/23/2019 01:56	WG1385753
Bromodichloromethane	U		0.0800	0.500	1	11/23/2019 01:56	WG1385753
Bromochloromethane	U		0.145	0.500	1	11/23/2019 01:56	WG1385753
Bromoform	U		0.186	0.500	1	11/23/2019 01:56	WG1385753
Bromomethane	U	JO	0.157	2.50	1	11/23/2019 01:56	WG1385753
n-Butylbenzene	U		0.143	0.500	1	11/23/2019 01:56	WG1385753
sec-Butylbenzene	U		0.134	0.500	1	11/23/2019 01:56	WG1385753
tert-Butylbenzene	U		0.183	0.500	1	11/23/2019 01:56	WG1385753
Carbon disulfide	U		0.101	0.500	1	11/23/2019 01:56	WG1385753
Carbon tetrachloride	U		0.159	0.500	1	11/23/2019 01:56	WG1385753

1 Cp

2 Tc

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9 Sc



Collected date/time: 11/14/19 10:45

L1161106

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/23/2019 01:56	WG1385753
Chlorodibromomethane	U		0.128	0.500	1	11/23/2019 01:56	WG1385753
Chloroethane	U		0.141	2.50	1	11/23/2019 01:56	WG1385753
Chloroform	U		0.0860	0.500	1	11/23/2019 01:56	WG1385753
Chloromethane	U		0.153	1.25	1	11/23/2019 01:56	WG1385753
2-Chlorotoluene	U		0.111	0.500	1	11/23/2019 01:56	WG1385753
4-Chlorotoluene	U		0.0972	0.500	1	11/23/2019 01:56	WG1385753
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/23/2019 01:56	WG1385753
1,2-Dibromoethane	U		0.193	0.500	1	11/23/2019 01:56	WG1385753
Dibromomethane	U		0.117	0.500	1	11/23/2019 01:56	WG1385753
1,2-Dichlorobenzene	U		0.101	0.500	1	11/23/2019 01:56	WG1385753
1,3-Dichlorobenzene	U		0.130	0.500	1	11/23/2019 01:56	WG1385753
1,4-Dichlorobenzene	U		0.121	0.500	1	11/23/2019 01:56	WG1385753
Dichlorodifluoromethane	U		0.127	2.50	1	11/23/2019 01:56	WG1385753
1,1-Dichloroethane	U		0.114	0.500	1	11/23/2019 01:56	WG1385753
1,2-Dichloroethane	U		0.108	0.500	1	11/23/2019 01:56	WG1385753
1,1-Dichloroethene	U		0.188	0.500	1	11/23/2019 01:56	WG1385753
cis-1,2-Dichloroethene	U		0.0933	0.500	1	11/23/2019 01:56	WG1385753
trans-1,2-Dichloroethene	U		0.152	0.500	1	11/23/2019 01:56	WG1385753
1,2-Dichloropropane	U		0.190	0.500	1	11/23/2019 01:56	WG1385753
1,1-Dichloropropene	U		0.128	0.500	1	11/23/2019 01:56	WG1385753
1,3-Dichloropropane	U		0.147	1.00	1	11/23/2019 01:56	WG1385753
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/23/2019 01:56	WG1385753
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/23/2019 01:56	WG1385753
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	11/23/2019 01:56	WG1385753
2,2-Dichloropropane	U		0.0929	0.500	1	11/23/2019 01:56	WG1385753
Di-isopropyl ether	U		0.0924	0.500	1	11/23/2019 01:56	WG1385753
Ethylbenzene	U		0.158	0.500	1	11/23/2019 01:56	WG1385753
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/23/2019 01:56	WG1385753
2-Hexanone	U		0.757	5.00	1	11/23/2019 01:56	WG1385753
n-Hexane	U		0.305	5.00	1	11/23/2019 01:56	WG1385753
Iodomethane	U	JO	0.377	10.0	1	11/23/2019 01:56	WG1385753
Isopropylbenzene	U		0.126	0.500	1	11/23/2019 01:56	WG1385753
p-Isopropyltoluene	U		0.138	0.500	1	11/23/2019 01:56	WG1385753
2-Butanone (MEK)	U		1.28	5.00	1	11/23/2019 01:56	WG1385753
Methylene Chloride	U		1.07	2.50	1	11/23/2019 01:56	WG1385753
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/23/2019 01:56	WG1385753
Methyl tert-butyl ether	U		0.102	0.500	1	11/23/2019 01:56	WG1385753
Naphthalene	U		0.174	2.50	1	11/23/2019 01:56	WG1385753
n-Propylbenzene	U		0.162	0.500	1	11/23/2019 01:56	WG1385753
Styrene	U		0.117	0.500	1	11/23/2019 01:56	WG1385753
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/23/2019 01:56	WG1385753
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/23/2019 01:56	WG1385753
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/23/2019 01:56	WG1385753
Tetrachloroethene	U		0.199	0.500	1	11/23/2019 01:56	WG1385753
Toluene	U		0.412	0.500	1	11/23/2019 01:56	WG1385753
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/23/2019 01:56	WG1385753
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/23/2019 01:56	WG1385753
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/23/2019 01:56	WG1385753
1,1,2-Trichloroethane	U		0.186	0.500	1	11/23/2019 01:56	WG1385753
Trichloroethene	U		0.153	0.500	1	11/23/2019 01:56	WG1385753
Trichlorofluoromethane	U		0.130	2.50	1	11/23/2019 01:56	WG1385753
1,2,3-Trichloropropane	U		0.247	2.50	1	11/23/2019 01:56	WG1385753
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/23/2019 01:56	WG1385753
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/23/2019 01:56	WG1385753
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/23/2019 01:56	WG1385753

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	11/23/2019 01:56	WG1385753
Vinyl chloride	U		0.118	0.500	1	11/23/2019 01:56	WG1385753
Xylenes, Total	U		0.316	1.50	1	11/23/2019 01:56	WG1385753
(S) Toluene-d8	90.2			80.0-120		11/23/2019 01:56	WG1385753
(S) Toluene-d8	87.9			80.0-120		11/24/2019 11:49	WG1386329
(S) 4-Bromofluorobenzene	93.4			77.0-126		11/23/2019 01:56	WG1385753
(S) 4-Bromofluorobenzene	95.6			77.0-126		11/24/2019 11:49	WG1386329
(S) 1,2-Dichloroethane-d4	90.6			70.0-130		11/23/2019 01:56	WG1385753
(S) 1,2-Dichloroethane-d4	117			70.0-130		11/24/2019 11:49	WG1386329

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3474875-1 11/21/19 13:48

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	8120	↓	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1160584-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1160584-01 11/21/19 14:10 • (DUP) R3474875-2 11/21/19 14:22

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	68700	71200	1	3.55		20

Sample Narrative:

OS: Endpoint pH 4.5
DUP: Endpoint pH 4.5

L1161135-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1161135-01 11/21/19 16:03 • (DUP) R3474875-4 11/21/19 16:11

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	316000	316000	1	0.0209		20

Sample Narrative:

OS: Endpoint pH 4.5 HEADSPACE
DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3474875-3 11/21/19 15:21

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	99000	99.0	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3472603-1 11/15/19 16:11

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Chloride	U		51.9	1000
Nitrate	U		22.7	100
Sulfate	U		77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1161106-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1161106-01 11/15/19 17:07 • (DUP) R3472603-3 11/15/19 17:24

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	8170	8060	1	1.36		15
Nitrate	161	133	1	19.5	P1	15
Sulfate	2570	2430	1	5.81	J	15

L1161161-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1161161-02 11/15/19 21:54 • (DUP) R3472603-6 11/15/19 22:10

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	430000	430000	1	0.00365	E	15
Nitrate	245	259	1	5.55		15
Sulfate	11200	11200	1	0.101		15

Laboratory Control Sample (LCS)

(LCS) R3472603-2 11/15/19 16:27

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Chloride	40000	39100	97.8	80.0-120	
Nitrate	8000	8110	101	80.0-120	
Sulfate	40000	39400	98.4	80.0-120	



[L1161106-01](#)

L1161157-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1161157-01 11/15/19 20:18 • (MS) R3472603-4 11/15/19 20:34 • (MSD) R3472603-5 11/15/19 20:50

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	8210	57800	57500	99.2	98.6	1	80.0-120			0.519	15
Nitrate	5000	2570	7510	7680	98.8	102	1	80.0-120			2.26	15
Sulfate	50000	50100	98800	98800	97.4	97.3	1	80.0-120			0.0738	15

L1161161-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1161161-03 11/15/19 22:57 • (MS) R3472603-7 11/15/19 23:13

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	331000	365000	67.1	1	80.0-120	<u>EV</u>
Nitrate	5000	197	5040	96.8	1	80.0-120	
Sulfate	50000	11900	62000	100	1	80.0-120	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3473520-1 11/18/19 20:36

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	242	↓	102	1000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1160695-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1160695-08 11/19/19 01:15 • (DUP) R3473520-6 11/19/19 01:31

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	ND	742	1	6.24	↓	20

L1161108-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1161108-04 11/19/19 04:34 • (DUP) R3473520-7 11/19/19 04:48

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	5650	5670	1	0.389		20

Laboratory Control Sample (LCS)

(LCS) R3473520-2 11/18/19 21:07

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC (Total Organic Carbon)	75000	75300	100	85.0-115	

L1160577-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1160577-02 11/18/19 21:21 • (MS) R3473520-3 11/18/19 21:38 • (MSD) R3473520-8 11/18/19 21:56

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	ND	51100	50700	101	101	1	80.0-120			0.668	20

L1160584-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1160584-01 11/18/19 22:47 • (MS) R3473520-4 11/19/19 00:08 • (MSD) R3473520-5 11/19/19 00:24

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	1680	51800	51400	100	99.5	1	80.0-120			0.736	20



Method Blank (MB)

(MB) R3472691-1 11/16/19 14:01

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Iron	U		15.0	100
Manganese	0.438	<u>J</u>	0.250	5.00

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3472691-2 11/16/19 14:04 • (LCSD) R3472691-3 11/16/19 14:08

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Iron	5000	5010	4900	100	98.0	80.0-120			2.12	20
Manganese	50.0	49.7	47.9	99.4	95.7	80.0-120			3.71	20

5 Sr

6 Qc

L1161396-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1161396-03 11/16/19 14:12 • (MS) R3472691-5 11/16/19 14:19 • (MSD) R3472691-6 11/16/19 14:23

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Iron	5000	3470	8250	8820	95.5	107	1	75.0-125			6.70	20
Manganese	50.0	3120	3150	3220	40.7	181	1	75.0-125	<u>V</u>	<u>V</u>	2.21	20

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3474256-2 11/20/19 00:36

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	106			78.0-120

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS)

(LCS) R3474256-1 11/19/19 22:33

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5070	92.2	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			90.8	78.0-120	

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3474091-1 11/20/19 10:37

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

L1161021-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1161021-01 11/20/19 10:42 • (DUP) R3474091-2 11/20/19 11:19

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	173	172	1	0.580		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

L1161021-14 Original Sample (OS) • Duplicate (DUP)

(OS) L1161021-14 11/20/19 11:38 • (DUP) R3474091-3 11/20/19 13:04

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	18.2	17.6	1	3.35		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3474091-4 11/20/19 13:07 • (LCSD) R3474091-5 11/20/19 13:11

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	64.6	64.7	95.3	95.4	85.0-115			0.155	20
Ethane	129	121	120	93.8	93.0	85.0-115			0.830	20
Ethene	127	116	115	91.3	90.6	85.0-115			0.866	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3475511-2 11/22/19 22:33

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500
Ethylbenzene	U		0.158	0.500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3475511-2 11/22/19 22:33

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,2,4-Trimethylbenzene	U		0.123	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	90.1			80.0-120
(S) 4-Bromofluorobenzene	92.3			77.0-126
(S) 1,2-Dichloroethane-d4	91.6			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3475511-1 11/22/19 21:54

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Acrylonitrile	25.0	26.5	106	55.0-149	
Benzene	5.00	4.70	94.0	70.0-123	
Bromobenzene	5.00	4.36	87.2	73.0-121	
Bromodichloromethane	5.00	4.54	90.8	75.0-120	
Bromochloromethane	5.00	5.23	105	76.0-122	
Bromoform	5.00	4.52	90.4	68.0-132	
Bromomethane	5.00	1.80	36.0	10.0-160	
n-Butylbenzene	5.00	4.12	82.4	73.0-125	
sec-Butylbenzene	5.00	4.17	83.4	75.0-125	
tert-Butylbenzene	5.00	4.24	84.8	76.0-124	
Carbon disulfide	5.00	4.60	92.0	61.0-128	
Carbon tetrachloride	5.00	4.62	92.4	68.0-126	
Chlorobenzene	5.00	4.63	92.6	80.0-121	
Chlorodibromomethane	5.00	4.26	85.2	77.0-125	
Chloroethane	5.00	4.55	91.0	47.0-150	
Chloroform	5.00	4.59	91.8	73.0-120	
Chloromethane	5.00	3.94	78.8	41.0-142	
2-Chlorotoluene	5.00	4.29	85.8	76.0-123	
4-Chlorotoluene	5.00	4.21	84.2	75.0-122	
1,2-Dibromo-3-Chloropropane	5.00	4.84	96.8	58.0-134	
1,2-Dibromoethane	5.00	4.86	97.2	80.0-122	
Dibromomethane	5.00	4.92	98.4	80.0-120	
1,2-Dichlorobenzene	5.00	4.31	86.2	79.0-121	
1,3-Dichlorobenzene	5.00	4.61	92.2	79.0-120	
1,4-Dichlorobenzene	5.00	4.39	87.8	79.0-120	
trans-1,4-Dichloro-2-butene	5.00	4.03	80.6	33.0-144	
Dichlorodifluoromethane	5.00	6.63	133	51.0-149	
1,1-Dichloroethane	5.00	4.57	91.4	70.0-126	
1,2-Dichloroethane	5.00	4.87	97.4	70.0-128	
1,1-Dichloroethene	5.00	4.81	96.2	71.0-124	
cis-1,2-Dichloroethene	5.00	5.04	101	73.0-120	
trans-1,2-Dichloroethene	5.00	4.45	89.0	73.0-120	
1,2-Dichloropropane	5.00	4.56	91.2	77.0-125	
1,1-Dichloropropene	5.00	4.57	91.4	74.0-126	
1,3-Dichloropropane	5.00	4.81	96.2	80.0-120	
cis-1,3-Dichloropropene	5.00	4.42	88.4	80.0-123	
trans-1,3-Dichloropropene	5.00	4.48	89.6	78.0-124	
2,2-Dichloropropane	5.00	4.47	89.4	58.0-130	
Di-isopropyl ether	5.00	4.72	94.4	58.0-138	
Ethylbenzene	5.00	4.35	87.0	79.0-123	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3475511-1 11/22/19 21:54

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Hexachloro-1,3-butadiene	5.00	3.77	75.4	54.0-138	
2-Hexanone	25.0	25.4	102	67.0-149	
n-Hexane	5.00	4.34	86.8	57.0-133	
Iodomethane	25.0	13.8	55.2	33.0-147	
Isopropylbenzene	5.00	4.47	89.4	76.0-127	
p-Isopropyltoluene	5.00	4.20	84.0	76.0-125	
2-Butanone (MEK)	25.0	27.4	110	44.0-160	
Methylene Chloride	5.00	4.85	97.0	67.0-120	
4-Methyl-2-pentanone (MIBK)	25.0	23.5	94.0	68.0-142	
Methyl tert-butyl ether	5.00	5.05	101	68.0-125	
Naphthalene	5.00	4.56	91.2	54.0-135	
n-Propylbenzene	5.00	4.25	85.0	77.0-124	
Styrene	5.00	4.47	89.4	73.0-130	
1,1,1,2-Tetrachloroethane	5.00	4.35	87.0	75.0-125	
1,1,2,2-Tetrachloroethane	5.00	4.41	88.2	65.0-130	
Tetrachloroethene	5.00	4.39	87.8	72.0-132	
Toluene	5.00	4.28	85.6	79.0-120	
1,1,2-Trichlorotrifluoroethane	5.00	5.27	105	69.0-132	
1,2,3-Trichlorobenzene	5.00	4.26	85.2	50.0-138	
1,2,4-Trichlorobenzene	5.00	4.22	84.4	57.0-137	
1,1,1-Trichloroethane	5.00	4.92	98.4	73.0-124	
1,1,2-Trichloroethane	5.00	4.93	98.6	80.0-120	
Trichloroethene	5.00	4.95	99.0	78.0-124	
Trichlorofluoromethane	5.00	4.92	98.4	59.0-147	
1,2,3-Trichloropropane	5.00	4.98	99.6	73.0-130	
1,2,3-Trimethylbenzene	5.00	4.32	86.4	77.0-120	
1,2,4-Trimethylbenzene	5.00	4.35	87.0	76.0-121	
1,3,5-Trimethylbenzene	5.00	4.29	85.8	76.0-122	
Vinyl acetate	25.0	19.9	79.6	11.0-160	
Vinyl chloride	5.00	4.36	87.2	67.0-131	
Xylenes, Total	15.0	13.1	87.3	79.0-123	
(S) Toluene-d8			90.5	80.0-120	
(S) 4-Bromofluorobenzene			98.3	77.0-126	
(S) 1,2-Dichloroethane-d4			93.7	70.0-130	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3475890-3 11/24/19 10:04

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
(S) Toluene-d8	91.4			80.0-120
(S) 4-Bromofluorobenzene	94.8			77.0-126
(S) 1,2-Dichloroethane-d4	115			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3475890-1 11/24/19 09:03 • (LCSD) R3475890-2 11/24/19 09:24

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	25.0	20.7	21.8	82.8	87.2	19.0-160			5.18	27
(S) Toluene-d8				91.7	85.0	80.0-120				
(S) 4-Bromofluorobenzene				107	91.9	77.0-126				
(S) 1,2-Dichloroethane-d4				112	113	70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration method criteria.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
V	The sample concentration is too high to evaluate accurate spike recoveries.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

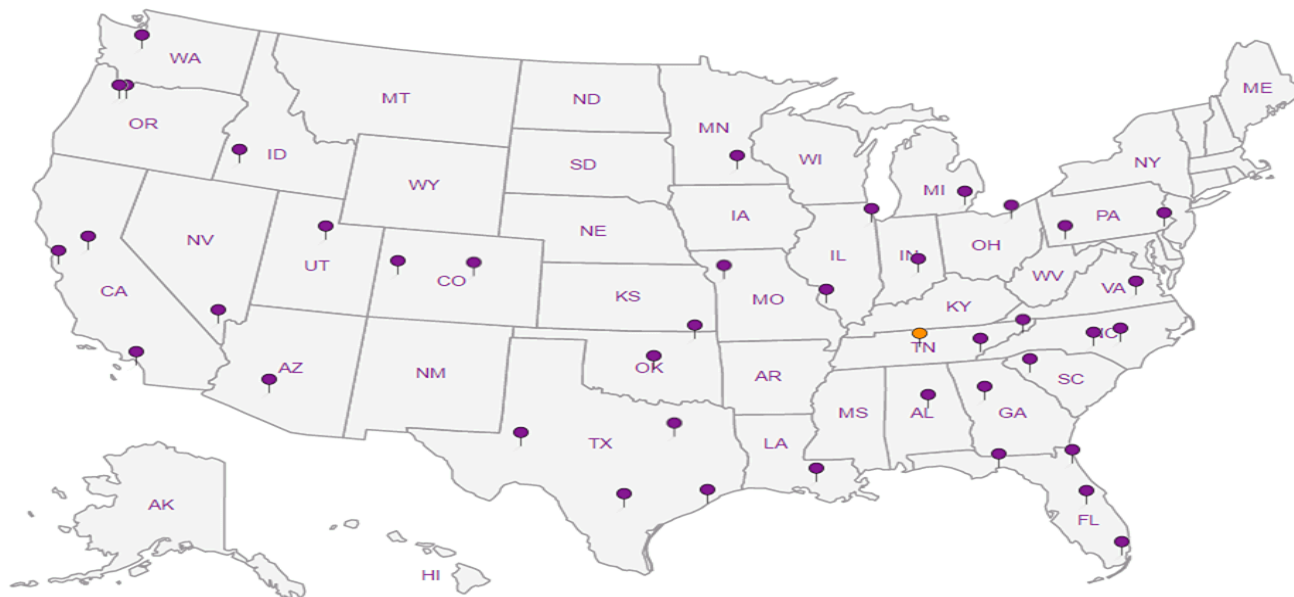
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

PES-Seattle
 Billing Information: PES-Seattle
 Analysis / Container / Preservative
 Chain of Custody Page 1 of 1
 Pace Analytical
 National Center for Testing & Innovation

Report to: Bill Haldeman/Brian O'neal
 Email To: on file
 Project Description: American Liner
 City/State: Seattle, WA
 Collected: 11/14/19

Phone: on file
 Client Project #: 1413.001.02.501E
 Lab Project #: PESENVSWA-ALP
 P.O. #
 Quote #

Collected by (print): Hannah Cohen
 Site/Facility ID #: American Liner
 Rush? (Lab MUST Be Notified)
 ___ Same Day ___ Five Day
 ___ Next Day ___ 5 Day (Rad Only)
 ___ Two Day ___ 10 Day (Rad Only)
 ___ Three Day

Collected by (signature): Hannah Cohen
 Immediately Packed on Ice N ___ Y

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	**NO3, SO4, Chloride**48 hour hold	NWTPHGX	VOCs (V8260LLC)	Total Fe Mn 6020	TOC	Alkalinity	EEM (RSK175LL)
-----------	-----------	----------	-------	------	------	--------------	------------------------------------	---------	-----------------	------------------	-----	------------	----------------

MW102-111419	Grab	GW	120'	11/14/19	1045	12	X	X	X	X	X	X	X
		GW											
		GW											
		GW											
		GW											
		GW											
		GW											
		GW											
		GW											

* Matrix: SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other
 Remarks:
 Samples returned via: UPS FedEx Courier
 Tracking # 1145 2231 0202
 pH _____ Temp _____
 Flow _____ Other _____

Sample Receipt Checklist
 COC Seal Present/intact: NP Y ___ N ___
 COC Signed/Accurate: Y ___ N ___
 Bottles arrive intact: Y ___ N ___
 Correct bottles used: Y ___ N ___
 Sufficient volume sent: Y ___ N ___
 If Applicable
 VOA Zero Headspace: Y ___ N ___
 Preservation Correct/Checked: Y ___ N ___
 RAD SCREEN: <0.5 mP/hr

Relinquished by: (Signature) Hannah Cohen
 Date: 11/14/19
 Time: 1200
 Received by: (Signature)
 Trip Blank Received: Yes (No) HCL / MeOH TBR

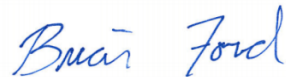
Relinquished by: (Signature)
 Date:
 Time:
 Received by: (Signature)
 Temp: °C 0.8-2.0
 Bottles Received: 12
 If preservation required by Login: Date/Time

Relinquished by: (Signature)
 Date:
 Time:
 Received for lab by: (Signature)
 Date: 11/15/19
 Time: 8:30
 Hold:
 Condition: NCF / OK

PES Environmental, Inc.- WA

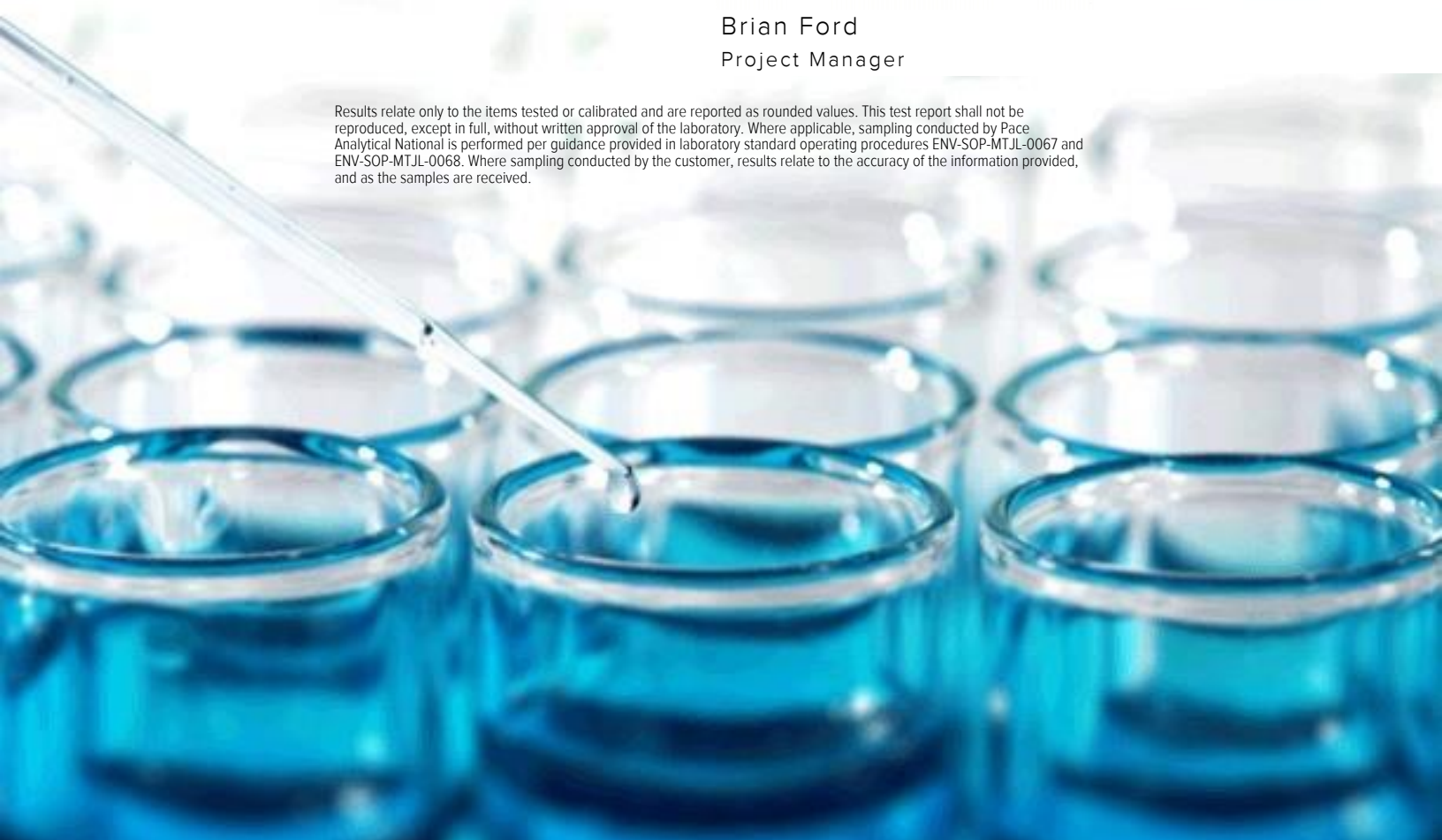
Sample Delivery Group: L1171422
Samples Received: 12/17/2019
Project Number: 1413.001.02.501E
Description: American Linen Supply
Site: AMERICAN LINEN
Report To: Brian O'Neal/Bill Haldeman
1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





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MW-144R-121619 L1171422-02	8	4 Cn
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SAMPLE SUMMARY



MW-145R-121619 L1171422-01 GW

Collected by
Hannah Cohen
Collected date/time
12/16/19 11:45
Received date/time
12/17/19 11:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1397937	1	12/17/19 20:16	12/17/19 20:16	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1397791	1	12/17/19 14:26	12/17/19 14:26	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1398101	1	12/17/19 17:50	12/17/19 17:50	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1398362	1	12/18/19 08:27	12/18/19 10:59	TM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1398191	1	12/18/19 01:11	12/18/19 01:11	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1400030	1	12/20/19 16:12	12/20/19 16:12	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1398295	1	12/18/19 06:20	12/18/19 06:20	ACG	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

MW-144R-121619 L1171422-02 GW

Collected by
Hannah Cohen
Collected date/time
12/16/19 13:20
Received date/time
12/17/19 11:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1397937	1	12/17/19 20:25	12/17/19 20:25	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1397791	1	12/17/19 14:38	12/17/19 14:38	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1398101	1	12/17/19 18:19	12/17/19 18:19	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1398362	1	12/18/19 08:27	12/18/19 11:09	TM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1398191	1	12/18/19 01:32	12/18/19 01:32	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1400030	1	12/20/19 16:14	12/20/19 16:14	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1400614	10	12/21/19 09:03	12/21/19 09:03	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1398295	1	12/18/19 06:40	12/18/19 06:40	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1398556	10	12/18/19 15:30	12/18/19 15:30	KMC	Mt. Juliet, TN

6
Qc

7
Gl

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Al

9
Sc

EQ-121619 L1171422-03 GW

Collected by
Hannah Cohen
Collected date/time
12/16/19 14:10
Received date/time
12/17/19 11:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1397937	1	12/17/19 20:33	12/17/19 20:33	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1397791	1	12/17/19 15:01	12/17/19 15:01	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1398101	1	12/17/19 18:32	12/17/19 18:32	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1398362	1	12/18/19 08:27	12/18/19 11:13	TM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1399030	1	12/18/19 17:56	12/18/19 17:56	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1400030	1	12/20/19 16:19	12/20/19 16:19	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1398295	1	12/18/19 07:00	12/18/19 07:00	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1398556	1	12/18/19 15:50	12/18/19 15:50	KMC	Mt. Juliet, TN

TRIP BLANK-121619 L1171422-04 GW

Collected by
Hannah Cohen
Collected date/time
12/16/19 00:00
Received date/time
12/17/19 11:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1398191	1	12/17/19 21:35	12/17/19 21:35	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1398295	1	12/18/19 05:19	12/18/19 05:19	ACG	Mt. Juliet, TN



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	258000		2710	20000	1	12/17/2019 20:16	WG1397937

Sample Narrative:

L1171422-01 WG1397937: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	20100		51.9	1000	1	12/17/2019 14:26	WG1397791
Nitrate	U		22.7	100	1	12/17/2019 14:26	WG1397791
Sulfate	16600		77.4	5000	1	12/17/2019 14:26	WG1397791

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	4120		102	1000	1	12/17/2019 17:50	WG1398101

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	1220		15.0	100	1	12/18/2019 10:59	WG1398362
Manganese	256		0.250	5.00	1	12/18/2019 10:59	WG1398362

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	140	<u>B</u>	31.6	100	1	12/18/2019 01:11	WG1398191
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	97.6			78.0-120		12/18/2019 01:11	WG1398191

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	272		0.287	0.678	1	12/20/2019 16:12	WG1400030
Ethane	U		0.296	1.29	1	12/20/2019 16:12	WG1400030
Ethene	U		0.422	1.27	1	12/20/2019 16:12	WG1400030

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	1.35	<u>J</u>	1.05	25.0	1	12/18/2019 06:20	WG1398295
Acrylonitrile	U		0.873	5.00	1	12/18/2019 06:20	WG1398295
Benzene	U		0.0896	0.500	1	12/18/2019 06:20	WG1398295
Bromobenzene	U		0.133	0.500	1	12/18/2019 06:20	WG1398295
Bromodichloromethane	U		0.0800	0.500	1	12/18/2019 06:20	WG1398295
Bromochloromethane	U		0.145	0.500	1	12/18/2019 06:20	WG1398295
Bromoform	U		0.186	0.500	1	12/18/2019 06:20	WG1398295
Bromomethane	U		0.157	2.50	1	12/18/2019 06:20	WG1398295
n-Butylbenzene	U		0.143	0.500	1	12/18/2019 06:20	WG1398295
sec-Butylbenzene	U		0.134	0.500	1	12/18/2019 06:20	WG1398295
tert-Butylbenzene	U		0.183	0.500	1	12/18/2019 06:20	WG1398295
Carbon disulfide	U		0.101	0.500	1	12/18/2019 06:20	WG1398295
Carbon tetrachloride	U		0.159	0.500	1	12/18/2019 06:20	WG1398295

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	12/18/2019 06:20	WG1398295
Chlorodibromomethane	U		0.128	0.500	1	12/18/2019 06:20	WG1398295
Chloroethane	U		0.141	2.50	1	12/18/2019 06:20	WG1398295
Chloroform	U		0.0860	0.500	1	12/18/2019 06:20	WG1398295
Chloromethane	U		0.153	1.25	1	12/18/2019 06:20	WG1398295
2-Chlorotoluene	U		0.111	0.500	1	12/18/2019 06:20	WG1398295
4-Chlorotoluene	U		0.0972	0.500	1	12/18/2019 06:20	WG1398295
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	12/18/2019 06:20	WG1398295
1,2-Dibromoethane	U		0.193	0.500	1	12/18/2019 06:20	WG1398295
Dibromomethane	U		0.117	0.500	1	12/18/2019 06:20	WG1398295
1,2-Dichlorobenzene	U		0.101	0.500	1	12/18/2019 06:20	WG1398295
1,3-Dichlorobenzene	U		0.130	0.500	1	12/18/2019 06:20	WG1398295
1,4-Dichlorobenzene	U		0.121	0.500	1	12/18/2019 06:20	WG1398295
Dichlorodifluoromethane	U		0.127	2.50	1	12/18/2019 06:20	WG1398295
1,1-Dichloroethane	U		0.114	0.500	1	12/18/2019 06:20	WG1398295
1,2-Dichloroethane	U		0.108	0.500	1	12/18/2019 06:20	WG1398295
1,1-Dichloroethene	U		0.188	0.500	1	12/18/2019 06:20	WG1398295
cis-1,2-Dichloroethene	0.193	U	0.0933	0.500	1	12/18/2019 06:20	WG1398295
trans-1,2-Dichloroethene	U		0.152	0.500	1	12/18/2019 06:20	WG1398295
1,2-Dichloropropane	U		0.190	0.500	1	12/18/2019 06:20	WG1398295
1,1-Dichloropropene	U		0.128	0.500	1	12/18/2019 06:20	WG1398295
1,3-Dichloropropane	U		0.147	1.00	1	12/18/2019 06:20	WG1398295
cis-1,3-Dichloropropene	U		0.0976	0.500	1	12/18/2019 06:20	WG1398295
trans-1,3-Dichloropropene	U		0.222	0.500	1	12/18/2019 06:20	WG1398295
trans-1,4-Dichloro-2-butene	U	U	0.257	5.00	1	12/18/2019 06:20	WG1398295
2,2-Dichloropropane	U		0.0929	0.500	1	12/18/2019 06:20	WG1398295
Di-isopropyl ether	U		0.0924	0.500	1	12/18/2019 06:20	WG1398295
Ethylbenzene	U		0.158	0.500	1	12/18/2019 06:20	WG1398295
Hexachloro-1,3-butadiene	U		0.157	1.00	1	12/18/2019 06:20	WG1398295
2-Hexanone	U		0.757	5.00	1	12/18/2019 06:20	WG1398295
n-Hexane	U		0.305	5.00	1	12/18/2019 06:20	WG1398295
Iodomethane	U		0.377	10.0	1	12/18/2019 06:20	WG1398295
Isopropylbenzene	U		0.126	0.500	1	12/18/2019 06:20	WG1398295
p-Isopropyltoluene	U		0.138	0.500	1	12/18/2019 06:20	WG1398295
2-Butanone (MEK)	U		1.28	5.00	1	12/18/2019 06:20	WG1398295
Methylene Chloride	U		1.07	2.50	1	12/18/2019 06:20	WG1398295
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	12/18/2019 06:20	WG1398295
Methyl tert-butyl ether	U		0.102	0.500	1	12/18/2019 06:20	WG1398295
Naphthalene	U		0.174	2.50	1	12/18/2019 06:20	WG1398295
n-Propylbenzene	U		0.162	0.500	1	12/18/2019 06:20	WG1398295
Styrene	U		0.117	0.500	1	12/18/2019 06:20	WG1398295
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	12/18/2019 06:20	WG1398295
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	12/18/2019 06:20	WG1398295
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	12/18/2019 06:20	WG1398295
Tetrachloroethene	U		0.199	0.500	1	12/18/2019 06:20	WG1398295
Toluene	U		0.412	0.500	1	12/18/2019 06:20	WG1398295
1,2,3-Trichlorobenzene	U		0.164	0.500	1	12/18/2019 06:20	WG1398295
1,2,4-Trichlorobenzene	U		0.355	0.500	1	12/18/2019 06:20	WG1398295
1,1,1-Trichloroethane	U		0.0940	0.500	1	12/18/2019 06:20	WG1398295
1,1,2-Trichloroethane	U		0.186	0.500	1	12/18/2019 06:20	WG1398295
Trichloroethene	U		0.153	0.500	1	12/18/2019 06:20	WG1398295
Trichlorofluoromethane	U		0.130	2.50	1	12/18/2019 06:20	WG1398295
1,2,3-Trichloropropane	U		0.247	2.50	1	12/18/2019 06:20	WG1398295
1,2,4-Trimethylbenzene	U		0.123	0.500	1	12/18/2019 06:20	WG1398295
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	12/18/2019 06:20	WG1398295
1,3,5-Trimethylbenzene	U		0.124	0.500	1	12/18/2019 06:20	WG1398295

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U		0.645	5.00	1	12/18/2019 06:20	WG1398295
Vinyl chloride	U		0.118	0.500	1	12/18/2019 06:20	WG1398295
Xylenes, Total	U		0.316	1.50	1	12/18/2019 06:20	WG1398295
<i>(S) Toluene-d8</i>	108			80.0-120		12/18/2019 06:20	WG1398295
<i>(S) 4-Bromofluorobenzene</i>	103			77.0-126		12/18/2019 06:20	WG1398295
<i>(S) 1,2-Dichloroethane-d4</i>	98.1			70.0-130		12/18/2019 06:20	WG1398295

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	673000		2710	20000	1	12/17/2019 20:25	WG1397937

Sample Narrative:

L1171422-02 WG1397937: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	93100		51.9	1000	1	12/17/2019 14:38	WG1397791
Nitrate	U		22.7	100	1	12/17/2019 14:38	WG1397791
Sulfate	11300		77.4	5000	1	12/17/2019 14:38	WG1397791

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	46500		102	1000	1	12/17/2019 18:19	WG1398101

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	2040		15.0	100	1	12/18/2019 11:09	WG1398362
Manganese	1930		0.250	5.00	1	12/18/2019 11:09	WG1398362

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	325	<u>B</u>	31.6	100	1	12/18/2019 01:32	WG1398191
(S) a,a,a-Trifluorotoluene(FID)	96.8			78.0-120		12/18/2019 01:32	WG1398191

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	8640		2.87	6.78	10	12/21/2019 09:03	WG1400614
Ethane	16.5		0.296	1.29	1	12/20/2019 16:14	WG1400030
Ethene	305		0.422	1.27	1	12/20/2019 16:14	WG1400030

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	3.99	<u>J</u>	1.05	25.0	1	12/18/2019 06:40	WG1398295
Acrylonitrile	U		0.873	5.00	1	12/18/2019 06:40	WG1398295
Benzene	U		0.0896	0.500	1	12/18/2019 06:40	WG1398295
Bromobenzene	U		0.133	0.500	1	12/18/2019 06:40	WG1398295
Bromodichloromethane	U		0.0800	0.500	1	12/18/2019 06:40	WG1398295
Bromochloromethane	U		0.145	0.500	1	12/18/2019 06:40	WG1398295
Bromoform	U		0.186	0.500	1	12/18/2019 06:40	WG1398295
Bromomethane	U		0.157	2.50	1	12/18/2019 06:40	WG1398295
n-Butylbenzene	U		0.143	0.500	1	12/18/2019 06:40	WG1398295
sec-Butylbenzene	U		0.134	0.500	1	12/18/2019 06:40	WG1398295
tert-Butylbenzene	U		0.183	0.500	1	12/18/2019 06:40	WG1398295
Carbon disulfide	0.470	<u>J</u>	0.101	0.500	1	12/18/2019 06:40	WG1398295
Carbon tetrachloride	U		0.159	0.500	1	12/18/2019 06:40	WG1398295

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 12/16/19 13:20

L1171422

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	12/18/2019 06:40	WG1398295
Chlorodibromomethane	U		0.128	0.500	1	12/18/2019 06:40	WG1398295
Chloroethane	U		0.141	2.50	1	12/18/2019 06:40	WG1398295
Chloroform	U		0.0860	0.500	1	12/18/2019 06:40	WG1398295
Chloromethane	U		0.153	1.25	1	12/18/2019 06:40	WG1398295
2-Chlorotoluene	U		0.111	0.500	1	12/18/2019 06:40	WG1398295
4-Chlorotoluene	U		0.0972	0.500	1	12/18/2019 06:40	WG1398295
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	12/18/2019 06:40	WG1398295
1,2-Dibromoethane	U		0.193	0.500	1	12/18/2019 06:40	WG1398295
Dibromomethane	U		0.117	0.500	1	12/18/2019 06:40	WG1398295
1,2-Dichlorobenzene	U		0.101	0.500	1	12/18/2019 06:40	WG1398295
1,3-Dichlorobenzene	U		0.130	0.500	1	12/18/2019 06:40	WG1398295
1,4-Dichlorobenzene	U		0.121	0.500	1	12/18/2019 06:40	WG1398295
Dichlorodifluoromethane	U		0.127	2.50	1	12/18/2019 06:40	WG1398295
1,1-Dichloroethane	U		0.114	0.500	1	12/18/2019 06:40	WG1398295
1,2-Dichloroethane	U		0.108	0.500	1	12/18/2019 06:40	WG1398295
1,1-Dichloroethene	0.589		0.188	0.500	1	12/18/2019 06:40	WG1398295
cis-1,2-Dichloroethene	251		0.933	5.00	10	12/18/2019 15:30	WG1398556
trans-1,2-Dichloroethene	0.818		0.152	0.500	1	12/18/2019 06:40	WG1398295
1,2-Dichloropropane	U		0.190	0.500	1	12/18/2019 06:40	WG1398295
1,1-Dichloropropene	U		0.128	0.500	1	12/18/2019 06:40	WG1398295
1,3-Dichloropropane	U		0.147	1.00	1	12/18/2019 06:40	WG1398295
cis-1,3-Dichloropropene	U		0.0976	0.500	1	12/18/2019 06:40	WG1398295
trans-1,3-Dichloropropene	U		0.222	0.500	1	12/18/2019 06:40	WG1398295
trans-1,4-Dichloro-2-butene	U	<u>JO</u>	0.257	5.00	1	12/18/2019 06:40	WG1398295
2,2-Dichloropropane	U		0.0929	0.500	1	12/18/2019 06:40	WG1398295
Di-isopropyl ether	U		0.0924	0.500	1	12/18/2019 06:40	WG1398295
Ethylbenzene	U		0.158	0.500	1	12/18/2019 06:40	WG1398295
Hexachloro-1,3-butadiene	U		0.157	1.00	1	12/18/2019 06:40	WG1398295
2-Hexanone	U		0.757	5.00	1	12/18/2019 06:40	WG1398295
n-Hexane	U		0.305	5.00	1	12/18/2019 06:40	WG1398295
Iodomethane	U		0.377	10.0	1	12/18/2019 06:40	WG1398295
Isopropylbenzene	U		0.126	0.500	1	12/18/2019 06:40	WG1398295
p-Isopropyltoluene	U		0.138	0.500	1	12/18/2019 06:40	WG1398295
2-Butanone (MEK)	2.23	<u>I</u>	1.28	5.00	1	12/18/2019 06:40	WG1398295
Methylene Chloride	U		1.07	2.50	1	12/18/2019 06:40	WG1398295
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	12/18/2019 06:40	WG1398295
Methyl tert-butyl ether	U		0.102	0.500	1	12/18/2019 06:40	WG1398295
Naphthalene	U		0.174	2.50	1	12/18/2019 06:40	WG1398295
n-Propylbenzene	U		0.162	0.500	1	12/18/2019 06:40	WG1398295
Styrene	U		0.117	0.500	1	12/18/2019 06:40	WG1398295
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	12/18/2019 06:40	WG1398295
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	12/18/2019 06:40	WG1398295
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	12/18/2019 06:40	WG1398295
Tetrachloroethene	11.0		0.199	0.500	1	12/18/2019 06:40	WG1398295
Toluene	U		0.412	0.500	1	12/18/2019 06:40	WG1398295
1,2,3-Trichlorobenzene	U		0.164	0.500	1	12/18/2019 06:40	WG1398295
1,2,4-Trichlorobenzene	U		0.355	0.500	1	12/18/2019 06:40	WG1398295
1,1,1-Trichloroethane	U		0.0940	0.500	1	12/18/2019 06:40	WG1398295
1,1,2-Trichloroethane	U		0.186	0.500	1	12/18/2019 06:40	WG1398295
Trichloroethene	11.5		0.153	0.500	1	12/18/2019 06:40	WG1398295
Trichlorofluoromethane	U		0.130	2.50	1	12/18/2019 06:40	WG1398295
1,2,3-Trichloropropane	U		0.247	2.50	1	12/18/2019 06:40	WG1398295
1,2,4-Trimethylbenzene	U		0.123	0.500	1	12/18/2019 06:40	WG1398295
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	12/18/2019 06:40	WG1398295
1,3,5-Trimethylbenzene	U		0.124	0.500	1	12/18/2019 06:40	WG1398295

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	12/18/2019 06:40	WG1398295
Vinyl chloride	71.6		0.118	0.500	1	12/18/2019 06:40	WG1398295
Xylenes, Total	U		0.316	1.50	1	12/18/2019 06:40	WG1398295
(S) Toluene-d8	110			80.0-120		12/18/2019 06:40	WG1398295
(S) Toluene-d8	106			80.0-120		12/18/2019 15:30	WG1398556
(S) 4-Bromofluorobenzene	105			77.0-126		12/18/2019 06:40	WG1398295
(S) 4-Bromofluorobenzene	97.9			77.0-126		12/18/2019 15:30	WG1398556
(S) 1,2-Dichloroethane-d4	97.8			70.0-130		12/18/2019 06:40	WG1398295
(S) 1,2-Dichloroethane-d4	102			70.0-130		12/18/2019 15:30	WG1398556

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	6460	<u>B</u> J	2710	20000	1	12/17/2019 20:33	WG1397937

Sample Narrative:

L1171422-03 WG1397937: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	U		51.9	1000	1	12/17/2019 15:01	WG1397791
Nitrate	U		22.7	100	1	12/17/2019 15:01	WG1397791
Sulfate	U		77.4	5000	1	12/17/2019 15:01	WG1397791

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	333	<u>B</u> J	102	1000	1	12/17/2019 18:32	WG1398101

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	22.3	<u>J</u>	15.0	100	1	12/18/2019 11:13	WG1398362
Manganese	1.11	<u>B</u> J	0.250	5.00	1	12/18/2019 11:13	WG1398362

Volatile Organic Compounds (GC) by Method NWTPHGX

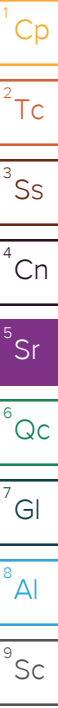
Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	33.3	<u>B</u> J	31.6	100	1	12/18/2019 17:56	WG1399030
(S) a,a,a-Trifluorotoluene(FID)	96.6			78.0-120		12/18/2019 17:56	WG1399030

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	U		0.287	0.678	1	12/20/2019 16:19	WG1400030
Ethane	U		0.296	1.29	1	12/20/2019 16:19	WG1400030
Ethene	U		0.422	1.27	1	12/20/2019 16:19	WG1400030

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	1.92	<u>J</u>	1.05	25.0	1	12/18/2019 07:00	WG1398295
Acrylonitrile	U		0.873	5.00	1	12/18/2019 07:00	WG1398295
Benzene	U		0.0896	0.500	1	12/18/2019 07:00	WG1398295
Bromobenzene	U		0.133	0.500	1	12/18/2019 07:00	WG1398295
Bromodichloromethane	U		0.0800	0.500	1	12/18/2019 07:00	WG1398295
Bromochloromethane	U		0.145	0.500	1	12/18/2019 07:00	WG1398295
Bromoform	U		0.186	0.500	1	12/18/2019 07:00	WG1398295
Bromomethane	U		0.157	2.50	1	12/18/2019 07:00	WG1398295
n-Butylbenzene	U		0.143	0.500	1	12/18/2019 07:00	WG1398295
sec-Butylbenzene	U		0.134	0.500	1	12/18/2019 07:00	WG1398295
tert-Butylbenzene	U		0.183	0.500	1	12/18/2019 07:00	WG1398295
Carbon disulfide	U		0.101	0.500	1	12/18/2019 07:00	WG1398295
Carbon tetrachloride	U		0.159	0.500	1	12/18/2019 07:00	WG1398295





Collected date/time: 12/16/19 14:10

L1171422

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	12/18/2019 07:00	WG1398295
Chlorodibromomethane	U		0.128	0.500	1	12/18/2019 07:00	WG1398295
Chloroethane	U		0.141	2.50	1	12/18/2019 07:00	WG1398295
Chloroform	0.369	<u>J</u>	0.0860	0.500	1	12/18/2019 07:00	WG1398295
Chloromethane	U		0.153	1.25	1	12/18/2019 07:00	WG1398295
2-Chlorotoluene	U		0.111	0.500	1	12/18/2019 07:00	WG1398295
4-Chlorotoluene	U		0.0972	0.500	1	12/18/2019 07:00	WG1398295
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	12/18/2019 07:00	WG1398295
1,2-Dibromoethane	U		0.193	0.500	1	12/18/2019 07:00	WG1398295
Dibromomethane	U		0.117	0.500	1	12/18/2019 07:00	WG1398295
1,2-Dichlorobenzene	U		0.101	0.500	1	12/18/2019 07:00	WG1398295
1,3-Dichlorobenzene	U		0.130	0.500	1	12/18/2019 07:00	WG1398295
1,4-Dichlorobenzene	U		0.121	0.500	1	12/18/2019 07:00	WG1398295
Dichlorodifluoromethane	U		0.127	2.50	1	12/18/2019 07:00	WG1398295
1,1-Dichloroethane	U		0.114	0.500	1	12/18/2019 07:00	WG1398295
1,2-Dichloroethane	U		0.108	0.500	1	12/18/2019 07:00	WG1398295
1,1-Dichloroethene	U		0.188	0.500	1	12/18/2019 07:00	WG1398295
cis-1,2-Dichloroethene	U		0.0933	0.500	1	12/18/2019 15:50	WG1398556
trans-1,2-Dichloroethene	U		0.152	0.500	1	12/18/2019 07:00	WG1398295
1,2-Dichloropropane	U		0.190	0.500	1	12/18/2019 07:00	WG1398295
1,1-Dichloropropene	U		0.128	0.500	1	12/18/2019 07:00	WG1398295
1,3-Dichloropropane	U		0.147	1.00	1	12/18/2019 07:00	WG1398295
cis-1,3-Dichloropropene	U		0.0976	0.500	1	12/18/2019 07:00	WG1398295
trans-1,3-Dichloropropene	U		0.222	0.500	1	12/18/2019 07:00	WG1398295
trans-1,4-Dichloro-2-butene	U	<u>JO</u>	0.257	5.00	1	12/18/2019 07:00	WG1398295
2,2-Dichloropropane	U		0.0929	0.500	1	12/18/2019 07:00	WG1398295
Di-isopropyl ether	U		0.0924	0.500	1	12/18/2019 07:00	WG1398295
Ethylbenzene	U		0.158	0.500	1	12/18/2019 07:00	WG1398295
Hexachloro-1,3-butadiene	U		0.157	1.00	1	12/18/2019 07:00	WG1398295
2-Hexanone	U		0.757	5.00	1	12/18/2019 07:00	WG1398295
n-Hexane	U		0.305	5.00	1	12/18/2019 07:00	WG1398295
Iodomethane	U		0.377	10.0	1	12/18/2019 07:00	WG1398295
Isopropylbenzene	U		0.126	0.500	1	12/18/2019 07:00	WG1398295
p-Isopropyltoluene	U		0.138	0.500	1	12/18/2019 07:00	WG1398295
2-Butanone (MEK)	U		1.28	5.00	1	12/18/2019 07:00	WG1398295
Methylene Chloride	U		1.07	2.50	1	12/18/2019 07:00	WG1398295
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	12/18/2019 07:00	WG1398295
Methyl tert-butyl ether	U		0.102	0.500	1	12/18/2019 07:00	WG1398295
Naphthalene	U		0.174	2.50	1	12/18/2019 07:00	WG1398295
n-Propylbenzene	U		0.162	0.500	1	12/18/2019 07:00	WG1398295
Styrene	U		0.117	0.500	1	12/18/2019 07:00	WG1398295
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	12/18/2019 07:00	WG1398295
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	12/18/2019 07:00	WG1398295
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	12/18/2019 07:00	WG1398295
Tetrachloroethene	U		0.199	0.500	1	12/18/2019 07:00	WG1398295
Toluene	U		0.412	0.500	1	12/18/2019 07:00	WG1398295
1,2,3-Trichlorobenzene	U		0.164	0.500	1	12/18/2019 07:00	WG1398295
1,2,4-Trichlorobenzene	U		0.355	0.500	1	12/18/2019 07:00	WG1398295
1,1,1-Trichloroethane	U		0.0940	0.500	1	12/18/2019 07:00	WG1398295
1,1,2-Trichloroethane	U		0.186	0.500	1	12/18/2019 07:00	WG1398295
Trichloroethene	U		0.153	0.500	1	12/18/2019 07:00	WG1398295
Trichlorofluoromethane	U		0.130	2.50	1	12/18/2019 07:00	WG1398295
1,2,3-Trichloropropane	U		0.247	2.50	1	12/18/2019 07:00	WG1398295
1,2,4-Trimethylbenzene	U		0.123	0.500	1	12/18/2019 07:00	WG1398295
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	12/18/2019 07:00	WG1398295
1,3,5-Trimethylbenzene	U		0.124	0.500	1	12/18/2019 07:00	WG1398295

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 12/16/19 14:10

L1171422

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	12/18/2019 07:00	WG1398295
Vinyl chloride	U		0.118	0.500	1	12/18/2019 07:00	WG1398295
Xylenes, Total	U		0.316	1.50	1	12/18/2019 07:00	WG1398295
(S) Toluene-d8	107			80.0-120		12/18/2019 07:00	WG1398295
(S) Toluene-d8	87.2			80.0-120		12/18/2019 15:50	WG1398556
(S) 4-Bromofluorobenzene	104			77.0-126		12/18/2019 07:00	WG1398295
(S) 4-Bromofluorobenzene	101			77.0-126		12/18/2019 15:50	WG1398556
(S) 1,2-Dichloroethane-d4	99.3			70.0-130		12/18/2019 07:00	WG1398295
(S) 1,2-Dichloroethane-d4	103			70.0-130		12/18/2019 15:50	WG1398556

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 12/16/19 00:00

L1171422

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	32.3	<u>B</u> J	31.6	100	1	12/17/2019 21:35	WG1398191
(S) a,a,a-Trifluorotoluene(FID)	97.6			78.0-120		12/17/2019 21:35	WG1398191

1 Cp

2 Tc

3 Ss

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	1.72	<u>J</u>	1.05	25.0	1	12/18/2019 05:19	WG1398295
Acrylonitrile	U		0.873	5.00	1	12/18/2019 05:19	WG1398295
Benzene	U		0.0896	0.500	1	12/18/2019 05:19	WG1398295
Bromobenzene	U		0.133	0.500	1	12/18/2019 05:19	WG1398295
Bromodichloromethane	U		0.0800	0.500	1	12/18/2019 05:19	WG1398295
Bromochloromethane	U		0.145	0.500	1	12/18/2019 05:19	WG1398295
Bromoform	U		0.186	0.500	1	12/18/2019 05:19	WG1398295
Bromomethane	U		0.157	2.50	1	12/18/2019 05:19	WG1398295
n-Butylbenzene	U		0.143	0.500	1	12/18/2019 05:19	WG1398295
sec-Butylbenzene	U		0.134	0.500	1	12/18/2019 05:19	WG1398295
tert-Butylbenzene	U		0.183	0.500	1	12/18/2019 05:19	WG1398295
Carbon disulfide	U		0.101	0.500	1	12/18/2019 05:19	WG1398295
Carbon tetrachloride	U		0.159	0.500	1	12/18/2019 05:19	WG1398295
Chlorobenzene	U		0.140	0.500	1	12/18/2019 05:19	WG1398295
Chlorodibromomethane	U		0.128	0.500	1	12/18/2019 05:19	WG1398295
Chloroethane	U		0.141	2.50	1	12/18/2019 05:19	WG1398295
Chloroform	U		0.0860	0.500	1	12/18/2019 05:19	WG1398295
Chloromethane	U		0.153	1.25	1	12/18/2019 05:19	WG1398295
2-Chlorotoluene	U		0.111	0.500	1	12/18/2019 05:19	WG1398295
4-Chlorotoluene	U		0.0972	0.500	1	12/18/2019 05:19	WG1398295
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	12/18/2019 05:19	WG1398295
1,2-Dibromoethane	U		0.193	0.500	1	12/18/2019 05:19	WG1398295
Dibromomethane	U		0.117	0.500	1	12/18/2019 05:19	WG1398295
1,2-Dichlorobenzene	U		0.101	0.500	1	12/18/2019 05:19	WG1398295
1,3-Dichlorobenzene	U		0.130	0.500	1	12/18/2019 05:19	WG1398295
1,4-Dichlorobenzene	U		0.121	0.500	1	12/18/2019 05:19	WG1398295
Dichlorodifluoromethane	U		0.127	2.50	1	12/18/2019 05:19	WG1398295
1,1-Dichloroethane	U		0.114	0.500	1	12/18/2019 05:19	WG1398295
1,2-Dichloroethane	U		0.108	0.500	1	12/18/2019 05:19	WG1398295
1,1-Dichloroethene	U		0.188	0.500	1	12/18/2019 05:19	WG1398295
cis-1,2-Dichloroethene	U		0.0933	0.500	1	12/18/2019 05:19	WG1398295
trans-1,2-Dichloroethene	U		0.152	0.500	1	12/18/2019 05:19	WG1398295
1,2-Dichloropropane	U		0.190	0.500	1	12/18/2019 05:19	WG1398295
1,1-Dichloropropene	U		0.128	0.500	1	12/18/2019 05:19	WG1398295
1,3-Dichloropropane	U		0.147	1.00	1	12/18/2019 05:19	WG1398295
cis-1,3-Dichloropropene	U		0.0976	0.500	1	12/18/2019 05:19	WG1398295
trans-1,3-Dichloropropene	U		0.222	0.500	1	12/18/2019 05:19	WG1398295
trans-1,4-Dichloro-2-butene	U	<u>JO</u>	0.257	5.00	1	12/18/2019 05:19	WG1398295
2,2-Dichloropropane	U		0.0929	0.500	1	12/18/2019 05:19	WG1398295
Di-isopropyl ether	U		0.0924	0.500	1	12/18/2019 05:19	WG1398295
Ethylbenzene	U		0.158	0.500	1	12/18/2019 05:19	WG1398295
Hexachloro-1,3-butadiene	U		0.157	1.00	1	12/18/2019 05:19	WG1398295
2-Hexanone	U		0.757	5.00	1	12/18/2019 05:19	WG1398295
n-Hexane	U		0.305	5.00	1	12/18/2019 05:19	WG1398295
Iodomethane	U		0.377	10.0	1	12/18/2019 05:19	WG1398295
Isopropylbenzene	U		0.126	0.500	1	12/18/2019 05:19	WG1398295
p-Isopropyltoluene	U		0.138	0.500	1	12/18/2019 05:19	WG1398295
2-Butanone (MEK)	U		1.28	5.00	1	12/18/2019 05:19	WG1398295

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 12/16/19 00:00

L1171422

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methylene Chloride	U		1.07	2.50	1	12/18/2019 05:19	WG1398295
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	12/18/2019 05:19	WG1398295
Methyl tert-butyl ether	U		0.102	0.500	1	12/18/2019 05:19	WG1398295
Naphthalene	0.363	U	0.174	2.50	1	12/18/2019 05:19	WG1398295
n-Propylbenzene	U		0.162	0.500	1	12/18/2019 05:19	WG1398295
Styrene	U		0.117	0.500	1	12/18/2019 05:19	WG1398295
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	12/18/2019 05:19	WG1398295
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	12/18/2019 05:19	WG1398295
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	12/18/2019 05:19	WG1398295
Tetrachloroethene	U		0.199	0.500	1	12/18/2019 05:19	WG1398295
Toluene	U		0.412	0.500	1	12/18/2019 05:19	WG1398295
1,2,3-Trichlorobenzene	0.193	U	0.164	0.500	1	12/18/2019 05:19	WG1398295
1,2,4-Trichlorobenzene	U		0.355	0.500	1	12/18/2019 05:19	WG1398295
1,1,1-Trichloroethane	U		0.0940	0.500	1	12/18/2019 05:19	WG1398295
1,1,2-Trichloroethane	U		0.186	0.500	1	12/18/2019 05:19	WG1398295
Trichloroethene	U		0.153	0.500	1	12/18/2019 05:19	WG1398295
Trichlorofluoromethane	U		0.130	2.50	1	12/18/2019 05:19	WG1398295
1,2,3-Trichloropropane	U		0.247	2.50	1	12/18/2019 05:19	WG1398295
1,2,4-Trimethylbenzene	U		0.123	0.500	1	12/18/2019 05:19	WG1398295
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	12/18/2019 05:19	WG1398295
1,3,5-Trimethylbenzene	U		0.124	0.500	1	12/18/2019 05:19	WG1398295
Vinyl acetate	U		0.645	5.00	1	12/18/2019 05:19	WG1398295
Vinyl chloride	U		0.118	0.500	1	12/18/2019 05:19	WG1398295
Xylenes, Total	U		0.316	1.50	1	12/18/2019 05:19	WG1398295
(S) Toluene-d8	108			80.0-120		12/18/2019 05:19	WG1398295
(S) 4-Bromofluorobenzene	104			77.0-126		12/18/2019 05:19	WG1398295
(S) 1,2-Dichloroethane-d4	98.7			70.0-130		12/18/2019 05:19	WG1398295

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3483385-1 12/17/19 17:06

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	4160	↓	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1171302-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1171302-01 12/17/19 18:46 • (DUP) R3483385-2 12/17/19 18:54

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	48200	48200	1	0.00968		20

Sample Narrative:

OS: Endpoint pH 4.5
DUP: Endpoint pH 4.5

L1171461-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1171461-01 12/17/19 20:43 • (DUP) R3483385-4 12/17/19 20:51

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	129000	129000	1	0.208		20

Sample Narrative:

OS: Endpoint pH 4.5
DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3483385-3 12/17/19 19:50

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	100000	100	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3483415-1 12/17/19 09:28

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		51.9	1000
Nitrate	U		22.7	100
Sulfate	U		77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1167653-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1167653-09 12/17/19 11:23 • (DUP) R3483415-4 12/17/19 11:35

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	6850	6800	1	0.773		15
Nitrate	1680	1530	1	9.25		15
Sulfate	16800	16800	1	0.0518		15

L1171038-16 Original Sample (OS) • Duplicate (DUP)

(OS) L1171038-16 12/17/19 18:23 • (DUP) R3483415-7 12/17/19 18:35

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	2060	2060	1	0.199		15
Nitrate	188	178	1	5.31		15
Sulfate	ND	1360	1	0.000		15

Laboratory Control Sample (LCS)

(LCS) R3483415-2 12/17/19 09:40

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	38500	96.2	80.0-120	
Nitrate	8000	8080	101	80.0-120	
Sulfate	40000	38500	96.3	80.0-120	



L1171461-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1171461-01 12/17/19 15:13 • (MS) R3483415-5 12/17/19 15:24 • (MSD) R3483415-6 12/17/19 15:36

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	7510	56800	57000	98.6	99.0	1	80.0-120			0.345	15
Nitrate	5000	1180	6280	6350	102	104	1	80.0-120			1.08	15
Sulfate	50000	18800	67900	68100	98.2	98.6	1	80.0-120			0.287	15

L1171038-16 Original Sample (OS) • Matrix Spike (MS)

(OS) L1171038-16 12/17/19 18:23 • (MS) R3483415-8 12/17/19 18:46

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	2060	51100	98.2	1	80.0-120	
Nitrate	5000	188	5170	99.7	1	80.0-120	
Sulfate	50000	ND	50200	97.7	1	80.0-120	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3483464-1 12/17/19 16:55

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	219	↓	102	1000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

L1171422-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1171422-01 12/17/19 17:50 • (DUP) R3483464-3 12/17/19 18:05

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	4120	4120	1	0.0243		20

⁶ Qc

Laboratory Control Sample (LCS)

(LCS) R3483464-2 12/17/19 17:34

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC (Total Organic Carbon)	75000	70500	94.0	85.0-115	

⁷ Gl

⁸ Al

L1171428-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1171428-02 12/17/19 18:50 • (MS) R3483464-4 12/17/19 19:10 • (MSD) R3483464-5 12/17/19 19:27

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	10600	56200	56800	91.4	92.4	1	80.0-120			0.956	20

⁹ Sc



Method Blank (MB)

(MB) R3483612-1 12/18/19 10:30

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Iron	U		15.0	100
Manganese	0.283	J	0.250	5.00

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3483612-2 12/18/19 10:33 • (LCSD) R3483612-3 12/18/19 10:37

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Iron	5000	5340	5210	107	104	80.0-120			2.44	20
Manganese	50.0	51.5	50.9	103	102	80.0-120			1.16	20

5 Sr

6 Qc

L1170462-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1170462-02 12/18/19 10:40 • (MS) R3483612-5 12/18/19 10:46 • (MSD) R3483612-6 12/18/19 10:50

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Iron	5000	611	5790	5920	104	106	1	75.0-125			2.20	20
Manganese	50.0	24.3	73.5	75.7	98.3	103	1	75.0-125			2.98	20

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3483474-3 12/17/19 19:57

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	47.8	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	97.8			78.0-120

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3483474-1 12/17/19 18:02 • (LCSD) R3483474-2 12/17/19 18:45

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	6040	6310	110	115	70.0-124			4.37	20
(S) a,a,a-Trifluorotoluene(FID)				103	104	78.0-120				

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3484908-2 12/18/19 10:18

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	51.1	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	97.8			78.0-120

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS)

(LCS) R3484908-1 12/18/19 09:34

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5780	105	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			104	78.0-120	

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3484689-1 12/20/19 16:07

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

L1171422-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1171422-03 12/20/19 16:19 • (DUP) R3484689-2 12/20/19 16:48

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	U	0.000	1	0.000		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

L1171561-13 Original Sample (OS) • Duplicate (DUP)

(OS) L1171561-13 12/20/19 17:04 • (DUP) R3484689-3 12/20/19 17:22

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	65.6	66.7	1	1.66		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3484689-4 12/20/19 17:26 • (LCSD) R3484689-5 12/20/19 17:31

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	59.4	62.7	87.6	92.5	85.0-115			5.41	20
Ethane	129	113	119	87.6	92.2	85.0-115			5.17	20
Ethene	127	109	115	85.8	90.6	85.0-115			5.36	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3484768-1 12/21/19 08:03

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Methane	U		0.287	0.678

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

L1170981-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1170981-09 12/21/19 08:36 • (DUP) R3484768-2 12/21/19 08:39

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	U	0.000	1	0.000		20

7 Gl

8 Al

9 Sc

L1170981-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1170981-05 12/21/19 09:32 • (DUP) R3484768-3 12/21/19 09:34

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	1920	2100	1	8.96		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3484768-4 12/21/19 09:38 • (LCSD) R3484768-5 12/21/19 09:41

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Methane	67.8	65.2	64.3	96.2	94.8	85.0-115			1.39	20



Method Blank (MB)

(MB) R3483485-3 12/18/19 04:18

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3483485-3 12/18/19 04:18

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,2,4-Trimethylbenzene	U		0.123	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	108			80.0-120
(S) 4-Bromofluorobenzene	102			77.0-126
(S) 1,2-Dichloroethane-d4	97.8			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3483485-1 12/18/19 02:57 • (LCSD) R3483485-2 12/18/19 03:17

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	25.0	21.4	22.4	85.6	89.6	19.0-160			4.57	27
Acrylonitrile	25.0	24.0	23.8	96.0	95.2	55.0-149			0.837	20
Benzene	5.00	4.73	5.16	94.6	103	70.0-123			8.70	20
Bromobenzene	5.00	4.05	4.18	81.0	83.6	73.0-121			3.16	20
Bromodichloromethane	5.00	4.59	4.81	91.8	96.2	75.0-120			4.68	20
Bromochloromethane	5.00	5.11	5.27	102	105	76.0-122			3.08	20
Bromoform	5.00	5.09	5.06	102	101	68.0-132			0.591	20
Bromomethane	5.00	5.43	5.84	109	117	10.0-160			7.28	25
n-Butylbenzene	5.00	4.73	5.11	94.6	102	73.0-125			7.72	20
sec-Butylbenzene	5.00	4.44	4.70	88.8	94.0	75.0-125			5.69	20
tert-Butylbenzene	5.00	4.16	4.47	83.2	89.4	76.0-124			7.18	20
Carbon disulfide	5.00	4.50	4.98	90.0	99.6	61.0-128			10.1	20
Carbon tetrachloride	5.00	4.68	5.03	93.6	101	68.0-126			7.21	20
Chlorobenzene	5.00	5.10	5.41	102	108	80.0-121			5.90	20
Chlorodibromomethane	5.00	4.83	4.96	96.6	99.2	77.0-125			2.66	20
Chloroethane	5.00	4.24	4.66	84.8	93.2	47.0-150			9.44	20
Chloroform	5.00	4.90	5.19	98.0	104	73.0-120			5.75	20
Chloromethane	5.00	4.50	4.75	90.0	95.0	41.0-142			5.41	20
2-Chlorotoluene	5.00	4.22	4.49	84.4	89.8	76.0-123			6.20	20
4-Chlorotoluene	5.00	4.18	4.41	83.6	88.2	75.0-122			5.36	20
1,2-Dibromo-3-Chloropropane	5.00	4.46	4.54	89.2	90.8	58.0-134			1.78	20
1,2-Dibromoethane	5.00	5.09	5.16	102	103	80.0-122			1.37	20
Dibromomethane	5.00	4.77	4.92	95.4	98.4	80.0-120			3.10	20
1,2-Dichlorobenzene	5.00	4.94	5.12	98.8	102	79.0-121			3.58	20
1,3-Dichlorobenzene	5.00	4.84	5.13	96.8	103	79.0-120			5.82	20
1,4-Dichlorobenzene	5.00	4.87	5.14	97.4	103	79.0-120			5.39	20
trans-1,4-Dichloro-2-butene	5.00	3.10	3.30	62.0	66.0	33.0-144			6.25	20
Dichlorodifluoromethane	5.00	4.76	5.12	95.2	102	51.0-149			7.29	20
1,1-Dichloroethane	5.00	4.58	4.92	91.6	98.4	70.0-126			7.16	20
1,2-Dichloroethane	5.00	4.72	4.91	94.4	98.2	70.0-128			3.95	20
1,1-Dichloroethene	5.00	4.73	5.26	94.6	105	71.0-124			10.6	20
cis-1,2-Dichloroethene	5.00	4.89	5.27	97.8	105	73.0-120			7.48	20
trans-1,2-Dichloroethene	5.00	4.86	5.35	97.2	107	73.0-120			9.60	20
1,2-Dichloropropane	5.00	4.65	4.95	93.0	99.0	77.0-125			6.25	20
1,1-Dichloropropene	5.00	4.75	5.07	95.0	101	74.0-126			6.52	20
1,3-Dichloropropane	5.00	4.93	4.99	98.6	99.8	80.0-120			1.21	20
cis-1,3-Dichloropropene	5.00	4.54	4.74	90.8	94.8	80.0-123			4.31	20
trans-1,3-Dichloropropene	5.00	4.56	4.80	91.2	96.0	78.0-124			5.13	20
2,2-Dichloropropane	5.00	4.84	5.22	96.8	104	58.0-130			7.55	20
Di-isopropyl ether	5.00	4.22	4.47	84.4	89.4	58.0-138			5.75	20

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3483485-1 12/18/19 02:57 • (LCSD) R3483485-2 12/18/19 03:17

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Ethylbenzene	5.00	5.06	5.35	101	107	79.0-123			5.57	20
Hexachloro-1,3-butadiene	5.00	4.72	5.14	94.4	103	54.0-138			8.52	20
2-Hexanone	25.0	25.5	25.5	102	102	67.0-149			0.000	20
n-Hexane	5.00	4.93	5.23	98.6	105	57.0-133			5.91	20
Iodomethane	25.0	25.6	27.7	102	111	33.0-147			7.88	26
Isopropylbenzene	5.00	5.16	5.49	103	110	76.0-127			6.20	20
p-Isopropyltoluene	5.00	4.49	4.76	89.8	95.2	76.0-125			5.84	20
2-Butanone (MEK)	25.0	22.7	23.0	90.8	92.0	44.0-160			1.31	20
Methylene Chloride	5.00	5.08	5.36	102	107	67.0-120			5.36	20
4-Methyl-2-pentanone (MIBK)	25.0	24.6	24.8	98.4	99.2	68.0-142			0.810	20
Methyl tert-butyl ether	5.00	4.81	4.91	96.2	98.2	68.0-125			2.06	20
Naphthalene	5.00	4.80	4.97	96.0	99.4	54.0-135			3.48	20
n-Propylbenzene	5.00	4.17	4.43	83.4	88.6	77.0-124			6.05	20
Styrene	5.00	4.92	5.10	98.4	102	73.0-130			3.59	20
1,1,1,2-Tetrachloroethane	5.00	5.02	5.22	100	104	75.0-125			3.91	20
1,1,2,2-Tetrachloroethane	5.00	4.15	4.25	83.0	85.0	65.0-130			2.38	20
Tetrachloroethene	5.00	5.38	5.83	108	117	72.0-132			8.03	20
Toluene	5.00	5.08	5.48	102	110	79.0-120			7.58	20
1,1,2-Trichlorotrifluoroethane	5.00	4.95	5.32	99.0	106	69.0-132			7.21	20
1,2,3-Trichlorobenzene	5.00	4.91	5.18	98.2	104	50.0-138			5.35	20
1,2,4-Trichlorobenzene	5.00	4.95	5.32	99.0	106	57.0-137			7.21	20
1,1,1-Trichloroethane	5.00	4.84	5.27	96.8	105	73.0-124			8.51	20
1,1,2-Trichloroethane	5.00	5.30	5.31	106	106	80.0-120			0.189	20
Trichloroethene	5.00	4.81	5.24	96.2	105	78.0-124			8.56	20
Trichlorofluoromethane	5.00	4.97	5.31	99.4	106	59.0-147			6.61	20
1,2,3-Trichloropropane	5.00	4.33	4.54	86.6	90.8	73.0-130			4.74	20
1,2,3-Trimethylbenzene	5.00	4.74	4.89	94.8	97.8	77.0-120			3.12	20
1,2,4-Trimethylbenzene	5.00	4.21	4.45	84.2	89.0	76.0-121			5.54	20
1,3,5-Trimethylbenzene	5.00	4.20	4.44	84.0	88.8	76.0-122			5.56	20
Vinyl acetate	25.0	21.2	20.5	84.8	82.0	11.0-160			3.36	20
Vinyl chloride	5.00	4.13	4.58	82.6	91.6	67.0-131			10.3	20
Xylenes, Total	15.0	15.1	16.0	101	107	79.0-123			5.79	20
(S) Toluene-d8				107	106	80.0-120				
(S) 4-Bromofluorobenzene				103	103	77.0-126				
(S) 1,2-Dichloroethane-d4				98.4	98.9	70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3484162-3 12/18/19 11:46

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
cis-1,2-Dichloroethene	U		0.0933	0.500
(S) Toluene-d8	105			80.0-120
(S) 4-Bromofluorobenzene	97.9			77.0-126
(S) 1,2-Dichloroethane-d4	104			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3484162-1 12/18/19 10:30 • (LCSD) R3484162-2 12/18/19 11:00

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
cis-1,2-Dichloroethene	5.00	4.49	4.26	89.8	85.2	73.0-120			5.26	20
(S) Toluene-d8				105	107	80.0-120				
(S) 4-Bromofluorobenzene				102	105	77.0-126				
(S) 1,2-Dichloroethane-d4				103	101	70.0-130				

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration method criteria.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

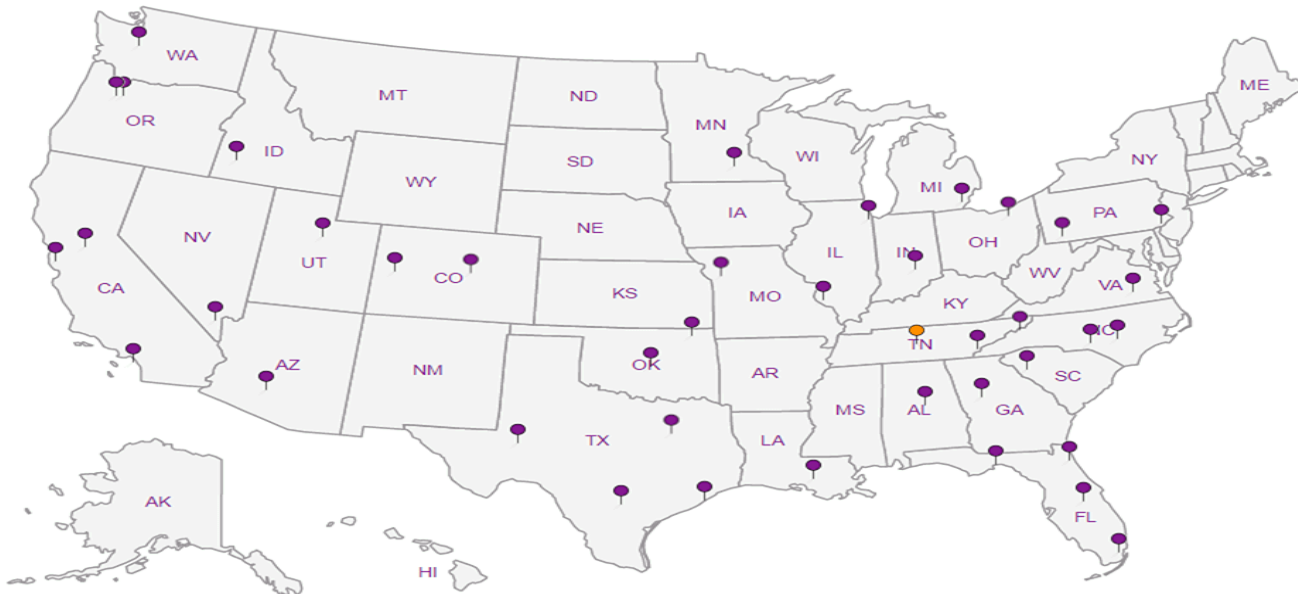
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

PES Environmental, Inc. - WA

1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Billing Information:

Attn: Accounts Payable
1215 Fourth Ave., Ste. 1350
Seattle, WA 98161

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 1



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



SDG # 1171422

G046

Acctnum: PESENVSWA

Template: T159835

Prelogin: P744908

PM: 110 - Brian Ford

PB:

Shipped Via:

Remarks

Sample # (lab only)

Report to:
Brian O'Neal/Bill Haldeman

Email To: boneal@pesenv.com;
bhaldeman@pesenv.com;

Project Description: American Linen Supply

City/State Collected: Seattle, WA

Please Circle:
PT MT CT ET

Phone: 206-529-3980
Fax: 206-529-3985

Client Project #
1413.001.02.501E

Lab Project #
PESENVSWA-ALP

Collected by (print):
Hannah Cohen

Site/Facility ID #
American Linen

P.O. #

Collected by (signature):
Hannah Cohen

Rush? (Lab MUST Be Notified)

Quote #

___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed

Immediately Packed on Ice N ___ Y

No. of
Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	*NO3,S04,Cl* 125mlHDPE-NoPres	Alkalinity 125mlHDPE-NoPres	EEM RSK175LL 40mlAmb-HCl	NWTPHGX 40mlAmb HCl	TOC 250mlHDPE-HCl	Total Fe Mn 6020 250mlHDPE-HNO3	VOCs (VB260LLC) 40mlAmb-HCl					
MW-145R-121619	Grab	GW	74'	12/16/19	1145	12	X	X	X	X	X	X	X					01
MW-144R-121619		GW	44'		1320	12	X	X	X	X	X	X	X					02
EQ-121619		GW	-		1410	12	X	X	X	X	X	X	X					03
TRIP BLANK-121619	-	GW	-		1430	2				X			X					04
HC																		

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

*Nitrate has a 48 hour holding time.

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:

___ UPS ___ FedEx ___ Courier

Tracking # 1275 8607 5761

Sample Receipt Checklist

COC Seal Present/Intact: Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD Screen <0.5 mR/hr: Y N

Relinquished by: (Signature)

Hannah Cohen

Date:

12/16/19

Time:

1515

Received by: (Signature)

Carol Kemp

Trip Blank Received: Yes/No

(HCL) MeOH TBR

Temp: °C Bottles Received:

2.2 ± 0.22 36

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

12/17/19

Time:

11:30

Received for lab by: (Signature)

Carol Kemp

Date:

12/17/19

Time:

11:30

Hold:

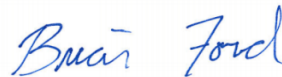
Condition:

NCF / OK

PES Environmental, Inc.- WA

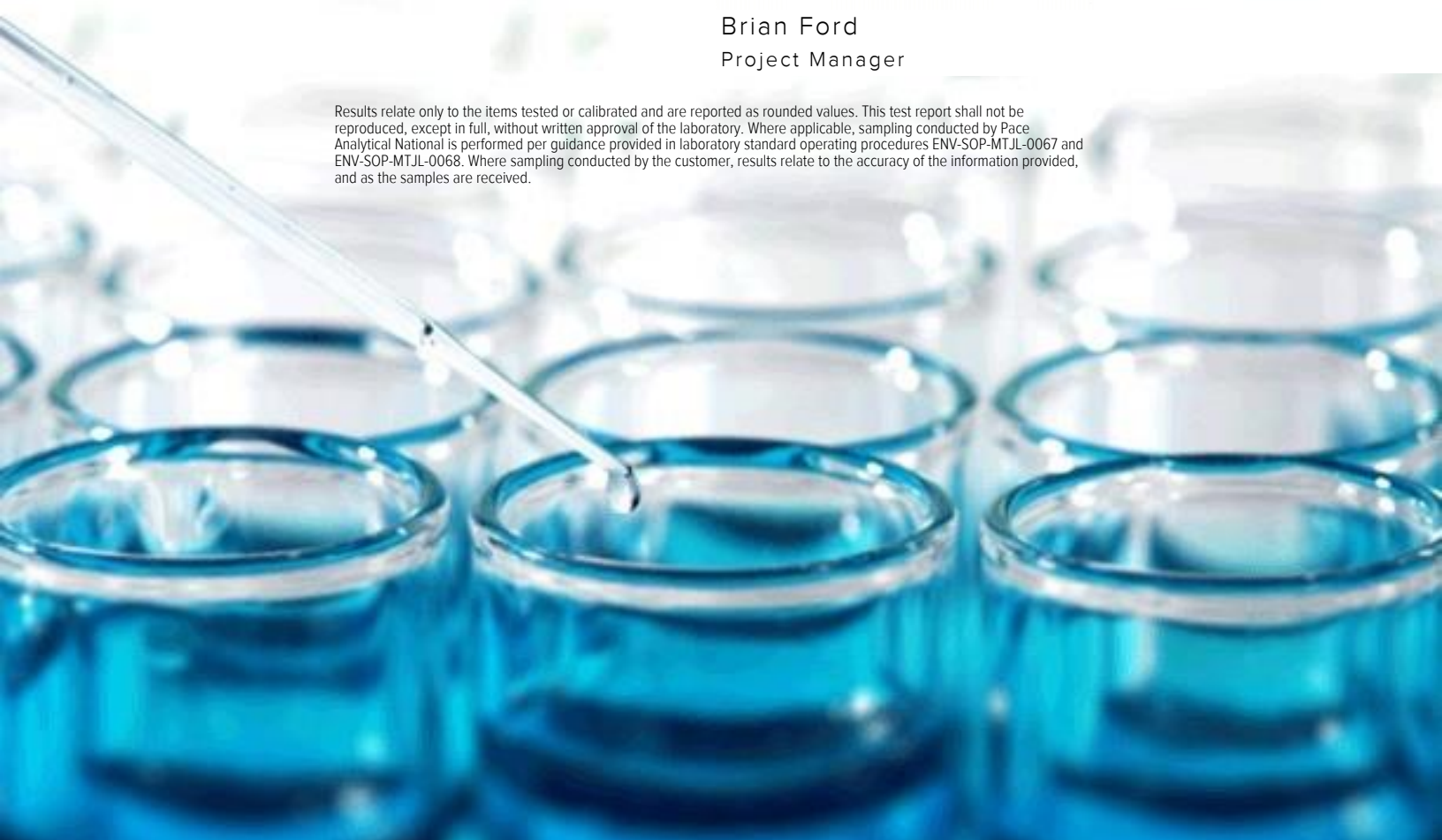
Sample Delivery Group: L1156093
Samples Received: 11/01/2019
Project Number: 1413.001.02.501E
Description: American Linen
Site: 1413.001.02.501E
Report To: Brian O'Neal/Bill Haldeman
1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





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SAMPLE SUMMARY

MW-185-103119 L1156093-01 GW

Collected by
K. Zygas
Collected date/time
10/31/19 11:00
Received date/time
11/01/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1376333	1	11/07/19 02:33	11/07/19 02:33	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1373431	1	11/01/19 18:48	11/01/19 18:48	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1373431	5	11/01/19 19:27	11/01/19 19:27	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1373918	1	11/02/19 18:25	11/02/19 18:25	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1375433	1	11/06/19 09:22	11/06/19 09:22	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1373704	1	11/07/19 10:35	11/07/19 13:21	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1375449	1	11/06/19 05:23	11/06/19 05:23	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1375047	1	11/05/19 15:15	11/05/19 15:15	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1376536	10	11/07/19 11:18	11/07/19 11:18	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1377899	1	11/09/19 13:23	11/09/19 13:23	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1378314	20	11/11/19 00:39	11/11/19 00:39	ACG	Mt. Juliet, TN

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

MW-186-103119 L1156093-02 GW

Collected by
K. Zygas
Collected date/time
10/31/19 14:50
Received date/time
11/01/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1376333	1	11/07/19 02:41	11/07/19 02:41	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1373431	1	11/01/19 19:41	11/01/19 19:41	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1373918	1	11/02/19 18:50	11/02/19 18:50	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1375433	1	11/05/19 22:13	11/05/19 22:13	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1373704	1	11/07/19 10:35	11/07/19 13:35	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1375449	1	11/06/19 05:47	11/06/19 05:47	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1375047	1	11/05/19 15:18	11/05/19 15:18	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1377899	1	11/09/19 13:43	11/09/19 13:43	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1378314	1	11/10/19 23:58	11/10/19 23:58	ACG	Mt. Juliet, TN

MW-188-103119 L1156093-03 GW

Collected by
K. Zygas
Collected date/time
10/31/19 12:20
Received date/time
11/01/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1376333	1	11/07/19 02:49	11/07/19 02:49	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1373431	1	11/01/19 20:07	11/01/19 20:07	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1373918	1	11/02/19 19:03	11/02/19 19:03	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1375433	1	11/05/19 22:29	11/05/19 22:29	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1373704	1	11/07/19 10:35	11/07/19 13:38	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1375654	1	11/07/19 10:47	11/07/19 10:47	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1375047	1	11/05/19 15:50	11/05/19 15:50	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1377899	1	11/09/19 14:03	11/09/19 14:03	ACG	Mt. Juliet, TN

TB-103119 L1156093-04 GW

Collected by
K. Zygas
Collected date/time
10/31/19 15:00
Received date/time
11/01/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1375654	1	11/07/19 09:59	11/07/19 09:59	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1377899	1	11/09/19 11:43	11/09/19 11:43	ACG	Mt. Juliet, TN



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	731000		2710	20000	1	11/07/2019 02:33	WG1376333

Sample Narrative:

L1156093-01 WG1376333: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	116000		260	5000	5	11/01/2019 19:27	WG1373431
Nitrate	U		22.7	100	1	11/01/2019 18:48	WG1373431
Sulfate	38100		77.4	5000	1	11/02/2019 18:25	WG1373918

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	51400		102	1000	1	11/06/2019 09:22	WG1375433

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	9910		15.0	100	1	11/07/2019 13:21	WG1373704
Manganese	1630	V	0.250	5.00	1	11/07/2019 13:21	WG1373704

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	446		31.6	100	1	11/06/2019 05:23	WG1375449
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120		11/06/2019 05:23	WG1375449

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	10300		2.87	6.78	10	11/07/2019 11:18	WG1376536
Ethane	9.69		0.296	1.29	1	11/05/2019 15:15	WG1375047
Ethene	232		0.422	1.27	1	11/05/2019 15:15	WG1375047

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	79.4	JO J4	1.05	25.0	1	11/09/2019 13:23	WG1377899
Acrylonitrile	U	J4	0.873	5.00	1	11/09/2019 13:23	WG1377899
Benzene	0.140	J	0.0896	0.500	1	11/09/2019 13:23	WG1377899
Bromobenzene	U		0.133	0.500	1	11/09/2019 13:23	WG1377899
Bromodichloromethane	U		0.0800	0.500	1	11/09/2019 13:23	WG1377899
Bromochloromethane	U		0.145	0.500	1	11/09/2019 13:23	WG1377899
Bromoform	U		0.186	0.500	1	11/09/2019 13:23	WG1377899
Bromomethane	U		0.157	2.50	1	11/09/2019 13:23	WG1377899
n-Butylbenzene	U	JO J4	0.143	0.500	1	11/09/2019 13:23	WG1377899
sec-Butylbenzene	U		0.134	0.500	1	11/09/2019 13:23	WG1377899
tert-Butylbenzene	U		0.183	0.500	1	11/09/2019 13:23	WG1377899
Carbon disulfide	U		0.101	0.500	1	11/09/2019 13:23	WG1377899
Carbon tetrachloride	U		0.159	0.500	1	11/09/2019 13:23	WG1377899

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/09/2019 13:23	WG1377899
Chlorodibromomethane	U		0.128	0.500	1	11/09/2019 13:23	WG1377899
Chloroethane	0.930	J	0.141	2.50	1	11/09/2019 13:23	WG1377899
Chloroform	0.504		0.0860	0.500	1	11/09/2019 13:23	WG1377899
Chloromethane	U		0.153	1.25	1	11/09/2019 13:23	WG1377899
2-Chlorotoluene	U		0.111	0.500	1	11/09/2019 13:23	WG1377899
4-Chlorotoluene	U		0.0972	0.500	1	11/09/2019 13:23	WG1377899
1,2-Dibromo-3-Chloropropane	U	JO	0.325	2.50	1	11/09/2019 13:23	WG1377899
1,2-Dibromoethane	U		0.193	0.500	1	11/09/2019 13:23	WG1377899
Dibromomethane	U		0.117	0.500	1	11/09/2019 13:23	WG1377899
1,2-Dichlorobenzene	U		0.101	0.500	1	11/09/2019 13:23	WG1377899
1,3-Dichlorobenzene	U		0.130	0.500	1	11/09/2019 13:23	WG1377899
1,4-Dichlorobenzene	U		0.121	0.500	1	11/09/2019 13:23	WG1377899
Dichlorodifluoromethane	U		0.127	2.50	1	11/09/2019 13:23	WG1377899
1,1-Dichloroethane	U		0.114	0.500	1	11/09/2019 13:23	WG1377899
1,2-Dichloroethane	U		0.108	0.500	1	11/09/2019 13:23	WG1377899
1,1-Dichloroethene	0.897		0.188	0.500	1	11/09/2019 13:23	WG1377899
cis-1,2-Dichloroethene	547		1.87	10.0	20	11/11/2019 00:39	WG1378314
trans-1,2-Dichloroethene	5.47		0.152	0.500	1	11/09/2019 13:23	WG1377899
1,2-Dichloropropane	U		0.190	0.500	1	11/09/2019 13:23	WG1377899
1,1-Dichloropropene	U		0.128	0.500	1	11/09/2019 13:23	WG1377899
1,3-Dichloropropane	U		0.147	1.00	1	11/09/2019 13:23	WG1377899
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/09/2019 13:23	WG1377899
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/09/2019 13:23	WG1377899
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/09/2019 13:23	WG1377899
2,2-Dichloropropane	U		0.0929	0.500	1	11/09/2019 13:23	WG1377899
Di-isopropyl ether	U		0.0924	0.500	1	11/09/2019 13:23	WG1377899
Ethylbenzene	U		0.158	0.500	1	11/09/2019 13:23	WG1377899
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/09/2019 13:23	WG1377899
2-Hexanone	U		0.757	5.00	1	11/09/2019 13:23	WG1377899
n-Hexane	U		0.305	5.00	1	11/09/2019 13:23	WG1377899
Iodomethane	U		0.377	10.0	1	11/09/2019 13:23	WG1377899
Isopropylbenzene	U		0.126	0.500	1	11/09/2019 13:23	WG1377899
p-Isopropyltoluene	U		0.138	0.500	1	11/09/2019 13:23	WG1377899
2-Butanone (MEK)	16.0	JO	1.28	5.00	1	11/09/2019 13:23	WG1377899
Methylene Chloride	U	JO	1.07	2.50	1	11/09/2019 13:23	WG1377899
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/09/2019 13:23	WG1377899
Methyl tert-butyl ether	U		0.102	0.500	1	11/09/2019 13:23	WG1377899
Naphthalene	U		0.174	2.50	1	11/09/2019 13:23	WG1377899
n-Propylbenzene	U		0.162	0.500	1	11/09/2019 13:23	WG1377899
Styrene	U		0.117	0.500	1	11/09/2019 13:23	WG1377899
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/09/2019 13:23	WG1377899
1,1,2,2-Tetrachloroethane	U	JO	0.130	0.500	1	11/09/2019 13:23	WG1377899
1,1,2-Trichlorotrifluoroethane	U	J4	0.164	0.500	1	11/09/2019 13:23	WG1377899
Tetrachloroethene	2.57		0.199	0.500	1	11/09/2019 13:23	WG1377899
Toluene	U		0.412	0.500	1	11/09/2019 13:23	WG1377899
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/09/2019 13:23	WG1377899
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/09/2019 13:23	WG1377899
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/09/2019 13:23	WG1377899
1,1,2-Trichloroethane	U		0.186	0.500	1	11/09/2019 13:23	WG1377899
Trichloroethene	3.51		0.153	0.500	1	11/09/2019 13:23	WG1377899
Trichlorofluoromethane	U		0.130	2.50	1	11/09/2019 13:23	WG1377899
1,2,3-Trichloropropane	U		0.247	2.50	1	11/09/2019 13:23	WG1377899
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/09/2019 13:23	WG1377899
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/09/2019 13:23	WG1377899
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/09/2019 13:23	WG1377899

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/31/19 11:00

L1156093

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	11/09/2019 13:23	WG1377899
Vinyl chloride	179		0.118	0.500	1	11/09/2019 13:23	WG1377899
Xylenes, Total	U		0.316	1.50	1	11/09/2019 13:23	WG1377899
(S) Toluene-d8	95.7			80.0-120		11/09/2019 13:23	WG1377899
(S) Toluene-d8	110			80.0-120		11/11/2019 00:39	WG1378314
(S) 4-Bromofluorobenzene	105			77.0-126		11/09/2019 13:23	WG1377899
(S) 4-Bromofluorobenzene	108			77.0-126		11/11/2019 00:39	WG1378314
(S) 1,2-Dichloroethane-d4	118			70.0-130		11/09/2019 13:23	WG1377899
(S) 1,2-Dichloroethane-d4	115			70.0-130		11/11/2019 00:39	WG1378314

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	320000		2710	20000	1	11/07/2019 02:41	WG1376333

Sample Narrative:

L1156093-02 WG1376333: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	62900		51.9	1000	1	11/01/2019 19:41	WG1373431
Nitrate	U		22.7	100	1	11/01/2019 19:41	WG1373431
Sulfate	31400		77.4	5000	1	11/02/2019 18:50	WG1373918

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	5290		102	1000	1	11/05/2019 22:13	WG1375433

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	501		15.0	100	1	11/07/2019 13:35	WG1373704
Manganese	280		0.250	5.00	1	11/07/2019 13:35	WG1373704

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	11/06/2019 05:47	WG1375449
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120		11/06/2019 05:47	WG1375449

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	1030		0.287	0.678	1	11/05/2019 15:18	WG1375047
Ethane	5.78		0.296	1.29	1	11/05/2019 15:18	WG1375047
Ethene	18.4		0.422	1.27	1	11/05/2019 15:18	WG1375047

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	4.13	J JO J4	1.05	25.0	1	11/09/2019 13:43	WG1377899
Acrylonitrile	U	J4	0.873	5.00	1	11/09/2019 13:43	WG1377899
Benzene	U		0.0896	0.500	1	11/09/2019 13:43	WG1377899
Bromobenzene	U		0.133	0.500	1	11/09/2019 13:43	WG1377899
Bromodichloromethane	U		0.0800	0.500	1	11/09/2019 13:43	WG1377899
Bromochloromethane	U		0.145	0.500	1	11/09/2019 13:43	WG1377899
Bromoform	U		0.186	0.500	1	11/09/2019 13:43	WG1377899
Bromomethane	U		0.157	2.50	1	11/09/2019 13:43	WG1377899
n-Butylbenzene	U	JO J4	0.143	0.500	1	11/09/2019 13:43	WG1377899
sec-Butylbenzene	U		0.134	0.500	1	11/09/2019 13:43	WG1377899
tert-Butylbenzene	U		0.183	0.500	1	11/09/2019 13:43	WG1377899
Carbon disulfide	U		0.101	0.500	1	11/09/2019 13:43	WG1377899
Carbon tetrachloride	U		0.159	0.500	1	11/09/2019 13:43	WG1377899

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/09/2019 13:43	WG1377899
Chlorodibromomethane	U		0.128	0.500	1	11/09/2019 13:43	WG1377899
Chloroethane	U		0.141	2.50	1	11/09/2019 13:43	WG1377899
Chloroform	0.170	J	0.0860	0.500	1	11/09/2019 13:43	WG1377899
Chloromethane	U		0.153	1.25	1	11/09/2019 13:43	WG1377899
2-Chlorotoluene	U		0.111	0.500	1	11/09/2019 13:43	WG1377899
4-Chlorotoluene	U		0.0972	0.500	1	11/09/2019 13:43	WG1377899
1,2-Dibromo-3-Chloropropane	U	JO	0.325	2.50	1	11/09/2019 13:43	WG1377899
1,2-Dibromoethane	U		0.193	0.500	1	11/09/2019 13:43	WG1377899
Dibromomethane	U		0.117	0.500	1	11/09/2019 13:43	WG1377899
1,2-Dichlorobenzene	U		0.101	0.500	1	11/09/2019 13:43	WG1377899
1,3-Dichlorobenzene	U		0.130	0.500	1	11/09/2019 13:43	WG1377899
1,4-Dichlorobenzene	U		0.121	0.500	1	11/09/2019 13:43	WG1377899
Dichlorodifluoromethane	U		0.127	2.50	1	11/09/2019 13:43	WG1377899
1,1-Dichloroethane	U		0.114	0.500	1	11/09/2019 13:43	WG1377899
1,2-Dichloroethane	U		0.108	0.500	1	11/09/2019 13:43	WG1377899
1,1-Dichloroethene	U		0.188	0.500	1	11/09/2019 13:43	WG1377899
cis-1,2-Dichloroethene	4.15		0.0933	0.500	1	11/10/2019 23:58	WG1378314
trans-1,2-Dichloroethene	U		0.152	0.500	1	11/09/2019 13:43	WG1377899
1,2-Dichloropropane	U		0.190	0.500	1	11/09/2019 13:43	WG1377899
1,1-Dichloropropene	U		0.128	0.500	1	11/09/2019 13:43	WG1377899
1,3-Dichloropropane	U		0.147	1.00	1	11/09/2019 13:43	WG1377899
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/09/2019 13:43	WG1377899
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/09/2019 13:43	WG1377899
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/09/2019 13:43	WG1377899
2,2-Dichloropropane	U		0.0929	0.500	1	11/09/2019 13:43	WG1377899
Di-isopropyl ether	U		0.0924	0.500	1	11/09/2019 13:43	WG1377899
Ethylbenzene	U		0.158	0.500	1	11/09/2019 13:43	WG1377899
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/09/2019 13:43	WG1377899
2-Hexanone	U		0.757	5.00	1	11/09/2019 13:43	WG1377899
n-Hexane	U		0.305	5.00	1	11/09/2019 13:43	WG1377899
Iodomethane	U		0.377	10.0	1	11/09/2019 13:43	WG1377899
Isopropylbenzene	U		0.126	0.500	1	11/09/2019 13:43	WG1377899
p-Isopropyltoluene	U		0.138	0.500	1	11/09/2019 13:43	WG1377899
2-Butanone (MEK)	U		1.28	5.00	1	11/09/2019 13:43	WG1377899
Methylene Chloride	U	JO	1.07	2.50	1	11/09/2019 13:43	WG1377899
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/09/2019 13:43	WG1377899
Methyl tert-butyl ether	U		0.102	0.500	1	11/09/2019 13:43	WG1377899
Naphthalene	U		0.174	2.50	1	11/09/2019 13:43	WG1377899
n-Propylbenzene	U		0.162	0.500	1	11/09/2019 13:43	WG1377899
Styrene	U		0.117	0.500	1	11/09/2019 13:43	WG1377899
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/09/2019 13:43	WG1377899
1,1,2,2-Tetrachloroethane	U	JO	0.130	0.500	1	11/09/2019 13:43	WG1377899
1,1,2-Trichlorotrifluoroethane	U	J4	0.164	0.500	1	11/09/2019 13:43	WG1377899
Tetrachloroethene	0.199	J	0.199	0.500	1	11/09/2019 13:43	WG1377899
Toluene	U		0.412	0.500	1	11/09/2019 13:43	WG1377899
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/09/2019 13:43	WG1377899
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/09/2019 13:43	WG1377899
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/09/2019 13:43	WG1377899
1,1,2-Trichloroethane	U		0.186	0.500	1	11/09/2019 13:43	WG1377899
Trichloroethene	U		0.153	0.500	1	11/09/2019 13:43	WG1377899
Trichlorofluoromethane	U		0.130	2.50	1	11/09/2019 13:43	WG1377899
1,2,3-Trichloropropane	U		0.247	2.50	1	11/09/2019 13:43	WG1377899
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/09/2019 13:43	WG1377899
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/09/2019 13:43	WG1377899
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/09/2019 13:43	WG1377899

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	11/09/2019 13:43	WG1377899
Vinyl chloride	23.4		0.118	0.500	1	11/09/2019 13:43	WG1377899
Xylenes, Total	U		0.316	1.50	1	11/09/2019 13:43	WG1377899
(S) Toluene-d8	95.1			80.0-120		11/09/2019 13:43	WG1377899
(S) Toluene-d8	109			80.0-120		11/10/2019 23:58	WG1378314
(S) 4-Bromofluorobenzene	101			77.0-126		11/09/2019 13:43	WG1377899
(S) 4-Bromofluorobenzene	112			77.0-126		11/10/2019 23:58	WG1378314
(S) 1,2-Dichloroethane-d4	115			70.0-130		11/09/2019 13:43	WG1377899
(S) 1,2-Dichloroethane-d4	116			70.0-130		11/10/2019 23:58	WG1378314

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	196000		2710	20000	1	11/07/2019 02:49	WG1376333

Sample Narrative:

L1156093-03 WG1376333: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	22000		51.9	1000	1	11/01/2019 20:07	WG1373431
Nitrate	23.1	J	22.7	100	1	11/01/2019 20:07	WG1373431
Sulfate	38700		77.4	5000	1	11/02/2019 19:03	WG1373918

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1410	B	102	1000	1	11/05/2019 22:29	WG1375433

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	325		15.0	100	1	11/07/2019 13:38	WG1373704
Manganese	387		0.250	5.00	1	11/07/2019 13:38	WG1373704

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	11/07/2019 10:47	WG1375654
(S) a,a,a-Trifluorotoluene(FID)	104			78.0-120		11/07/2019 10:47	WG1375654

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	U		0.287	0.678	1	11/05/2019 15:50	WG1375047
Ethane	U		0.296	1.29	1	11/05/2019 15:50	WG1375047
Ethene	U		0.422	1.27	1	11/05/2019 15:50	WG1375047

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	2.54	J JO J4	1.05	25.0	1	11/09/2019 14:03	WG1377899
Acrylonitrile	U	J4	0.873	5.00	1	11/09/2019 14:03	WG1377899
Benzene	U		0.0896	0.500	1	11/09/2019 14:03	WG1377899
Bromobenzene	U		0.133	0.500	1	11/09/2019 14:03	WG1377899
Bromodichloromethane	U		0.0800	0.500	1	11/09/2019 14:03	WG1377899
Bromochloromethane	U		0.145	0.500	1	11/09/2019 14:03	WG1377899
Bromoform	U		0.186	0.500	1	11/09/2019 14:03	WG1377899
Bromomethane	U		0.157	2.50	1	11/09/2019 14:03	WG1377899
n-Butylbenzene	U	JO J4	0.143	0.500	1	11/09/2019 14:03	WG1377899
sec-Butylbenzene	U		0.134	0.500	1	11/09/2019 14:03	WG1377899
tert-Butylbenzene	U		0.183	0.500	1	11/09/2019 14:03	WG1377899
Carbon disulfide	U		0.101	0.500	1	11/09/2019 14:03	WG1377899
Carbon tetrachloride	U		0.159	0.500	1	11/09/2019 14:03	WG1377899

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/31/19 12:20

L1156093

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/09/2019 14:03	WG1377899
Chlorodibromomethane	U		0.128	0.500	1	11/09/2019 14:03	WG1377899
Chloroethane	U		0.141	2.50	1	11/09/2019 14:03	WG1377899
Chloroform	U		0.0860	0.500	1	11/09/2019 14:03	WG1377899
Chloromethane	U		0.153	1.25	1	11/09/2019 14:03	WG1377899
2-Chlorotoluene	U		0.111	0.500	1	11/09/2019 14:03	WG1377899
4-Chlorotoluene	U		0.0972	0.500	1	11/09/2019 14:03	WG1377899
1,2-Dibromo-3-Chloropropane	U	<u>JO</u>	0.325	2.50	1	11/09/2019 14:03	WG1377899
1,2-Dibromoethane	U		0.193	0.500	1	11/09/2019 14:03	WG1377899
Dibromomethane	U		0.117	0.500	1	11/09/2019 14:03	WG1377899
1,2-Dichlorobenzene	U		0.101	0.500	1	11/09/2019 14:03	WG1377899
1,3-Dichlorobenzene	U		0.130	0.500	1	11/09/2019 14:03	WG1377899
1,4-Dichlorobenzene	U		0.121	0.500	1	11/09/2019 14:03	WG1377899
Dichlorodifluoromethane	U		0.127	2.50	1	11/09/2019 14:03	WG1377899
1,1-Dichloroethane	U		0.114	0.500	1	11/09/2019 14:03	WG1377899
1,2-Dichloroethane	U		0.108	0.500	1	11/09/2019 14:03	WG1377899
1,1-Dichloroethene	U		0.188	0.500	1	11/09/2019 14:03	WG1377899
cis-1,2-Dichloroethene	U		0.0933	0.500	1	11/09/2019 14:03	WG1377899
trans-1,2-Dichloroethene	U		0.152	0.500	1	11/09/2019 14:03	WG1377899
1,2-Dichloropropane	U		0.190	0.500	1	11/09/2019 14:03	WG1377899
1,1-Dichloropropene	U		0.128	0.500	1	11/09/2019 14:03	WG1377899
1,3-Dichloropropane	U		0.147	1.00	1	11/09/2019 14:03	WG1377899
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/09/2019 14:03	WG1377899
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/09/2019 14:03	WG1377899
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/09/2019 14:03	WG1377899
2,2-Dichloropropane	U		0.0929	0.500	1	11/09/2019 14:03	WG1377899
Di-isopropyl ether	U		0.0924	0.500	1	11/09/2019 14:03	WG1377899
Ethylbenzene	U		0.158	0.500	1	11/09/2019 14:03	WG1377899
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/09/2019 14:03	WG1377899
2-Hexanone	U		0.757	5.00	1	11/09/2019 14:03	WG1377899
n-Hexane	U		0.305	5.00	1	11/09/2019 14:03	WG1377899
Iodomethane	U		0.377	10.0	1	11/09/2019 14:03	WG1377899
Isopropylbenzene	U		0.126	0.500	1	11/09/2019 14:03	WG1377899
p-Isopropyltoluene	U		0.138	0.500	1	11/09/2019 14:03	WG1377899
2-Butanone (MEK)	U		1.28	5.00	1	11/09/2019 14:03	WG1377899
Methylene Chloride	U	<u>JO</u>	1.07	2.50	1	11/09/2019 14:03	WG1377899
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/09/2019 14:03	WG1377899
Methyl tert-butyl ether	U		0.102	0.500	1	11/09/2019 14:03	WG1377899
Naphthalene	U		0.174	2.50	1	11/09/2019 14:03	WG1377899
n-Propylbenzene	U		0.162	0.500	1	11/09/2019 14:03	WG1377899
Styrene	U		0.117	0.500	1	11/09/2019 14:03	WG1377899
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/09/2019 14:03	WG1377899
1,1,2,2-Tetrachloroethane	U	<u>JO</u>	0.130	0.500	1	11/09/2019 14:03	WG1377899
1,1,2-Trichlorotrifluoroethane	U	<u>J4</u>	0.164	0.500	1	11/09/2019 14:03	WG1377899
Tetrachloroethene	U		0.199	0.500	1	11/09/2019 14:03	WG1377899
Toluene	U		0.412	0.500	1	11/09/2019 14:03	WG1377899
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/09/2019 14:03	WG1377899
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/09/2019 14:03	WG1377899
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/09/2019 14:03	WG1377899
1,1,2-Trichloroethane	U		0.186	0.500	1	11/09/2019 14:03	WG1377899
Trichloroethene	U		0.153	0.500	1	11/09/2019 14:03	WG1377899
Trichlorofluoromethane	U		0.130	2.50	1	11/09/2019 14:03	WG1377899
1,2,3-Trichloropropane	U		0.247	2.50	1	11/09/2019 14:03	WG1377899
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/09/2019 14:03	WG1377899
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/09/2019 14:03	WG1377899
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/09/2019 14:03	WG1377899

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	11/09/2019 14:03	WG1377899
Vinyl chloride	U		0.118	0.500	1	11/09/2019 14:03	WG1377899
Xylenes, Total	U		0.316	1.50	1	11/09/2019 14:03	WG1377899
<i>(S) Toluene-d8</i>	96.6			80.0-120		11/09/2019 14:03	WG1377899
<i>(S) 4-Bromofluorobenzene</i>	105			77.0-126		11/09/2019 14:03	WG1377899
<i>(S) 1,2-Dichloroethane-d4</i>	117			70.0-130		11/09/2019 14:03	WG1377899

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	11/07/2019 09:59	WG1375654
(S) a,a,a-Trifluorotoluene(FID)	103			78.0-120		11/07/2019 09:59	WG1375654

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U	J4	1.05	25.0	1	11/09/2019 11:43	WG1377899
Acrylonitrile	U	J4	0.873	5.00	1	11/09/2019 11:43	WG1377899
Benzene	U		0.0896	0.500	1	11/09/2019 11:43	WG1377899
Bromobenzene	U		0.133	0.500	1	11/09/2019 11:43	WG1377899
Bromodichloromethane	U		0.0800	0.500	1	11/09/2019 11:43	WG1377899
Bromochloromethane	U		0.145	0.500	1	11/09/2019 11:43	WG1377899
Bromoform	U		0.186	0.500	1	11/09/2019 11:43	WG1377899
Bromomethane	U		0.157	2.50	1	11/09/2019 11:43	WG1377899
n-Butylbenzene	U	JO J4	0.143	0.500	1	11/09/2019 11:43	WG1377899
sec-Butylbenzene	U		0.134	0.500	1	11/09/2019 11:43	WG1377899
tert-Butylbenzene	U		0.183	0.500	1	11/09/2019 11:43	WG1377899
Carbon disulfide	U		0.101	0.500	1	11/09/2019 11:43	WG1377899
Carbon tetrachloride	U		0.159	0.500	1	11/09/2019 11:43	WG1377899
Chlorobenzene	U		0.140	0.500	1	11/09/2019 11:43	WG1377899
Chlorodibromomethane	U		0.128	0.500	1	11/09/2019 11:43	WG1377899
Chloroethane	U		0.141	2.50	1	11/09/2019 11:43	WG1377899
Chloroform	U		0.0860	0.500	1	11/09/2019 11:43	WG1377899
Chloromethane	U		0.153	1.25	1	11/09/2019 11:43	WG1377899
2-Chlorotoluene	U		0.111	0.500	1	11/09/2019 11:43	WG1377899
4-Chlorotoluene	U		0.0972	0.500	1	11/09/2019 11:43	WG1377899
1,2-Dibromo-3-Chloropropane	U	JO	0.325	2.50	1	11/09/2019 11:43	WG1377899
1,2-Dibromoethane	U		0.193	0.500	1	11/09/2019 11:43	WG1377899
Dibromomethane	U		0.117	0.500	1	11/09/2019 11:43	WG1377899
1,2-Dichlorobenzene	U		0.101	0.500	1	11/09/2019 11:43	WG1377899
1,3-Dichlorobenzene	U		0.130	0.500	1	11/09/2019 11:43	WG1377899
1,4-Dichlorobenzene	U		0.121	0.500	1	11/09/2019 11:43	WG1377899
Dichlorodifluoromethane	U		0.127	2.50	1	11/09/2019 11:43	WG1377899
1,1-Dichloroethane	U		0.114	0.500	1	11/09/2019 11:43	WG1377899
1,2-Dichloroethane	U		0.108	0.500	1	11/09/2019 11:43	WG1377899
1,1-Dichloroethene	U		0.188	0.500	1	11/09/2019 11:43	WG1377899
cis-1,2-Dichloroethene	U		0.0933	0.500	1	11/09/2019 11:43	WG1377899
trans-1,2-Dichloroethene	U		0.152	0.500	1	11/09/2019 11:43	WG1377899
1,2-Dichloropropane	U		0.190	0.500	1	11/09/2019 11:43	WG1377899
1,1-Dichloropropene	U		0.128	0.500	1	11/09/2019 11:43	WG1377899
1,3-Dichloropropane	U		0.147	1.00	1	11/09/2019 11:43	WG1377899
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/09/2019 11:43	WG1377899
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/09/2019 11:43	WG1377899
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/09/2019 11:43	WG1377899
2,2-Dichloropropane	U		0.0929	0.500	1	11/09/2019 11:43	WG1377899
Di-isopropyl ether	U		0.0924	0.500	1	11/09/2019 11:43	WG1377899
Ethylbenzene	U		0.158	0.500	1	11/09/2019 11:43	WG1377899
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/09/2019 11:43	WG1377899
2-Hexanone	U		0.757	5.00	1	11/09/2019 11:43	WG1377899
n-Hexane	U		0.305	5.00	1	11/09/2019 11:43	WG1377899
Iodomethane	U		0.377	10.0	1	11/09/2019 11:43	WG1377899
Isopropylbenzene	U		0.126	0.500	1	11/09/2019 11:43	WG1377899
p-Isopropyltoluene	U		0.138	0.500	1	11/09/2019 11:43	WG1377899
2-Butanone (MEK)	U		1.28	5.00	1	11/09/2019 11:43	WG1377899



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methylene Chloride	U	<u>JO</u>	1.07	2.50	1	11/09/2019 11:43	WG1377899
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/09/2019 11:43	WG1377899
Methyl tert-butyl ether	U		0.102	0.500	1	11/09/2019 11:43	WG1377899
Naphthalene	U		0.174	2.50	1	11/09/2019 11:43	WG1377899
n-Propylbenzene	U		0.162	0.500	1	11/09/2019 11:43	WG1377899
Styrene	U		0.117	0.500	1	11/09/2019 11:43	WG1377899
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/09/2019 11:43	WG1377899
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/09/2019 11:43	WG1377899
1,1,2-Trichlorotrifluoroethane	U	<u>JO J4</u>	0.164	0.500	1	11/09/2019 11:43	WG1377899
Tetrachloroethene	U		0.199	0.500	1	11/09/2019 11:43	WG1377899
Toluene	U		0.412	0.500	1	11/09/2019 11:43	WG1377899
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/09/2019 11:43	WG1377899
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/09/2019 11:43	WG1377899
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/09/2019 11:43	WG1377899
1,1,2-Trichloroethane	U		0.186	0.500	1	11/09/2019 11:43	WG1377899
Trichloroethene	U		0.153	0.500	1	11/09/2019 11:43	WG1377899
Trichlorofluoromethane	U		0.130	2.50	1	11/09/2019 11:43	WG1377899
1,2,3-Trichloropropane	U		0.247	2.50	1	11/09/2019 11:43	WG1377899
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/09/2019 11:43	WG1377899
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/09/2019 11:43	WG1377899
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/09/2019 11:43	WG1377899
Vinyl acetate	U		0.645	5.00	1	11/09/2019 11:43	WG1377899
Vinyl chloride	U		0.118	0.500	1	11/09/2019 11:43	WG1377899
Xylenes, Total	U		0.316	1.50	1	11/09/2019 11:43	WG1377899
(S) Toluene-d8	94.6			80.0-120		11/09/2019 11:43	WG1377899
(S) 4-Bromofluorobenzene	103			77.0-126		11/09/2019 11:43	WG1377899
(S) 1,2-Dichloroethane-d4	112			70.0-130		11/09/2019 11:43	WG1377899

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3469414-1 11/06/19 23:16

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	3390	↓	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1156246-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1156246-04 11/07/19 03:39 • (DUP) R3469414-4 11/07/19 03:46

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	384000	383000	1	0.218		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

L1155933-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1155933-01 11/07/19 03:53 • (DUP) R3469414-6 11/07/19 04:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	75300	74900	1	0.504		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3469414-3 11/07/19 01:57

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	101000	101	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3467955-1 11/01/19 09:29

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	U		51.9	1000
Nitrate	U		22.7	100

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1155605-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1155605-04 11/01/19 10:40 • (DUP) R3467955-3 11/01/19 10:53

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	91800	91100	1	0.776		15
Nitrate	3050	3030	1	0.575		15

L1156064-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1156064-04 11/01/19 15:47 • (DUP) R3467955-6 11/01/19 16:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	20400	20200	1	0.915		15
Nitrate	4190	4150	1	0.918		15

Laboratory Control Sample (LCS)

(LCS) R3467955-2 11/01/19 09:41

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Chloride	40000	39100	97.7	80.0-120	
Nitrate	8000	7920	99.0	80.0-120	

L1155605-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1155605-01 11/01/19 11:06 • (MS) R3467955-4 11/01/19 11:19 • (MSD) R3467955-5 11/01/19 11:32

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Chloride	50000	17700	67000	66300	98.6	97.1	1	80.0-120			1.14	15
Nitrate	5000	209	5360	5280	103	101	1	80.0-120			1.46	15



L1156093-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1156093-02 11/01/19 19:41 • (MS) R3467955-7 11/01/19 19:54

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	62900	109000	92.7	1	80.0-120	E
Nitrate	5000	U	4990	99.9	1	80.0-120	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3467991-1 11/02/19 11:48

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Sulfate	87.3	J	77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1155923-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1155923-04 11/02/19 12:27 • (DUP) R3467991-3 11/02/19 12:40

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	112000	113000	1	0.741	E	15

L1156093-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1156093-03 11/02/19 19:03 • (DUP) R3467991-6 11/02/19 19:41

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	38700	39100	1	1.08		15

Laboratory Control Sample (LCS)

(LCS) R3467991-2 11/02/19 12:01

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Sulfate	40000	39600	98.9	80.0-120	

L1155923-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1155923-05 11/02/19 12:52 • (MS) R3467991-4 11/02/19 13:05 • (MSD) R3467991-5 11/02/19 13:18

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Sulfate	50000	121000	162000	165000	80.7	87.1	1	80.0-120	E	E	1.95	15

L1156093-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1156093-03 11/02/19 19:03 • (MS) R3467991-7 11/02/19 19:54

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Sulfate	50000	38700	86000	94.6	1	80.0-120	



Method Blank (MB)

(MB) R3468961-1 11/05/19 20:18

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	345	↓	102	1000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1156109-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1156109-01 11/05/19 22:49 • (DUP) R3468961-3 11/05/19 23:09

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	16800	16400	1	2.11		20

L1156246-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1156246-04 11/06/19 02:54 • (DUP) R3468961-6 11/06/19 03:11

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	ND	578	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3468961-2 11/05/19 20:58

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC (Total Organic Carbon)	75000	74100	98.8	85.0-115	

L1156483-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1156483-01 11/06/19 06:03 • (MS) R3468961-7 11/06/19 06:25 • (MSD) R3468961-8 11/06/19 06:44

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	27500	76700	77000	98.5	99.1	1	80.0-120			0.390	20



Method Blank (MB)

(MB) R3469566-1 11/07/19 13:11

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Iron	U		15.0	100
Manganese	U		0.250	5.00

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3469566-2 11/07/19 13:15 • (LCSD) R3469566-3 11/07/19 13:18

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Iron	5000	5050	5040	101	101	80.0-120			0.200	20
Manganese	50.0	51.5	50.1	103	100	80.0-120			2.56	20

L1156093-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1156093-01 11/07/19 13:21 • (MS) R3469566-5 11/07/19 13:28 • (MSD) R3469566-6 11/07/19 13:32

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Iron	5000	9910	15500	16000	111	122	1	75.0-125			3.49	20
Manganese	50.0	1630	1620	1640	0.000	31.3	1	75.0-125	<u>V</u>	<u>V</u>	1.65	20



Method Blank (MB)

(MB) R3470079-2 11/05/19 22:12

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	104			78.0-120

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS)

(LCS) R3470079-1 11/05/19 21:12

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	6300	115	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			95.3	78.0-120	

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3470375-2 11/07/19 09:28

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	103			78.0-120

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3470375-1 11/07/19 01:58 • (LCSD) R3470375-3 11/07/19 18:28

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	5980	6380	109	116	70.0-124			6.47	20
(S) a,a,a-Trifluorotoluene(FID)				90.7	92.8	78.0-120				

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3468700-1 11/05/19 15:11

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1156461-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1156461-01 11/05/19 15:13 • (DUP) R3468700-2 11/05/19 16:20

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	ND	0.000	1	0.000		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

L1156483-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1156483-01 11/05/19 17:05 • (DUP) R3468700-3 11/05/19 17:14

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	33.6	32.3	1	3.95		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3468700-4 11/05/19 17:20 • (LCSD) R3468700-5 11/05/19 17:23

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	73.6	75.6	109	112	85.0-115			2.68	20
Ethane	129	135	137	105	106	85.0-115			1.47	20
Ethene	127	141	143	111	113	85.0-115			1.41	20



Method Blank (MB)

(MB) R3469485-1 11/07/19 11:02

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Methane	U		0.287	0.678

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1156583-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1156583-01 11/07/19 11:06 • (DUP) R3469485-2 11/07/19 12:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	U	0.000	1	0.000		20

L1156667-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1156667-08 11/07/19 13:24 • (DUP) R3469485-3 11/07/19 13:27

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	65.8	66.3	1	0.757		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3469485-4 11/07/19 13:30 • (LCSD) R3469485-5 11/07/19 13:37

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Methane	67.8	73.9	76.3	109	113	85.0-115			3.20	20



Method Blank (MB)

(MB) R3470351-2 11/09/19 04:42

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3470351-2 11/09/19 04:42

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	93.8			80.0-120
(S) 4-Bromofluorobenzene	106			77.0-126
(S) 1,2-Dichloroethane-d4	110			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3470351-1 11/09/19 04:01

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	25.0	41.6	166	19.0-160	J4
Acrylonitrile	25.0	38.7	155	55.0-149	J4
Benzene	5.00	4.66	93.2	70.0-123	
Bromobenzene	5.00	4.99	99.8	73.0-121	
Bromodichloromethane	5.00	4.70	94.0	75.0-120	
Bromochloromethane	5.00	5.14	103	76.0-122	
Bromoform	5.00	4.38	87.6	68.0-132	
Bromomethane	5.00	4.62	92.4	10.0-160	
n-Butylbenzene	5.00	3.64	72.8	73.0-125	J4
sec-Butylbenzene	5.00	5.00	100	75.0-125	
tert-Butylbenzene	5.00	5.28	106	76.0-124	
Carbon disulfide	5.00	4.63	92.6	61.0-128	
Carbon tetrachloride	5.00	4.83	96.6	68.0-126	
Chlorobenzene	5.00	4.78	95.6	80.0-121	
Chlorodibromomethane	5.00	4.30	86.0	77.0-125	
Chloroethane	5.00	4.77	95.4	47.0-150	
Chloroform	5.00	4.87	97.4	73.0-120	
Chloromethane	5.00	6.60	132	41.0-142	
2-Chlorotoluene	5.00	5.65	113	76.0-123	
4-Chlorotoluene	5.00	5.88	118	75.0-122	
1,2-Dibromo-3-Chloropropane	5.00	4.40	88.0	58.0-134	
1,2-Dibromoethane	5.00	4.05	81.0	80.0-122	
Dibromomethane	5.00	4.68	93.6	80.0-120	
1,2-Dichlorobenzene	5.00	4.15	83.0	79.0-121	
1,3-Dichlorobenzene	5.00	4.95	99.0	79.0-120	
1,4-Dichlorobenzene	5.00	4.68	93.6	79.0-120	
Dichlorodifluoromethane	5.00	5.30	106	51.0-149	
1,1-Dichloroethane	5.00	5.29	106	70.0-126	
1,2-Dichloroethane	5.00	5.38	108	70.0-128	
1,1-Dichloroethene	5.00	4.53	90.6	71.0-124	
cis-1,2-Dichloroethene	5.00	4.73	94.6	73.0-120	
trans-1,2-Dichloroethene	5.00	4.61	92.2	73.0-120	
1,2-Dichloropropane	5.00	4.93	98.6	77.0-125	
1,1-Dichloropropene	5.00	4.78	95.6	74.0-126	
1,3-Dichloropropane	5.00	4.08	81.6	80.0-120	
cis-1,3-Dichloropropene	5.00	4.72	94.4	80.0-123	
trans-1,3-Dichloropropene	5.00	4.15	83.0	78.0-124	
trans-1,4-Dichloro-2-butene	5.00	6.38	128	33.0-144	
2,2-Dichloropropane	5.00	4.19	83.8	58.0-130	
Di-isopropyl ether	5.00	5.54	111	58.0-138	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Laboratory Control Sample (LCS)

(LCS) R3470351-1 11/09/19 04:01

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Ethylbenzene	5.00	4.38	87.6	79.0-123	
Hexachloro-1,3-butadiene	5.00	3.88	77.6	54.0-138	
2-Hexanone	25.0	27.5	110	67.0-149	
n-Hexane	5.00	5.89	118	57.0-133	
Iodomethane	25.0	22.5	90.0	33.0-147	
Isopropylbenzene	5.00	4.49	89.8	76.0-127	
p-Isopropyltoluene	5.00	4.95	99.0	76.0-125	
2-Butanone (MEK)	25.0	38.9	156	44.0-160	
Methylene Chloride	5.00	3.65	73.0	67.0-120	
4-Methyl-2-pentanone (MIBK)	25.0	25.8	103	68.0-142	
Methyl tert-butyl ether	5.00	4.78	95.6	68.0-125	
Naphthalene	5.00	5.06	101	54.0-135	
n-Propylbenzene	5.00	5.30	106	77.0-124	
Styrene	5.00	4.72	94.4	73.0-130	
1,1,1,2-Tetrachloroethane	5.00	4.14	82.8	75.0-125	
1,1,2,2-Tetrachloroethane	5.00	4.56	91.2	65.0-130	
1,1,2-Trichlorotrifluoroethane	5.00	3.36	67.2	69.0-132	J4
Tetrachloroethene	5.00	4.39	87.8	72.0-132	
Toluene	5.00	4.38	87.6	79.0-120	
1,2,3-Trichlorobenzene	5.00	4.49	89.8	50.0-138	
1,2,4-Trichlorobenzene	5.00	4.43	88.6	57.0-137	
1,1,1-Trichloroethane	5.00	5.08	102	73.0-124	
1,1,2-Trichloroethane	5.00	4.18	83.6	80.0-120	
Trichloroethene	5.00	5.23	105	78.0-124	
Trichlorofluoromethane	5.00	5.21	104	59.0-147	
1,2,3-Trichloropropane	5.00	5.97	119	73.0-130	
1,2,4-Trimethylbenzene	5.00	5.58	112	76.0-121	
1,2,3-Trimethylbenzene	5.00	4.53	90.6	77.0-120	
1,3,5-Trimethylbenzene	5.00	5.47	109	76.0-122	
Vinyl acetate	25.0	25.1	100	11.0-160	
Vinyl chloride	5.00	4.90	98.0	67.0-131	
Xylenes, Total	15.0	13.6	90.7	79.0-123	
(S) Toluene-d8			96.2	80.0-120	
(S) 4-Bromofluorobenzene			105	77.0-126	
(S) 1,2-Dichloroethane-d4			111	70.0-130	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3470534-3 11/10/19 21:17

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
cis-1,2-Dichloroethene	U		0.0933	0.500
(S) Toluene-d8	109			80.0-120
(S) 4-Bromofluorobenzene	110			77.0-126
(S) 1,2-Dichloroethane-d4	113			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3470534-2 11/10/19 18:51

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
cis-1,2-Dichloroethene	5.00	5.06	101	73.0-120	
(S) Toluene-d8			104	80.0-120	
(S) 4-Bromofluorobenzene			108	77.0-126	
(S) 1,2-Dichloroethane-d4			115	70.0-130	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration method criteria.
J4	The associated batch QC was outside the established quality control range for accuracy.
V	The sample concentration is too high to evaluate accurate spike recoveries.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

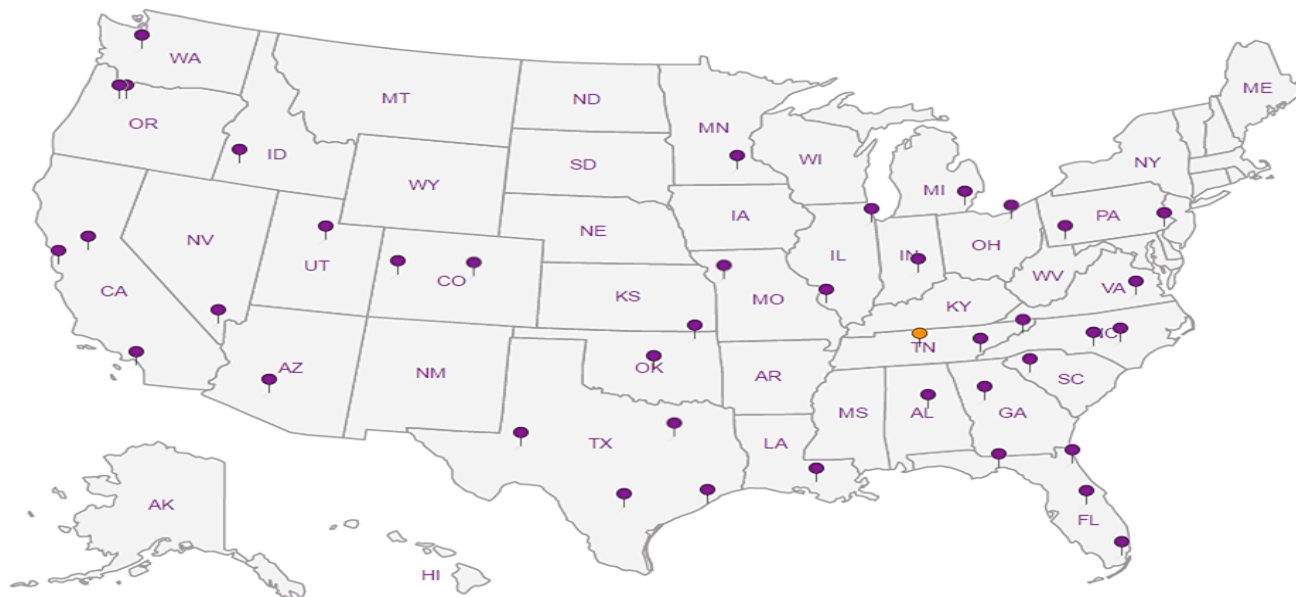
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

Company: **PES Environmental, Inc.**
 Address: **1215 4th Ave STE 1350, Seattle, WA 98161**
 Report To: **Bill Haldeman/Brian O'Neal**
 Copy To: **Kim Vik, Shannon McKernan, Karsten Springstead**
 Customer Project Name/Number: **American Linen 1413.001.02.501E**

Billing Information: **Attn: Accounts Payable 1215 4th Ave STE 1350, Seattle, WA 98161**

Email To: **bhaldeman@pesenv.com; boneal@pesenv.com**

Site Collection Info/Address: **700 Dexter Ave N**

State: **WA** / County/City: **King/Seattle** Time Zone Collected: **[x] PT [] MT [] CT [] ET**

Phone: **206-529-3980**
 Email: **mjoiner@pesenv.com**
 Site/Facility ID #: **1413.001.02.501E**

Compliance Monitoring?
 Yes No

Collected By (print): **K. Zys...**
 Purchase Order #: **1413.001.02.501E**
 Quote #: **PESENVSWA-ALP**

DW PWS ID #:
 DW Location Code:

Collected By (signature): **[Signature]**
 Turnaround Date Required:
 Same Day Next Day
 2 Day 3 Day 4 Day 5 Day
 (Expedite Charges Apply)

Immediately Packed on Ice:
 Yes No

Sample Disposal:
 Dispose as appropriate Return
 Archive
 Hold:

Field Filtered (if applicable):
 Yes No

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

ALL SHADED AREAS are for LAB USE ONLY

Container Preservative Type **

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

M157

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Composite End		Res Cl	# of Ctns
			Date	Time	Date	Time		
MW-185-103119	GW	Grab	10/31/19	1100	---	---	---	12
MW-186-103119	↓	↓	↓	1450	---	---	---	12
MW-188-103119	↓	↓	↓	1220	---	---	---	12
TB-103119	---	---	↓	1500	---	---	---	1

Analyses	Lab Profile/Line:
NO3, SO4, Cl 125mlHDPE-NoPres	Lab Sample Receipt Checklist: Y N NA
Alkalinity 125mlHDPE-NoPres	Custody Seals Present/Intact: Y N NA
EEM RSK175LL 40mlAmb-HCl	Custody Signatures Present: Y N NA
TOC 250mlAmb-HCl or 250mlHDPE-HCl	Collector Signature Present: Y N NA
Total Fe, Mn 6020 250mlHDPE-HNO3	Bottles Intact: Y N NA
VOCs 8260LLC 40mlAmb-HCl	Correct Bottles: Y N NA
NWTPHX - (KZ)	Sufficient Volume: Y N NA
NWTPHX GRO by NWTPHX-GA	Samples Received on Ice: Y N NA
	VOA - Headspace Acceptable: Y N NA
	USDA Regulated Soils: Y N NA
	Samples in Holding Time: Y N NA
	Residual Chlorine Present: Y N NA
	Cl Strips: Y N NA
	Sample pH Acceptable: Y N NA
	pH Strips: Y N NA
	Sulfide Present: Y N NA
	Lead Acetate Strips: Y N NA

LAB USE ONLY:
 Lab Sample # / Comments:

L1196093-01
 02
 03
 04
 Trip Blank

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None
 Packing Material Used:
 Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A
 Lab Tracking #: **1275 8600 9900**
 Samples received via: **FEDEX** UPS Client Courier Pace Courier

LAB Sample Temperature Info:
 Temp Blank Received: Y N NA
 Therm ID#:
 Cooler 1 Temp Upon Receipt: **1.4** °C
 Cooler 1 Therm Corr. Factor: **-1.2** °C
 Cooler 1 Corrected Temp: **1.2** °C
 Comments:

Relinquished by/Company: (Signature) **[Signature]** / PES
 Date/Time: **10/31/19 1600**
 Received by/Company: (Signature) **[Signature]**
 Date/Time: **11-1-19 8:45**

MTJL LAB USE ONLY
 Table #:
 Acctnum:
 Template:
 Prelogin:
 PM:
 PB:

RAD SCREEN: <0.5 mR/hr
 Trip Blank Received: Y N NA
 HCL MeOH TSP Other
 Non Conformance(s): YES / NO
 Page: of:

1 TB 36 Total

November 13, 2019

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

PES Environmental, Inc.- WA

Sample Delivery Group: L1156483
Samples Received: 11/02/2019
Project Number: 1413.001.02.501E
Description: American Linen
Site: 1413.001.02.501E
Report To: Brian O'Neal/Bill Haldeman
1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Entire Report Reviewed By:

Brian Ford

Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



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SAMPLE SUMMARY



MW-187-110119 L1156483-01 GW

Collected by
K. Zygas
Collected date/time
11/01/19 09:10
Received date/time
11/02/19 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1376785	1	11/07/19 19:59	11/07/19 19:59	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1373953	1	11/02/19 17:15	11/02/19 17:15	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1375433	1	11/06/19 06:03	11/06/19 06:03	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1375892	1	11/06/19 13:48	11/06/19 16:24	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1375654	1	11/07/19 22:45	11/07/19 22:45	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1375047	1	11/05/19 17:05	11/05/19 17:05	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1377928	1	11/09/19 15:11	11/09/19 15:11	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1378777	1	11/12/19 19:53	11/12/19 19:53	JHH	Mt. Juliet, TN

1
Cp

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Tc

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Ss

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Cn

5
Sr

MW-173-110119 L1156483-02 GW

Collected by
K. Zygas
Collected date/time
11/01/19 10:50
Received date/time
11/02/19 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1376785	1	11/07/19 20:06	11/07/19 20:06	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1373953	1	11/02/19 17:33	11/02/19 17:33	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1375433	1	11/06/19 07:06	11/06/19 07:06	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1375892	1	11/06/19 13:48	11/06/19 16:27	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1376401	1	11/09/19 01:52	11/09/19 01:52	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1375047	1	11/05/19 16:43	11/05/19 16:43	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1375796	10	11/06/19 16:51	11/06/19 16:51	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1377928	1	11/09/19 15:31	11/09/19 15:31	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1378777	1	11/12/19 20:14	11/12/19 20:14	JHH	Mt. Juliet, TN

6
Qc

7
Gl

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Al

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Sc

MW-174-110119 L1156483-03 GW

Collected by
K. Zygas
Collected date/time
11/01/19 12:20
Received date/time
11/02/19 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1376785	1	11/07/19 20:23	11/07/19 20:23	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1373953	1	11/02/19 17:51	11/02/19 17:51	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1375433	1	11/06/19 07:27	11/06/19 07:27	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1375892	1	11/06/19 13:48	11/06/19 16:30	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1376401	1	11/09/19 02:16	11/09/19 02:16	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1375047	1	11/05/19 16:48	11/05/19 16:48	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1375796	10	11/06/19 15:33	11/06/19 15:33	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1377928	1	11/09/19 15:50	11/09/19 15:50	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1378777	1	11/12/19 20:35	11/12/19 20:35	JHH	Mt. Juliet, TN

MW-175-110119 L1156483-04 GW

Collected by
K. Zygas
Collected date/time
11/01/19 14:15
Received date/time
11/02/19 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1376785	1	11/07/19 21:22	11/07/19 21:22	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1373953	1	11/02/19 18:26	11/02/19 18:26	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1373953	5	11/03/19 23:01	11/03/19 23:01	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1376183	1	11/06/19 20:00	11/06/19 20:00	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1375892	1	11/06/19 13:48	11/06/19 16:33	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1376401	1	11/09/19 03:04	11/09/19 03:04	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1375047	1	11/05/19 16:59	11/05/19 16:59	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1377928	1	11/09/19 16:10	11/09/19 16:10	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1378777	10	11/12/19 20:56	11/12/19 20:56	JHH	Mt. Juliet, TN

SAMPLE SUMMARY

MW-176-110119 L1156483-05 GW

Collected by: K. Zygas
 Collected date/time: 11/01/19 13:30
 Received date/time: 11/02/19 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1376785	1	11/07/19 21:30	11/07/19 21:30	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1373953	1	11/02/19 18:43	11/02/19 18:43	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1376183	1	11/06/19 20:22	11/06/19 20:22	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1375892	1	11/06/19 13:48	11/06/19 16:37	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1376401	1	11/09/19 07:26	11/09/19 07:26	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1375047	1	11/05/19 17:01	11/05/19 17:01	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1377928	1	11/09/19 16:29	11/09/19 16:29	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1378777	1	11/12/19 21:17	11/12/19 21:17	JHH	Mt. Juliet, TN

1
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Gl

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Al

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Sc

TB-110119 L1156483-06 GW

Collected by: K. Zygas
 Collected date/time: 11/01/19 15:00
 Received date/time: 11/02/19 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1376401	1	11/09/19 01:28	11/09/19 01:28	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1377928	1	11/09/19 12:34	11/09/19 12:34	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1378777	1	11/12/19 19:11	11/12/19 19:11	JHH	Mt. Juliet, TN



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	193000		2710	20000	1	11/07/2019 19:59	WG1376785

Sample Narrative:

L1156483-01 WG1376785: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	24500		51.9	1000	1	11/02/2019 17:15	WG1373953
Nitrate	U		22.7	100	1	11/02/2019 17:15	WG1373953
Sulfate	21600		77.4	5000	1	11/02/2019 17:15	WG1373953

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	27500		102	1000	1	11/06/2019 06:03	WG1375433

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	5520		15.0	100	1	11/06/2019 16:24	WG1375892
Manganese	140		0.250	5.00	1	11/06/2019 16:24	WG1375892

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	11/07/2019 22:45	WG1375654
(S) a,a,a-Trifluorotoluene(FID)	103			78.0-120		11/07/2019 22:45	WG1375654

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	33.6		0.287	0.678	1	11/05/2019 17:05	WG1375047
Ethane	U		0.296	1.29	1	11/05/2019 17:05	WG1375047
Ethene	U		0.422	1.27	1	11/05/2019 17:05	WG1375047

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	12.3	J	1.05	25.0	1	11/12/2019 19:53	WG1378777
Acrylonitrile	U		0.873	5.00	1	11/09/2019 15:11	WG1377928
Benzene	U		0.0896	0.500	1	11/09/2019 15:11	WG1377928
Bromobenzene	U		0.133	0.500	1	11/09/2019 15:11	WG1377928
Bromodichloromethane	U		0.0800	0.500	1	11/09/2019 15:11	WG1377928
Bromochloromethane	U		0.145	0.500	1	11/09/2019 15:11	WG1377928
Bromoform	U		0.186	0.500	1	11/09/2019 15:11	WG1377928
Bromomethane	U	JO	0.157	2.50	1	11/09/2019 15:11	WG1377928
n-Butylbenzene	U		0.143	0.500	1	11/09/2019 15:11	WG1377928
sec-Butylbenzene	U		0.134	0.500	1	11/09/2019 15:11	WG1377928
tert-Butylbenzene	U		0.183	0.500	1	11/09/2019 15:11	WG1377928
Carbon disulfide	0.353	J	0.101	0.500	1	11/09/2019 15:11	WG1377928
Carbon tetrachloride	U		0.159	0.500	1	11/09/2019 15:11	WG1377928

1 Cp

2 Tc

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/09/2019 15:11	WG1377928
Chlorodibromomethane	U		0.128	0.500	1	11/09/2019 15:11	WG1377928
Chloroethane	U		0.141	2.50	1	11/09/2019 15:11	WG1377928
Chloroform	0.223	J	0.0860	0.500	1	11/09/2019 15:11	WG1377928
Chloromethane	U	JO	0.153	1.25	1	11/09/2019 15:11	WG1377928
2-Chlorotoluene	U		0.111	0.500	1	11/09/2019 15:11	WG1377928
4-Chlorotoluene	U		0.0972	0.500	1	11/09/2019 15:11	WG1377928
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/09/2019 15:11	WG1377928
1,2-Dibromoethane	U		0.193	0.500	1	11/09/2019 15:11	WG1377928
Dibromomethane	U		0.117	0.500	1	11/09/2019 15:11	WG1377928
1,2-Dichlorobenzene	U		0.101	0.500	1	11/09/2019 15:11	WG1377928
1,3-Dichlorobenzene	U		0.130	0.500	1	11/09/2019 15:11	WG1377928
1,4-Dichlorobenzene	U		0.121	0.500	1	11/09/2019 15:11	WG1377928
Dichlorodifluoromethane	U	J4	0.127	2.50	1	11/09/2019 15:11	WG1377928
1,1-Dichloroethane	U		0.114	0.500	1	11/09/2019 15:11	WG1377928
1,2-Dichloroethane	U		0.108	0.500	1	11/09/2019 15:11	WG1377928
1,1-Dichloroethene	U		0.188	0.500	1	11/09/2019 15:11	WG1377928
cis-1,2-Dichloroethene	2.34		0.0933	0.500	1	11/09/2019 15:11	WG1377928
trans-1,2-Dichloroethene	U		0.152	0.500	1	11/09/2019 15:11	WG1377928
1,2-Dichloropropane	U		0.190	0.500	1	11/09/2019 15:11	WG1377928
1,1-Dichloropropene	U		0.128	0.500	1	11/09/2019 15:11	WG1377928
1,3-Dichloropropane	U		0.147	1.00	1	11/09/2019 15:11	WG1377928
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/09/2019 15:11	WG1377928
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/09/2019 15:11	WG1377928
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/09/2019 15:11	WG1377928
2,2-Dichloropropane	U		0.0929	0.500	1	11/09/2019 15:11	WG1377928
Di-isopropyl ether	U		0.0924	0.500	1	11/09/2019 15:11	WG1377928
Ethylbenzene	U		0.158	0.500	1	11/09/2019 15:11	WG1377928
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/09/2019 15:11	WG1377928
2-Hexanone	U		0.757	5.00	1	11/09/2019 15:11	WG1377928
n-Hexane	U		0.305	5.00	1	11/09/2019 15:11	WG1377928
Iodomethane	U	JO	0.377	10.0	1	11/09/2019 15:11	WG1377928
Isopropylbenzene	U		0.126	0.500	1	11/09/2019 15:11	WG1377928
p-Isopropyltoluene	U		0.138	0.500	1	11/09/2019 15:11	WG1377928
2-Butanone (MEK)	U		1.28	5.00	1	11/09/2019 15:11	WG1377928
Methylene Chloride	U		1.07	2.50	1	11/09/2019 15:11	WG1377928
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/09/2019 15:11	WG1377928
Methyl tert-butyl ether	U		0.102	0.500	1	11/09/2019 15:11	WG1377928
Naphthalene	0.306	J	0.174	2.50	1	11/09/2019 15:11	WG1377928
n-Propylbenzene	U		0.162	0.500	1	11/09/2019 15:11	WG1377928
Styrene	U		0.117	0.500	1	11/09/2019 15:11	WG1377928
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/09/2019 15:11	WG1377928
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/09/2019 15:11	WG1377928
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/09/2019 15:11	WG1377928
Tetrachloroethene	U		0.199	0.500	1	11/09/2019 15:11	WG1377928
Toluene	U		0.412	0.500	1	11/09/2019 15:11	WG1377928
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/09/2019 15:11	WG1377928
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/09/2019 15:11	WG1377928
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/09/2019 15:11	WG1377928
1,1,2-Trichloroethane	U		0.186	0.500	1	11/09/2019 15:11	WG1377928
Trichloroethene	U		0.153	0.500	1	11/09/2019 15:11	WG1377928
Trichlorofluoromethane	U		0.130	2.50	1	11/09/2019 15:11	WG1377928
1,2,3-Trichloropropane	U		0.247	2.50	1	11/09/2019 15:11	WG1377928
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/09/2019 15:11	WG1377928
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/09/2019 15:11	WG1377928
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/09/2019 15:11	WG1377928

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	11/09/2019 15:11	WG1377928
Vinyl chloride	2.80		0.118	0.500	1	11/09/2019 15:11	WG1377928
Xylenes, Total	U		0.316	1.50	1	11/09/2019 15:11	WG1377928
(S) Toluene-d8	92.5			80.0-120		11/09/2019 15:11	WG1377928
(S) Toluene-d8	93.9			80.0-120		11/12/2019 19:53	WG1378777
(S) 4-Bromofluorobenzene	95.1			77.0-126		11/09/2019 15:11	WG1377928
(S) 4-Bromofluorobenzene	95.6			77.0-126		11/12/2019 19:53	WG1378777
(S) 1,2-Dichloroethane-d4	95.6			70.0-130		11/09/2019 15:11	WG1377928
(S) 1,2-Dichloroethane-d4	96.7			70.0-130		11/12/2019 19:53	WG1378777

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	472000		2710	20000	1	11/07/2019 20:06	WG1376785

Sample Narrative:

L1156483-02 WG1376785: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	51700		51.9	1000	1	11/02/2019 17:33	WG1373953
Nitrate	U		22.7	100	1	11/02/2019 17:33	WG1373953
Sulfate	60600		77.4	5000	1	11/02/2019 17:33	WG1373953

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	14800		102	1000	1	11/06/2019 07:06	WG1375433

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	2860		15.0	100	1	11/06/2019 16:27	WG1375892
Manganese	380		0.250	5.00	1	11/06/2019 16:27	WG1375892

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	11/09/2019 01:52	WG1376401
(S) a,a,a-Trifluorotoluene(FID)	104			78.0-120		11/09/2019 01:52	WG1376401

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	7530		2.87	6.78	10	11/06/2019 16:51	WG1375796
Ethane	38.2		0.296	1.29	1	11/05/2019 16:43	WG1375047
Ethene	124		0.422	1.27	1	11/05/2019 16:43	WG1375047

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	3.84	J	1.05	25.0	1	11/12/2019 20:14	WG1378777
Acrylonitrile	U		0.873	5.00	1	11/09/2019 15:31	WG1377928
Benzene	0.141	J	0.0896	0.500	1	11/09/2019 15:31	WG1377928
Bromobenzene	U		0.133	0.500	1	11/09/2019 15:31	WG1377928
Bromodichloromethane	U		0.0800	0.500	1	11/09/2019 15:31	WG1377928
Bromochloromethane	U		0.145	0.500	1	11/09/2019 15:31	WG1377928
Bromoform	U		0.186	0.500	1	11/09/2019 15:31	WG1377928
Bromomethane	U	JO	0.157	2.50	1	11/09/2019 15:31	WG1377928
n-Butylbenzene	U		0.143	0.500	1	11/09/2019 15:31	WG1377928
sec-Butylbenzene	U		0.134	0.500	1	11/09/2019 15:31	WG1377928
tert-Butylbenzene	U		0.183	0.500	1	11/09/2019 15:31	WG1377928
Carbon disulfide	U		0.101	0.500	1	11/09/2019 15:31	WG1377928
Carbon tetrachloride	U		0.159	0.500	1	11/09/2019 15:31	WG1377928

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/09/2019 15:31	WG1377928
Chlorodibromomethane	U		0.128	0.500	1	11/09/2019 15:31	WG1377928
Chloroethane	U		0.141	2.50	1	11/09/2019 15:31	WG1377928
Chloroform	0.850		0.0860	0.500	1	11/09/2019 15:31	WG1377928
Chloromethane	U	<u>JO</u>	0.153	1.25	1	11/09/2019 15:31	WG1377928
2-Chlorotoluene	U		0.111	0.500	1	11/09/2019 15:31	WG1377928
4-Chlorotoluene	U		0.0972	0.500	1	11/09/2019 15:31	WG1377928
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/09/2019 15:31	WG1377928
1,2-Dibromoethane	U		0.193	0.500	1	11/09/2019 15:31	WG1377928
Dibromomethane	U		0.117	0.500	1	11/09/2019 15:31	WG1377928
1,2-Dichlorobenzene	U		0.101	0.500	1	11/09/2019 15:31	WG1377928
1,3-Dichlorobenzene	U		0.130	0.500	1	11/09/2019 15:31	WG1377928
1,4-Dichlorobenzene	U		0.121	0.500	1	11/09/2019 15:31	WG1377928
Dichlorodifluoromethane	U	<u>J4</u>	0.127	2.50	1	11/09/2019 15:31	WG1377928
1,1-Dichloroethane	U		0.114	0.500	1	11/09/2019 15:31	WG1377928
1,2-Dichloroethane	U		0.108	0.500	1	11/09/2019 15:31	WG1377928
1,1-Dichloroethene	U		0.188	0.500	1	11/09/2019 15:31	WG1377928
cis-1,2-Dichloroethene	15.6		0.0933	0.500	1	11/09/2019 15:31	WG1377928
trans-1,2-Dichloroethene	2.31		0.152	0.500	1	11/09/2019 15:31	WG1377928
1,2-Dichloropropane	U		0.190	0.500	1	11/09/2019 15:31	WG1377928
1,1-Dichloropropene	U		0.128	0.500	1	11/09/2019 15:31	WG1377928
1,3-Dichloropropane	U		0.147	1.00	1	11/09/2019 15:31	WG1377928
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/09/2019 15:31	WG1377928
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/09/2019 15:31	WG1377928
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/09/2019 15:31	WG1377928
2,2-Dichloropropane	U		0.0929	0.500	1	11/09/2019 15:31	WG1377928
Di-isopropyl ether	U		0.0924	0.500	1	11/09/2019 15:31	WG1377928
Ethylbenzene	U		0.158	0.500	1	11/09/2019 15:31	WG1377928
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/09/2019 15:31	WG1377928
2-Hexanone	U		0.757	5.00	1	11/09/2019 15:31	WG1377928
n-Hexane	U		0.305	5.00	1	11/09/2019 15:31	WG1377928
Iodomethane	U	<u>JO</u>	0.377	10.0	1	11/09/2019 15:31	WG1377928
Isopropylbenzene	U		0.126	0.500	1	11/09/2019 15:31	WG1377928
p-Isopropyltoluene	U		0.138	0.500	1	11/09/2019 15:31	WG1377928
2-Butanone (MEK)	U		1.28	5.00	1	11/09/2019 15:31	WG1377928
Methylene Chloride	U		1.07	2.50	1	11/09/2019 15:31	WG1377928
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/09/2019 15:31	WG1377928
Methyl tert-butyl ether	U		0.102	0.500	1	11/09/2019 15:31	WG1377928
Naphthalene	U		0.174	2.50	1	11/09/2019 15:31	WG1377928
n-Propylbenzene	U		0.162	0.500	1	11/09/2019 15:31	WG1377928
Styrene	U		0.117	0.500	1	11/09/2019 15:31	WG1377928
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/09/2019 15:31	WG1377928
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/09/2019 15:31	WG1377928
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/09/2019 15:31	WG1377928
Tetrachloroethene	0.704		0.199	0.500	1	11/09/2019 15:31	WG1377928
Toluene	U		0.412	0.500	1	11/09/2019 15:31	WG1377928
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/09/2019 15:31	WG1377928
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/09/2019 15:31	WG1377928
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/09/2019 15:31	WG1377928
1,1,2-Trichloroethane	U		0.186	0.500	1	11/09/2019 15:31	WG1377928
Trichloroethene	0.484	<u>J</u>	0.153	0.500	1	11/09/2019 15:31	WG1377928
Trichlorofluoromethane	U		0.130	2.50	1	11/09/2019 15:31	WG1377928
1,2,3-Trichloropropane	U		0.247	2.50	1	11/09/2019 15:31	WG1377928
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/09/2019 15:31	WG1377928
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/09/2019 15:31	WG1377928
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/09/2019 15:31	WG1377928

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	11/09/2019 15:31	WG1377928
Vinyl chloride	67.2		0.118	0.500	1	11/09/2019 15:31	WG1377928
Xylenes, Total	U		0.316	1.50	1	11/09/2019 15:31	WG1377928
(S) Toluene-d8	93.8			80.0-120		11/09/2019 15:31	WG1377928
(S) Toluene-d8	98.3			80.0-120		11/12/2019 20:14	WG1378777
(S) 4-Bromofluorobenzene	96.4			77.0-126		11/09/2019 15:31	WG1377928
(S) 4-Bromofluorobenzene	99.2			77.0-126		11/12/2019 20:14	WG1378777
(S) 1,2-Dichloroethane-d4	93.8			70.0-130		11/09/2019 15:31	WG1377928
(S) 1,2-Dichloroethane-d4	90.4			70.0-130		11/12/2019 20:14	WG1378777

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	593000		2710	20000	1	11/07/2019 20:23	WG1376785

Sample Narrative:

L1156483-03 WG1376785: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	99300		51.9	1000	1	11/02/2019 17:51	WG1373953
Nitrate	U		22.7	100	1	11/02/2019 17:51	WG1373953
Sulfate	17800		77.4	5000	1	11/02/2019 17:51	WG1373953

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	15300		102	1000	1	11/06/2019 07:27	WG1375433

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	9630		15.0	100	1	11/06/2019 16:30	WG1375892
Manganese	1730		0.250	5.00	1	11/06/2019 16:30	WG1375892

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	11/09/2019 02:16	WG1376401
(S) a,a,a-Trifluorotoluene(FID)	106			78.0-120		11/09/2019 02:16	WG1376401

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	21600		2.87	6.78	10	11/06/2019 15:33	WG1375796
Ethane	214		0.296	1.29	1	11/05/2019 16:48	WG1375047
Ethene	165		0.422	1.27	1	11/05/2019 16:48	WG1375047

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	3.56	J	1.05	25.0	1	11/12/2019 20:35	WG1378777
Acrylonitrile	U		0.873	5.00	1	11/09/2019 15:50	WG1377928
Benzene	U		0.0896	0.500	1	11/09/2019 15:50	WG1377928
Bromobenzene	U		0.133	0.500	1	11/09/2019 15:50	WG1377928
Bromodichloromethane	U		0.0800	0.500	1	11/09/2019 15:50	WG1377928
Bromochloromethane	U		0.145	0.500	1	11/09/2019 15:50	WG1377928
Bromoform	U		0.186	0.500	1	11/09/2019 15:50	WG1377928
Bromomethane	U	JO	0.157	2.50	1	11/09/2019 15:50	WG1377928
n-Butylbenzene	U		0.143	0.500	1	11/09/2019 15:50	WG1377928
sec-Butylbenzene	U		0.134	0.500	1	11/09/2019 15:50	WG1377928
tert-Butylbenzene	U		0.183	0.500	1	11/09/2019 15:50	WG1377928
Carbon disulfide	U		0.101	0.500	1	11/09/2019 15:50	WG1377928
Carbon tetrachloride	U		0.159	0.500	1	11/09/2019 15:50	WG1377928

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 11/01/19 12:20

L1156483

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/09/2019 15:50	WG1377928
Chlorodibromomethane	U		0.128	0.500	1	11/09/2019 15:50	WG1377928
Chloroethane	U		0.141	2.50	1	11/09/2019 15:50	WG1377928
Chloroform	1.28		0.0860	0.500	1	11/09/2019 15:50	WG1377928
Chloromethane	U	<u>JO</u>	0.153	1.25	1	11/09/2019 15:50	WG1377928
2-Chlorotoluene	U		0.111	0.500	1	11/09/2019 15:50	WG1377928
4-Chlorotoluene	U		0.0972	0.500	1	11/09/2019 15:50	WG1377928
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/09/2019 15:50	WG1377928
1,2-Dibromoethane	U		0.193	0.500	1	11/09/2019 15:50	WG1377928
Dibromomethane	U		0.117	0.500	1	11/09/2019 15:50	WG1377928
1,2-Dichlorobenzene	U		0.101	0.500	1	11/09/2019 15:50	WG1377928
1,3-Dichlorobenzene	U		0.130	0.500	1	11/09/2019 15:50	WG1377928
1,4-Dichlorobenzene	U		0.121	0.500	1	11/09/2019 15:50	WG1377928
Dichlorodifluoromethane	U	<u>J4</u>	0.127	2.50	1	11/09/2019 15:50	WG1377928
1,1-Dichloroethane	U		0.114	0.500	1	11/09/2019 15:50	WG1377928
1,2-Dichloroethane	U		0.108	0.500	1	11/09/2019 15:50	WG1377928
1,1-Dichloroethene	U		0.188	0.500	1	11/09/2019 15:50	WG1377928
cis-1,2-Dichloroethene	0.286	<u>J</u>	0.0933	0.500	1	11/09/2019 15:50	WG1377928
trans-1,2-Dichloroethene	1.07		0.152	0.500	1	11/09/2019 15:50	WG1377928
1,2-Dichloropropane	U		0.190	0.500	1	11/09/2019 15:50	WG1377928
1,1-Dichloropropene	U		0.128	0.500	1	11/09/2019 15:50	WG1377928
1,3-Dichloropropane	U		0.147	1.00	1	11/09/2019 15:50	WG1377928
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/09/2019 15:50	WG1377928
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/09/2019 15:50	WG1377928
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/09/2019 15:50	WG1377928
2,2-Dichloropropane	U		0.0929	0.500	1	11/09/2019 15:50	WG1377928
Di-isopropyl ether	U		0.0924	0.500	1	11/09/2019 15:50	WG1377928
Ethylbenzene	U		0.158	0.500	1	11/09/2019 15:50	WG1377928
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/09/2019 15:50	WG1377928
2-Hexanone	U		0.757	5.00	1	11/09/2019 15:50	WG1377928
n-Hexane	U		0.305	5.00	1	11/09/2019 15:50	WG1377928
Iodomethane	U	<u>JO</u>	0.377	10.0	1	11/09/2019 15:50	WG1377928
Isopropylbenzene	U		0.126	0.500	1	11/09/2019 15:50	WG1377928
p-Isopropyltoluene	U		0.138	0.500	1	11/09/2019 15:50	WG1377928
2-Butanone (MEK)	U		1.28	5.00	1	11/09/2019 15:50	WG1377928
Methylene Chloride	U		1.07	2.50	1	11/09/2019 15:50	WG1377928
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/09/2019 15:50	WG1377928
Methyl tert-butyl ether	U		0.102	0.500	1	11/09/2019 15:50	WG1377928
Naphthalene	U		0.174	2.50	1	11/09/2019 15:50	WG1377928
n-Propylbenzene	U		0.162	0.500	1	11/09/2019 15:50	WG1377928
Styrene	U		0.117	0.500	1	11/09/2019 15:50	WG1377928
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/09/2019 15:50	WG1377928
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/09/2019 15:50	WG1377928
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/09/2019 15:50	WG1377928
Tetrachloroethene	U		0.199	0.500	1	11/09/2019 15:50	WG1377928
Toluene	U		0.412	0.500	1	11/09/2019 15:50	WG1377928
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/09/2019 15:50	WG1377928
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/09/2019 15:50	WG1377928
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/09/2019 15:50	WG1377928
1,1,2-Trichloroethane	U		0.186	0.500	1	11/09/2019 15:50	WG1377928
Trichloroethene	U		0.153	0.500	1	11/09/2019 15:50	WG1377928
Trichlorofluoromethane	U		0.130	2.50	1	11/09/2019 15:50	WG1377928
1,2,3-Trichloropropane	U		0.247	2.50	1	11/09/2019 15:50	WG1377928
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/09/2019 15:50	WG1377928
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/09/2019 15:50	WG1377928
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/09/2019 15:50	WG1377928

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	11/09/2019 15:50	WG1377928
Vinyl chloride	6.85		0.118	0.500	1	11/09/2019 15:50	WG1377928
Xylenes, Total	U		0.316	1.50	1	11/09/2019 15:50	WG1377928
(S) Toluene-d8	93.7			80.0-120		11/09/2019 15:50	WG1377928
(S) Toluene-d8	95.0			80.0-120		11/12/2019 20:35	WG1378777
(S) 4-Bromofluorobenzene	94.6			77.0-126		11/09/2019 15:50	WG1377928
(S) 4-Bromofluorobenzene	91.9			77.0-126		11/12/2019 20:35	WG1378777
(S) 1,2-Dichloroethane-d4	90.0			70.0-130		11/09/2019 15:50	WG1377928
(S) 1,2-Dichloroethane-d4	92.7			70.0-130		11/12/2019 20:35	WG1378777

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	351000		2710	20000	1	11/07/2019 21:22	WG1376785

Sample Narrative:

L1156483-04 WG1376785: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	66300		51.9	1000	1	11/02/2019 18:26	WG1373953
Nitrate	U		22.7	100	1	11/02/2019 18:26	WG1373953
Sulfate	224000		387	25000	5	11/03/2019 23:01	WG1373953

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	32100		102	1000	1	11/06/2019 20:00	WG1376183

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	800		15.0	100	1	11/06/2019 16:33	WG1375892
Manganese	178		0.250	5.00	1	11/06/2019 16:33	WG1375892

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	11/09/2019 03:04	WG1376401
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120		11/09/2019 03:04	WG1376401

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	1670		0.287	0.678	1	11/05/2019 16:59	WG1375047
Ethane	16.4		0.296	1.29	1	11/05/2019 16:59	WG1375047
Ethene	323		0.422	1.27	1	11/05/2019 16:59	WG1375047

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	12.5	J	10.5	250	10	11/12/2019 20:56	WG1378777
Acrylonitrile	U		0.873	5.00	1	11/09/2019 16:10	WG1377928
Benzene	U		0.0896	0.500	1	11/09/2019 16:10	WG1377928
Bromobenzene	U		0.133	0.500	1	11/09/2019 16:10	WG1377928
Bromodichloromethane	U		0.0800	0.500	1	11/09/2019 16:10	WG1377928
Bromochloromethane	U		0.145	0.500	1	11/09/2019 16:10	WG1377928
Bromoform	U		0.186	0.500	1	11/09/2019 16:10	WG1377928
Bromomethane	U	JO	0.157	2.50	1	11/09/2019 16:10	WG1377928
n-Butylbenzene	U		0.143	0.500	1	11/09/2019 16:10	WG1377928
sec-Butylbenzene	U		0.134	0.500	1	11/09/2019 16:10	WG1377928
tert-Butylbenzene	U		0.183	0.500	1	11/09/2019 16:10	WG1377928
Carbon disulfide	0.573		0.101	0.500	1	11/09/2019 16:10	WG1377928
Carbon tetrachloride	U		0.159	0.500	1	11/09/2019 16:10	WG1377928

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/09/2019 16:10	WG1377928
Chlorodibromomethane	U		0.128	0.500	1	11/09/2019 16:10	WG1377928
Chloroethane	U		0.141	2.50	1	11/09/2019 16:10	WG1377928
Chloroform	0.810		0.0860	0.500	1	11/09/2019 16:10	WG1377928
Chloromethane	U	<u>JO</u>	0.153	1.25	1	11/09/2019 16:10	WG1377928
2-Chlorotoluene	U		0.111	0.500	1	11/09/2019 16:10	WG1377928
4-Chlorotoluene	U		0.0972	0.500	1	11/09/2019 16:10	WG1377928
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/09/2019 16:10	WG1377928
1,2-Dibromoethane	U		0.193	0.500	1	11/09/2019 16:10	WG1377928
Dibromomethane	U		0.117	0.500	1	11/09/2019 16:10	WG1377928
1,2-Dichlorobenzene	U		0.101	0.500	1	11/09/2019 16:10	WG1377928
1,3-Dichlorobenzene	U		0.130	0.500	1	11/09/2019 16:10	WG1377928
1,4-Dichlorobenzene	U		0.121	0.500	1	11/09/2019 16:10	WG1377928
Dichlorodifluoromethane	U	<u>J4</u>	0.127	2.50	1	11/09/2019 16:10	WG1377928
1,1-Dichloroethane	U		0.114	0.500	1	11/09/2019 16:10	WG1377928
1,2-Dichloroethane	U		0.108	0.500	1	11/09/2019 16:10	WG1377928
1,1-Dichloroethene	0.661		0.188	0.500	1	11/09/2019 16:10	WG1377928
cis-1,2-Dichloroethene	258		0.933	5.00	10	11/12/2019 20:56	WG1378777
trans-1,2-Dichloroethene	6.03		0.152	0.500	1	11/09/2019 16:10	WG1377928
1,2-Dichloropropane	U		0.190	0.500	1	11/09/2019 16:10	WG1377928
1,1-Dichloropropene	U		0.128	0.500	1	11/09/2019 16:10	WG1377928
1,3-Dichloropropane	U		0.147	1.00	1	11/09/2019 16:10	WG1377928
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/09/2019 16:10	WG1377928
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/09/2019 16:10	WG1377928
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/09/2019 16:10	WG1377928
2,2-Dichloropropane	U		0.0929	0.500	1	11/09/2019 16:10	WG1377928
Di-isopropyl ether	U		0.0924	0.500	1	11/09/2019 16:10	WG1377928
Ethylbenzene	U		0.158	0.500	1	11/09/2019 16:10	WG1377928
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/09/2019 16:10	WG1377928
2-Hexanone	U		0.757	5.00	1	11/09/2019 16:10	WG1377928
n-Hexane	U		0.305	5.00	1	11/09/2019 16:10	WG1377928
Iodomethane	U	<u>JO</u>	0.377	10.0	1	11/09/2019 16:10	WG1377928
Isopropylbenzene	U		0.126	0.500	1	11/09/2019 16:10	WG1377928
p-Isopropyltoluene	U		0.138	0.500	1	11/09/2019 16:10	WG1377928
2-Butanone (MEK)	U		1.28	5.00	1	11/09/2019 16:10	WG1377928
Methylene Chloride	U		1.07	2.50	1	11/09/2019 16:10	WG1377928
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/09/2019 16:10	WG1377928
Methyl tert-butyl ether	U		0.102	0.500	1	11/09/2019 16:10	WG1377928
Naphthalene	U		0.174	2.50	1	11/09/2019 16:10	WG1377928
n-Propylbenzene	U		0.162	0.500	1	11/09/2019 16:10	WG1377928
Styrene	U		0.117	0.500	1	11/09/2019 16:10	WG1377928
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/09/2019 16:10	WG1377928
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/09/2019 16:10	WG1377928
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/09/2019 16:10	WG1377928
Tetrachloroethene	1.25		0.199	0.500	1	11/09/2019 16:10	WG1377928
Toluene	0.671		0.412	0.500	1	11/09/2019 16:10	WG1377928
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/09/2019 16:10	WG1377928
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/09/2019 16:10	WG1377928
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/09/2019 16:10	WG1377928
1,1,2-Trichloroethane	U		0.186	0.500	1	11/09/2019 16:10	WG1377928
Trichloroethene	1.73		0.153	0.500	1	11/09/2019 16:10	WG1377928
Trichlorofluoromethane	U		0.130	2.50	1	11/09/2019 16:10	WG1377928
1,2,3-Trichloropropane	U		0.247	2.50	1	11/09/2019 16:10	WG1377928
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/09/2019 16:10	WG1377928
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/09/2019 16:10	WG1377928
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/09/2019 16:10	WG1377928

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	11/09/2019 16:10	WG1377928
Vinyl chloride	41.5		0.118	0.500	1	11/09/2019 16:10	WG1377928
Xylenes, Total	U		0.316	1.50	1	11/09/2019 16:10	WG1377928
(S) Toluene-d8	92.9			80.0-120		11/09/2019 16:10	WG1377928
(S) Toluene-d8	94.8			80.0-120		11/12/2019 20:56	WG1378777
(S) 4-Bromofluorobenzene	93.4			77.0-126		11/09/2019 16:10	WG1377928
(S) 4-Bromofluorobenzene	94.8			77.0-126		11/12/2019 20:56	WG1378777
(S) 1,2-Dichloroethane-d4	94.8			70.0-130		11/09/2019 16:10	WG1377928
(S) 1,2-Dichloroethane-d4	93.9			70.0-130		11/12/2019 20:56	WG1378777

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	358000		2710	20000	1	11/07/2019 21:30	WG1376785

Sample Narrative:

L1156483-05 WG1376785: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	12300		51.9	1000	1	11/02/2019 18:43	WG1373953
Nitrate	U		22.7	100	1	11/02/2019 18:43	WG1373953
Sulfate	15200		77.4	5000	1	11/02/2019 18:43	WG1373953

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1650	<u>B</u>	102	1000	1	11/06/2019 20:22	WG1376183

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	351		15.0	100	1	11/06/2019 16:37	WG1375892
Manganese	310		0.250	5.00	1	11/06/2019 16:37	WG1375892

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	11/09/2019 07:26	WG1376401
(S) a,a,a-Trifluorotoluene(FID)	104			78.0-120		11/09/2019 07:26	WG1376401

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	20.4		0.287	0.678	1	11/05/2019 17:01	WG1375047
Ethane	U		0.296	1.29	1	11/05/2019 17:01	WG1375047
Ethene	U		0.422	1.27	1	11/05/2019 17:01	WG1375047

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U		1.05	25.0	1	11/12/2019 21:17	WG1378777
Acrylonitrile	U		0.873	5.00	1	11/09/2019 16:29	WG1377928
Benzene	U		0.0896	0.500	1	11/09/2019 16:29	WG1377928
Bromobenzene	U		0.133	0.500	1	11/09/2019 16:29	WG1377928
Bromodichloromethane	U		0.0800	0.500	1	11/09/2019 16:29	WG1377928
Bromochloromethane	U		0.145	0.500	1	11/09/2019 16:29	WG1377928
Bromoform	U		0.186	0.500	1	11/09/2019 16:29	WG1377928
Bromomethane	U	<u>JO</u>	0.157	2.50	1	11/09/2019 16:29	WG1377928
n-Butylbenzene	U		0.143	0.500	1	11/09/2019 16:29	WG1377928
sec-Butylbenzene	U		0.134	0.500	1	11/09/2019 16:29	WG1377928
tert-Butylbenzene	U		0.183	0.500	1	11/09/2019 16:29	WG1377928
Carbon disulfide	0.195	<u>J</u>	0.101	0.500	1	11/09/2019 16:29	WG1377928
Carbon tetrachloride	U		0.159	0.500	1	11/09/2019 16:29	WG1377928

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	11/09/2019 16:29	WG1377928
Chlorodibromomethane	U		0.128	0.500	1	11/09/2019 16:29	WG1377928
Chloroethane	U		0.141	2.50	1	11/09/2019 16:29	WG1377928
Chloroform	U		0.0860	0.500	1	11/09/2019 16:29	WG1377928
Chloromethane	U	<u>JO</u>	0.153	1.25	1	11/09/2019 16:29	WG1377928
2-Chlorotoluene	U		0.111	0.500	1	11/09/2019 16:29	WG1377928
4-Chlorotoluene	U		0.0972	0.500	1	11/09/2019 16:29	WG1377928
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/09/2019 16:29	WG1377928
1,2-Dibromoethane	U		0.193	0.500	1	11/09/2019 16:29	WG1377928
Dibromomethane	U		0.117	0.500	1	11/09/2019 16:29	WG1377928
1,2-Dichlorobenzene	U		0.101	0.500	1	11/09/2019 16:29	WG1377928
1,3-Dichlorobenzene	U		0.130	0.500	1	11/09/2019 16:29	WG1377928
1,4-Dichlorobenzene	U		0.121	0.500	1	11/09/2019 16:29	WG1377928
Dichlorodifluoromethane	U	<u>J4</u>	0.127	2.50	1	11/09/2019 16:29	WG1377928
1,1-Dichloroethane	U		0.114	0.500	1	11/09/2019 16:29	WG1377928
1,2-Dichloroethane	U		0.108	0.500	1	11/09/2019 16:29	WG1377928
1,1-Dichloroethene	U		0.188	0.500	1	11/09/2019 16:29	WG1377928
cis-1,2-Dichloroethene	U		0.0933	0.500	1	11/12/2019 21:17	WG1378777
trans-1,2-Dichloroethene	U		0.152	0.500	1	11/09/2019 16:29	WG1377928
1,2-Dichloropropane	U		0.190	0.500	1	11/09/2019 16:29	WG1377928
1,1-Dichloropropene	U		0.128	0.500	1	11/09/2019 16:29	WG1377928
1,3-Dichloropropane	U		0.147	1.00	1	11/09/2019 16:29	WG1377928
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/09/2019 16:29	WG1377928
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/09/2019 16:29	WG1377928
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/09/2019 16:29	WG1377928
2,2-Dichloropropane	U		0.0929	0.500	1	11/09/2019 16:29	WG1377928
Di-isopropyl ether	U		0.0924	0.500	1	11/09/2019 16:29	WG1377928
Ethylbenzene	U		0.158	0.500	1	11/09/2019 16:29	WG1377928
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/09/2019 16:29	WG1377928
2-Hexanone	U		0.757	5.00	1	11/09/2019 16:29	WG1377928
n-Hexane	U		0.305	5.00	1	11/09/2019 16:29	WG1377928
Iodomethane	U	<u>JO</u>	0.377	10.0	1	11/09/2019 16:29	WG1377928
Isopropylbenzene	U		0.126	0.500	1	11/09/2019 16:29	WG1377928
p-Isopropyltoluene	U		0.138	0.500	1	11/09/2019 16:29	WG1377928
2-Butanone (MEK)	U		1.28	5.00	1	11/09/2019 16:29	WG1377928
Methylene Chloride	U		1.07	2.50	1	11/09/2019 16:29	WG1377928
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/09/2019 16:29	WG1377928
Methyl tert-butyl ether	U		0.102	0.500	1	11/09/2019 16:29	WG1377928
Naphthalene	U		0.174	2.50	1	11/09/2019 16:29	WG1377928
n-Propylbenzene	U		0.162	0.500	1	11/09/2019 16:29	WG1377928
Styrene	U		0.117	0.500	1	11/09/2019 16:29	WG1377928
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/09/2019 16:29	WG1377928
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/09/2019 16:29	WG1377928
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/09/2019 16:29	WG1377928
Tetrachloroethene	U		0.199	0.500	1	11/09/2019 16:29	WG1377928
Toluene	U		0.412	0.500	1	11/09/2019 16:29	WG1377928
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/09/2019 16:29	WG1377928
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/09/2019 16:29	WG1377928
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/09/2019 16:29	WG1377928
1,1,2-Trichloroethane	U		0.186	0.500	1	11/09/2019 16:29	WG1377928
Trichloroethene	U		0.153	0.500	1	11/09/2019 16:29	WG1377928
Trichlorofluoromethane	U		0.130	2.50	1	11/09/2019 16:29	WG1377928
1,2,3-Trichloropropane	U		0.247	2.50	1	11/09/2019 16:29	WG1377928
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/09/2019 16:29	WG1377928
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/09/2019 16:29	WG1377928
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/09/2019 16:29	WG1377928

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	11/09/2019 16:29	WG1377928
Vinyl chloride	U		0.118	0.500	1	11/09/2019 16:29	WG1377928
Xylenes, Total	U		0.316	1.50	1	11/09/2019 16:29	WG1377928
<i>(S) Toluene-d8</i>	90.8			80.0-120		11/09/2019 16:29	WG1377928
<i>(S) Toluene-d8</i>	97.2			80.0-120		11/12/2019 21:17	WG1378777
<i>(S) 4-Bromofluorobenzene</i>	93.7			77.0-126		11/09/2019 16:29	WG1377928
<i>(S) 4-Bromofluorobenzene</i>	98.5			77.0-126		11/12/2019 21:17	WG1378777
<i>(S) 1,2-Dichloroethane-d4</i>	91.8			70.0-130		11/09/2019 16:29	WG1377928
<i>(S) 1,2-Dichloroethane-d4</i>	92.4			70.0-130		11/12/2019 21:17	WG1378777

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	11/09/2019 01:28	WG1376401
(S) a,a,a-Trifluorotoluene(FID)	103			78.0-120		11/09/2019 01:28	WG1376401

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.38	J	1.05	25.0	1	11/12/2019 19:11	WG1378777
Acrylonitrile	U		0.873	5.00	1	11/09/2019 12:34	WG1377928
Benzene	U		0.0896	0.500	1	11/09/2019 12:34	WG1377928
Bromobenzene	U		0.133	0.500	1	11/09/2019 12:34	WG1377928
Bromodichloromethane	U		0.0800	0.500	1	11/09/2019 12:34	WG1377928
Bromochloromethane	U		0.145	0.500	1	11/09/2019 12:34	WG1377928
Bromoform	U		0.186	0.500	1	11/09/2019 12:34	WG1377928
Bromomethane	U	JO	0.157	2.50	1	11/09/2019 12:34	WG1377928
n-Butylbenzene	U		0.143	0.500	1	11/09/2019 12:34	WG1377928
sec-Butylbenzene	U		0.134	0.500	1	11/09/2019 12:34	WG1377928
tert-Butylbenzene	U		0.183	0.500	1	11/09/2019 12:34	WG1377928
Carbon disulfide	U		0.101	0.500	1	11/09/2019 12:34	WG1377928
Carbon tetrachloride	U		0.159	0.500	1	11/09/2019 12:34	WG1377928
Chlorobenzene	U		0.140	0.500	1	11/09/2019 12:34	WG1377928
Chlorodibromomethane	U		0.128	0.500	1	11/09/2019 12:34	WG1377928
Chloroethane	U		0.141	2.50	1	11/09/2019 12:34	WG1377928
Chloroform	U		0.0860	0.500	1	11/09/2019 12:34	WG1377928
Chloromethane	U	JO	0.153	1.25	1	11/09/2019 12:34	WG1377928
2-Chlorotoluene	U		0.111	0.500	1	11/09/2019 12:34	WG1377928
4-Chlorotoluene	U		0.0972	0.500	1	11/09/2019 12:34	WG1377928
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/09/2019 12:34	WG1377928
1,2-Dibromoethane	U		0.193	0.500	1	11/09/2019 12:34	WG1377928
Dibromomethane	U		0.117	0.500	1	11/09/2019 12:34	WG1377928
1,2-Dichlorobenzene	U		0.101	0.500	1	11/09/2019 12:34	WG1377928
1,3-Dichlorobenzene	U		0.130	0.500	1	11/09/2019 12:34	WG1377928
1,4-Dichlorobenzene	U		0.121	0.500	1	11/09/2019 12:34	WG1377928
Dichlorodifluoromethane	U	J4	0.127	2.50	1	11/09/2019 12:34	WG1377928
1,1-Dichloroethane	U		0.114	0.500	1	11/09/2019 12:34	WG1377928
1,2-Dichloroethane	U		0.108	0.500	1	11/09/2019 12:34	WG1377928
1,1-Dichloroethene	U		0.188	0.500	1	11/09/2019 12:34	WG1377928
cis-1,2-Dichloroethene	0.175	J	0.0933	0.500	1	11/09/2019 12:34	WG1377928
trans-1,2-Dichloroethene	U		0.152	0.500	1	11/09/2019 12:34	WG1377928
1,2-Dichloropropane	U		0.190	0.500	1	11/09/2019 12:34	WG1377928
1,1-Dichloropropene	U		0.128	0.500	1	11/09/2019 12:34	WG1377928
1,3-Dichloropropane	U		0.147	1.00	1	11/09/2019 12:34	WG1377928
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/09/2019 12:34	WG1377928
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/09/2019 12:34	WG1377928
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/09/2019 12:34	WG1377928
2,2-Dichloropropane	U		0.0929	0.500	1	11/09/2019 12:34	WG1377928
Di-isopropyl ether	U		0.0924	0.500	1	11/09/2019 12:34	WG1377928
Ethylbenzene	U		0.158	0.500	1	11/09/2019 12:34	WG1377928
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/09/2019 12:34	WG1377928
2-Hexanone	U		0.757	5.00	1	11/09/2019 12:34	WG1377928
n-Hexane	U		0.305	5.00	1	11/09/2019 12:34	WG1377928
Iodomethane	U	JO	0.377	10.0	1	11/09/2019 12:34	WG1377928
Isopropylbenzene	U		0.126	0.500	1	11/09/2019 12:34	WG1377928
p-Isopropyltoluene	U		0.138	0.500	1	11/09/2019 12:34	WG1377928
2-Butanone (MEK)	U		1.28	5.00	1	11/09/2019 12:34	WG1377928



Collected date/time: 11/01/19 15:00

L1156483

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methylene Chloride	U		1.07	2.50	1	11/09/2019 12:34	WG1377928
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/09/2019 12:34	WG1377928
Methyl tert-butyl ether	U		0.102	0.500	1	11/09/2019 12:34	WG1377928
Naphthalene	U		0.174	2.50	1	11/09/2019 12:34	WG1377928
n-Propylbenzene	U		0.162	0.500	1	11/09/2019 12:34	WG1377928
Styrene	U		0.117	0.500	1	11/09/2019 12:34	WG1377928
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/09/2019 12:34	WG1377928
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/09/2019 12:34	WG1377928
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/09/2019 12:34	WG1377928
Tetrachloroethene	U		0.199	0.500	1	11/09/2019 12:34	WG1377928
Toluene	U		0.412	0.500	1	11/09/2019 12:34	WG1377928
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/09/2019 12:34	WG1377928
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/09/2019 12:34	WG1377928
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/09/2019 12:34	WG1377928
1,1,2-Trichloroethane	U		0.186	0.500	1	11/09/2019 12:34	WG1377928
Trichloroethene	0.166	U	0.153	0.500	1	11/09/2019 12:34	WG1377928
Trichlorofluoromethane	U		0.130	2.50	1	11/09/2019 12:34	WG1377928
1,2,3-Trichloropropane	U		0.247	2.50	1	11/09/2019 12:34	WG1377928
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/09/2019 12:34	WG1377928
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/09/2019 12:34	WG1377928
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/09/2019 12:34	WG1377928
Vinyl acetate	U		0.645	5.00	1	11/09/2019 12:34	WG1377928
Vinyl chloride	U		0.118	0.500	1	11/09/2019 12:34	WG1377928
Xylenes, Total	U		0.316	1.50	1	11/09/2019 12:34	WG1377928
(S) Toluene-d8	92.3			80.0-120		11/09/2019 12:34	WG1377928
(S) Toluene-d8	96.4			80.0-120		11/12/2019 19:11	WG1378777
(S) 4-Bromofluorobenzene	93.1			77.0-126		11/09/2019 12:34	WG1377928
(S) 4-Bromofluorobenzene	94.2			77.0-126		11/12/2019 19:11	WG1378777
(S) 1,2-Dichloroethane-d4	94.9			70.0-130		11/09/2019 12:34	WG1377928
(S) 1,2-Dichloroethane-d4	89.2			70.0-130		11/12/2019 19:11	WG1378777

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3470045-1 11/07/19 18:55

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	3380	↓	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1155532-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1155532-01 11/07/19 19:05 • (DUP) R3470045-2 11/07/19 19:12

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	168000	169000	1	0.569		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

L1156491-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1156491-01 11/07/19 21:55 • (DUP) R3470045-4 11/07/19 22:03

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	107000	110000	1	2.76		20

Sample Narrative:

OS: Endpoint pH 4.5

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3470045-3 11/07/19 20:14

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	99700	99.7	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3467998-1 11/02/19 08:43

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Chloride	U		51.9	1000
Nitrate	U		22.7	100
Sulfate	U		77.4	5000

L1156445-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1156445-01 11/02/19 12:20 • (DUP) R3467998-3 11/02/19 12:40

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	68400	68400	1	0.0712		15
Nitrate	U	0.000	1	0.000		15
Sulfate	28000	28100	1	0.163		15

L1156483-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1156483-05 11/02/19 18:43 • (DUP) R3467998-6 11/02/19 19:01

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	12300	12300	1	0.271		15
Nitrate	U	0.000	1	0.000		15
Sulfate	15200	15200	1	0.0263		15

Laboratory Control Sample (LCS)

(LCS) R3467998-2 11/02/19 09:01

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Chloride	40000	38900	97.4	80.0-120	
Nitrate	8000	8110	101	80.0-120	
Sulfate	40000	39400	98.5	80.0-120	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



L1156445-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1156445-01 11/02/19 12:20 • (MS) R3467998-4 11/02/19 12:57 • (MSD) R3467998-5 11/02/19 13:14

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	68400	115000	116000	94.1	94.9	1	80.0-120	E	E	0.338	15
Nitrate	5000	U	4980	5000	99.7	100	1	80.0-120			0.369	15
Sulfate	50000	28000	77100	77500	98.2	99.0	1	80.0-120			0.516	15

L1156483-05 Original Sample (OS) • Matrix Spike (MS)

(OS) L1156483-05 11/02/19 18:43 • (MS) R3467998-7 11/02/19 19:19

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	12300	62400	100	1	80.0-120	
Nitrate	5000	U	5120	102	1	80.0-120	
Sulfate	50000	15200	64900	99.5	1	80.0-120	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3468961-1 11/05/19 20:18

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	345	↓	102	1000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1156109-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1156109-01 11/05/19 22:49 • (DUP) R3468961-3 11/05/19 23:09

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	16800	16400	1	2.11		20

L1156246-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1156246-04 11/06/19 02:54 • (DUP) R3468961-6 11/06/19 03:11

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	ND	578	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3468961-2 11/05/19 20:58

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC (Total Organic Carbon)	75000	74100	98.8	85.0-115	

L1156483-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1156483-01 11/06/19 06:03 • (MS) R3468961-7 11/06/19 06:25 • (MSD) R3468961-8 11/06/19 06:44

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	27500	76700	77000	98.5	99.1	1	80.0-120			0.390	20



Method Blank (MB)

(MB) R3469533-1 11/06/19 18:42

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	421	↓	102	1000

1 Cp

2 Tc

3 Ss

L1156488-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1156488-04 11/06/19 23:59 • (DUP) R3469533-5 11/07/19 00:20

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	1860000	2190000	200	16.6		20

4 Cn

5 Sr

L1157016-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1157016-03 11/07/19 07:09 • (DUP) R3469533-8 11/07/19 07:28

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	19600	19700	1	0.255		20

6 Qc

7 Gl

8 Al

Laboratory Control Sample (LCS)

(LCS) R3469533-2 11/06/19 19:23

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC (Total Organic Carbon)	75000	73800	98.4	85.0-115	

9 Sc



Method Blank (MB)

(MB) R3469130-1 11/06/19 15:35

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Iron	U		15.0	100
Manganese	0.432	J	0.250	5.00

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3469130-2 11/06/19 15:38 • (LCSD) R3469130-3 11/06/19 15:42

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Iron	5000	5010	5040	100	101	80.0-120			0.571	20
Manganese	50.0	51.3	51.1	103	102	80.0-120			0.320	20

5 Sr

6 Qc

L1154680-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1154680-01 11/06/19 15:45 • (MS) R3469130-5 11/06/19 15:52 • (MSD) R3469130-6 11/06/19 15:55

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Iron	5000	242	5080	5080	96.8	96.7	1	75.0-125			0.0771	20
Manganese	50.0	163	206	208	86.2	89.0	1	75.0-125			0.673	20

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3470375-2 11/07/19 09:28

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	103			78.0-120

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3470375-1 11/07/19 01:58 • (LCSD) R3470375-3 11/07/19 18:28

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	5980	6380	109	116	70.0-124			6.47	20
(S) a,a,a-Trifluorotoluene(FID)				90.7	92.8	78.0-120				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3470598-2 11/09/19 01:04

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS)

(LCS) R3470598-1 11/09/19 00:16

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	6780	123	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			90.6	78.0-120	

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3468700-1 11/05/19 15:11

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1156461-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1156461-01 11/05/19 15:13 • (DUP) R3468700-2 11/05/19 16:20

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	ND	0.000	1	0.000		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

L1156483-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1156483-01 11/05/19 17:05 • (DUP) R3468700-3 11/05/19 17:14

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	33.6	32.3	1	3.95		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3468700-4 11/05/19 17:20 • (LCSD) R3468700-5 11/05/19 17:23

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	73.6	75.6	109	112	85.0-115			2.68	20
Ethane	129	135	137	105	106	85.0-115			1.47	20
Ethene	127	141	143	111	113	85.0-115			1.41	20



Method Blank (MB)

(MB) R3469162-1 11/06/19 15:06

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Methane	U		0.287	0.678

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1156331-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1156331-01 11/06/19 15:12 • (DUP) R3469162-2 11/06/19 15:41

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	54.9	58.6	1	6.52		20

L1156667-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1156667-07 11/06/19 16:47 • (DUP) R3469162-3 11/06/19 16:54

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3469162-4 11/06/19 16:56 • (LCSD) R3469162-5 11/06/19 16:59

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Methane	67.8	73.2	77.7	108	115	85.0-115			5.96	20



Method Blank (MB)

(MB) R3470751-2 11/09/19 06:45

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500
Ethylbenzene	U		0.158	0.500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3470751-2 11/09/19 06:45

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,2,4-Trimethylbenzene	U		0.123	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	90.6			80.0-120
(S) 4-Bromofluorobenzene	92.0			77.0-126
(S) 1,2-Dichloroethane-d4	93.3			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3470751-1 11/09/19 06:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Acrylonitrile	25.0	29.4	118	55.0-149	
Benzene	5.00	5.12	102	70.0-123	
Bromobenzene	5.00	5.03	101	73.0-121	
Bromodichloromethane	5.00	5.09	102	75.0-120	
Bromochloromethane	5.00	5.74	115	76.0-122	
Bromoform	5.00	4.82	96.4	68.0-132	
Bromomethane	5.00	3.09	61.8	10.0-160	
n-Butylbenzene	5.00	4.87	97.4	73.0-125	
sec-Butylbenzene	5.00	4.92	98.4	75.0-125	
tert-Butylbenzene	5.00	4.92	98.4	76.0-124	
Carbon disulfide	5.00	5.37	107	61.0-128	
Carbon tetrachloride	5.00	5.39	108	68.0-126	
Chlorobenzene	5.00	5.02	100	80.0-121	
Chlorodibromomethane	5.00	4.92	98.4	77.0-125	
Chloroethane	5.00	5.18	104	47.0-150	
Chloroform	5.00	4.96	99.2	73.0-120	
Chloromethane	5.00	4.23	84.6	41.0-142	
2-Chlorotoluene	5.00	4.97	99.4	76.0-123	
4-Chlorotoluene	5.00	4.90	98.0	75.0-122	
1,2-Dibromo-3-Chloropropane	5.00	6.09	122	58.0-134	
1,2-Dibromoethane	5.00	5.09	102	80.0-122	
Dibromomethane	5.00	5.59	112	80.0-120	
1,2-Dichlorobenzene	5.00	5.01	100	79.0-121	
1,3-Dichlorobenzene	5.00	5.09	102	79.0-120	
1,4-Dichlorobenzene	5.00	4.98	99.6	79.0-120	
trans-1,4-Dichloro-2-butene	5.00	5.68	114	33.0-144	
Dichlorodifluoromethane	5.00	7.73	155	51.0-149	J4
1,1-Dichloroethane	5.00	5.16	103	70.0-126	
1,2-Dichloroethane	5.00	5.28	106	70.0-128	
1,1-Dichloroethene	5.00	5.61	112	71.0-124	
cis-1,2-Dichloroethene	5.00	5.30	106	73.0-120	
trans-1,2-Dichloroethene	5.00	5.23	105	73.0-120	
1,2-Dichloropropane	5.00	4.88	97.6	77.0-125	
1,1-Dichloropropene	5.00	5.42	108	74.0-126	
1,3-Dichloropropane	5.00	5.25	105	80.0-120	
cis-1,3-Dichloropropene	5.00	4.80	96.0	80.0-123	
trans-1,3-Dichloropropene	5.00	5.06	101	78.0-124	
2,2-Dichloropropane	5.00	5.19	104	58.0-130	
Di-isopropyl ether	5.00	5.06	101	58.0-138	
Ethylbenzene	5.00	4.87	97.4	79.0-123	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3470751-1 11/09/19 06:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Hexachloro-1,3-butadiene	5.00	4.56	91.2	54.0-138	
2-Hexanone	25.0	30.2	121	67.0-149	
n-Hexane	5.00	5.53	111	57.0-133	
Iodomethane	25.0	17.2	68.8	33.0-147	
Isopropylbenzene	5.00	4.83	96.6	76.0-127	
p-Isopropyltoluene	5.00	4.79	95.8	76.0-125	
2-Butanone (MEK)	25.0	33.7	135	44.0-160	
Methylene Chloride	5.00	5.24	105	67.0-120	
4-Methyl-2-pentanone (MIBK)	25.0	27.8	111	68.0-142	
Methyl tert-butyl ether	5.00	5.58	112	68.0-125	
Naphthalene	5.00	5.39	108	54.0-135	
n-Propylbenzene	5.00	5.05	101	77.0-124	
Styrene	5.00	4.98	99.6	73.0-130	
1,1,1,2-Tetrachloroethane	5.00	4.81	96.2	75.0-125	
1,1,2,2-Tetrachloroethane	5.00	5.10	102	65.0-130	
Tetrachloroethene	5.00	5.10	102	72.0-132	
Toluene	5.00	4.76	95.2	79.0-120	
1,1,2-Trichlorotrifluoroethane	5.00	6.00	120	69.0-132	
1,2,3-Trichlorobenzene	5.00	4.99	99.8	50.0-138	
1,2,4-Trichlorobenzene	5.00	4.72	94.4	57.0-137	
1,1,1-Trichloroethane	5.00	5.75	115	73.0-124	
1,1,2-Trichloroethane	5.00	5.26	105	80.0-120	
Trichloroethene	5.00	5.66	113	78.0-124	
Trichlorofluoromethane	5.00	5.69	114	59.0-147	
1,2,3-Trichloropropane	5.00	6.11	122	73.0-130	
1,2,3-Trimethylbenzene	5.00	5.02	100	77.0-120	
1,2,4-Trimethylbenzene	5.00	4.99	99.8	76.0-121	
1,3,5-Trimethylbenzene	5.00	4.87	97.4	76.0-122	
Vinyl acetate	25.0	19.6	78.4	11.0-160	
Vinyl chloride	5.00	5.06	101	67.0-131	
Xylenes, Total	15.0	14.1	94.0	79.0-123	
(S) Toluene-d8			89.1	80.0-120	
(S) 4-Bromofluorobenzene			91.8	77.0-126	
(S) 1,2-Dichloroethane-d4			97.3	70.0-130	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3471304-1 11/12/19 10:29

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
cis-1,2-Dichloroethene	U		0.0933	0.500
(S) Toluene-d8	96.2			80.0-120
(S) 4-Bromofluorobenzene	97.3			77.0-126
(S) 1,2-Dichloroethane-d4	92.6			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

Laboratory Control Sample (LCS)

(LCS) R3471304-2 11/12/19 22:41

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	25.0	21.3	85.2	19.0-160	
cis-1,2-Dichloroethene	5.00	5.03	101	73.0-120	
(S) Toluene-d8			95.3	80.0-120	
(S) 4-Bromofluorobenzene			96.4	77.0-126	
(S) 1,2-Dichloroethane-d4			94.5	70.0-130	

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration method criteria.
J4	The associated batch QC was outside the established quality control range for accuracy.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

Company: PES Environmental, Inc.		Billing Information: Attn: Accounts Payable 1215 4th Ave STE 1350, Seattle, WA 98161	
Address: 1215 4th Ave STE 1350, Seattle, WA 98161		Email To: bhaldeman@pesenv.com; boneal@pesenv.com	
Report To: Bill Haldeman/Brian O'Neal		Site Collection Info/Address: 700 Dexter Ave N	
Copy To: Kim Vik, Shannon McKernan, Karsten Springstead		State: County/City: Time Zone Collected: WA / King/Seattle [x] PT [] MT [] CT [] ET	
Customer Project Name/Number: American Linen 1413.001.02.501E		Compliance Monitoring? [x] Yes [] No	
Phone: 206-529-3980	Site/Facility ID #: 1413.001.02.501E	DW PWS ID #:	
Email: mjoiner@pesenv.com	Purchase Order #: 1413.001.02.501E	DW Location Code:	
Collected By (print): K. Zygaw	Quote #: PESENVSWA-ALP	Immediately Packed on Ice: [x] Yes [] No	
Collected By (signature): K. Zygaw	Turnaround Date Required:	Field Filtered (if applicable): [] Yes [x] No	
Sample Disposal: [x] Dispose as appropriate [] Return [] Archive: [] Hold:	Rush: [] Same Day [] Next Day [] 2 Day [] 3 Day [] 4 Day [] 5 Day (Expedite Charges Apply)	Analysis:	

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Composite End		Res Cl	# of Ctns
			Date	Time	Date	Time		
MW-187-110119	GW	Grab	11-01-19	0910				12
MW-173-110119				1050				12
MW-174-110119				1220				12
MW-175-110119				1415				12
MW-176-110119				1330				12
IB-110119				1500				12
IB-110119			11-01-19	1500				1

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Container Preservative Type **

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

Analyses	Lab Profile/Line:	
	Lab Sample Receipt Checklist	Y N NA
NO3, SO4, Cl 125mIHDPPE-NoPres	Custody Seals Present/Intact	Y N NA
Alkalinity 125mIHDPPE-NoPres	Custody Signatures Present	Y N NA
EEM RSK175LL 40mIAmb-HCI	Collector Signature Present	Y N NA
TOC 250mIAmb-HCI or 250mIHDPPE-HCI	Bottles Intact	Y N NA
Total Fe, Mn 6020 250mIHDPPE-HNO3	Correct Bottles	Y N NA
VOCs 8260LLC 40mIAmb-HCI	Sufficient Volume	Y N NA
Grp by NWTPH-Gx	Samples Received on Ice	Y N NA
	VOA - Headspace Acceptable	Y N NA
	USDA Regulated Soils	Y N NA
	Samples in Holding Time	Y N NA
	Residual Chlorine Present	Y N NA
	Cl Strips:	
	Sample pH Acceptable	Y N NA
	pH Strips:	
	Sulfide Present	Y N NA
	Lead Acetate Strips:	
	LAB USE ONLY:	
	Lab Sample # / Comments:	

RAD SCREEN: <0.5 mR/hr

K'E

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #:

Samples received via: FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: AL
Cooler 1 Temp Upon Receipt: 20.0 C
Cooler 1 Therm Corr. Factor: 0.1 C
Cooler 1 Corrected Temp: 20.1 C
Comments: Au

Relinquished by/Company: (Signature) Date/Time: 11/01/19, 1600

Received by/Company: (Signature) Date/Time:

Date/Time: E205

Acctnum: Template: Prelogin:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO Page: 1 of 1

November 14, 2019

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

PES Environmental, Inc.- WA

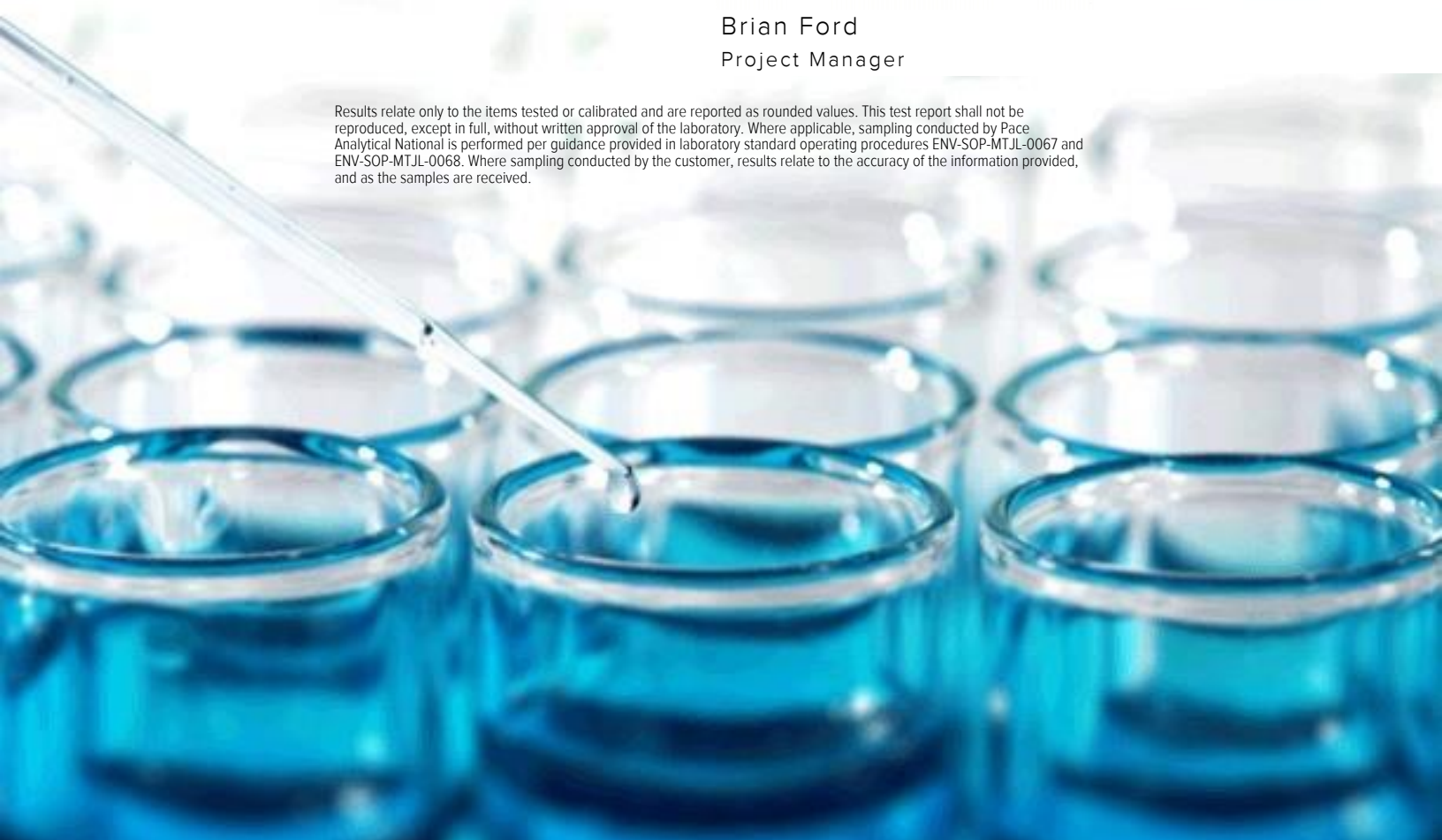
Sample Delivery Group: L1157016
Samples Received: 11/05/2019
Project Number: 1413.001.05.601
Description: American Linen
Site: AMERICAN LINEN
Report To: Brian O'Neal/Bill Haldeman
1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Entire Report Reviewed By:

Brian Ford

Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





Cp: Cover Page	1	1 Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	2 Tc
Cn: Case Narrative	5	
Sr: Sample Results	6	3 Ss
MW-165-110419 L1157016-01	6	
MW-166-110419 L1157016-02	9	4 Cn
MW-167-110419 L1157016-03	12	5 Sr
MW-168-110419 L1157016-04	15	
TP-110419 L1157016-05	18	6 Qc
Qc: Quality Control Summary	20	7 Gl
Wet Chemistry by Method 2320 B-2011	20	
Wet Chemistry by Method 9056A	21	8 Al
Wet Chemistry by Method 9060A	23	
Metals (ICPMS) by Method 6020B	26	9 Sc
Volatile Organic Compounds (GC) by Method NWTPHGX	27	
Volatile Organic Compounds (GC) by Method RSK175	29	
Volatile Organic Compounds (GC/MS) by Method 8260C	31	
Gl: Glossary of Terms	38	
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Sc: Sample Chain of Custody	40	

SAMPLE SUMMARY

MW-165-110419 L1157016-01 GW

Collected by
K. Zygas
Collected date/time
11/04/19 10:00
Received date/time
11/05/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1376842	1	11/11/19 19:16	11/11/19 19:16	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1375176	1	11/05/19 16:36	11/05/19 16:36	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1377288	5	11/08/19 11:35	11/08/19 11:35	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1376698	50	11/11/19 11:02	11/11/19 19:40	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1378063	1	11/10/19 11:06	11/10/19 11:06	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1376537	1	11/07/19 14:12	11/07/19 14:12	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1377285	10	11/08/19 11:40	11/08/19 11:40	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1378382	1	11/11/19 01:29	11/11/19 01:29	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1378635	10	11/12/19 14:59	11/12/19 14:59	JBE	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1379454	100	11/13/19 08:19	11/13/19 08:19	ACG	Mt. Juliet, TN

1
Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

MW-166-110419 L1157016-02 GW

Collected by
K. Zygas
Collected date/time
11/04/19 12:00
Received date/time
11/05/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1376842	1	11/11/19 19:23	11/11/19 19:23	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1375176	1	11/05/19 16:54	11/05/19 16:54	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1375176	5	11/05/19 17:11	11/05/19 17:11	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1377288	5	11/08/19 11:52	11/08/19 11:52	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1376698	50	11/11/19 11:02	11/11/19 19:43	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1378063	1	11/10/19 11:30	11/10/19 11:30	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1376537	1	11/07/19 14:15	11/07/19 14:15	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1377285	10	11/08/19 11:42	11/08/19 11:42	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1378382	1	11/11/19 01:48	11/11/19 01:48	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1378635	50	11/12/19 15:20	11/12/19 15:20	JBE	Mt. Juliet, TN

MW-167-110419 L1157016-03 GW

Collected by
K. Zygas
Collected date/time
11/04/19 13:30
Received date/time
11/05/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1376842	1	11/11/19 19:30	11/11/19 19:30	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1375176	1	11/05/19 17:29	11/05/19 17:29	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1376183	1	11/07/19 07:09	11/07/19 07:09	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1376698	1	11/11/19 11:02	11/11/19 17:57	RDS	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1378063	1	11/10/19 11:54	11/10/19 11:54	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1376537	1	11/07/19 14:18	11/07/19 14:18	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1377285	10	11/08/19 11:46	11/08/19 11:46	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1378382	1	11/11/19 02:08	11/11/19 02:08	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1378635	5	11/12/19 15:41	11/12/19 15:41	JBE	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1379454	5	11/13/19 07:37	11/13/19 07:37	ACG	Mt. Juliet, TN

MW-168-110419 L1157016-04 GW

Collected by
K. Zygas
Collected date/time
11/04/19 15:30
Received date/time
11/05/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1376842	1	11/11/19 19:38	11/11/19 19:38	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1375176	1	11/05/19 17:46	11/05/19 17:46	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1376376	1	11/07/19 10:19	11/07/19 10:19	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1376698	1	11/11/19 11:02	11/11/19 18:00	RDS	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1378064	1	11/10/19 17:31	11/10/19 17:31	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1376537	1	11/07/19 14:22	11/07/19 14:22	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1378382	1	11/11/19 02:28	11/11/19 02:28	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1379440	1	11/13/19 18:51	11/13/19 18:51	BMB	Mt. Juliet, TN

SAMPLE SUMMARY



TP-110419 L1157016-05 GW

Collected by: K. Zygas
 Collected date/time: 11/04/19 09:00
 Received date/time: 11/05/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1378064	1	11/10/19 16:25	11/10/19 16:25	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1378382	1	11/10/19 22:13	11/10/19 22:13	DWR	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	1060000		2710	20000	1	11/11/2019 19:16	WG1376842

Sample Narrative:

L1157016-01 WG1376842: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	51200		51.9	1000	1	11/05/2019 16:36	WG1375176
Nitrate	U		22.7	100	1	11/05/2019 16:36	WG1375176
Sulfate	57200		77.4	5000	1	11/05/2019 16:36	WG1375176

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	121000		510	5000	5	11/08/2019 11:35	WG1377288

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	60600		750	5000	50	11/11/2019 19:40	WG1376698
Manganese	5260		12.5	250	50	11/11/2019 19:40	WG1376698

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	3940		31.6	100	1	11/10/2019 11:06	WG1378063
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120		11/10/2019 11:06	WG1378063

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	12000		2.87	6.78	10	11/08/2019 11:40	WG1377285
Ethane	370		0.296	1.29	1	11/07/2019 14:12	WG1376537
Ethene	151		0.422	1.27	1	11/07/2019 14:12	WG1376537

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	16.1	J	10.5	250	10	11/12/2019 14:59	WG1378635
Acrylonitrile	U		0.873	5.00	1	11/11/2019 01:29	WG1378382
Benzene	U		0.0896	0.500	1	11/11/2019 01:29	WG1378382
Bromobenzene	U		0.133	0.500	1	11/11/2019 01:29	WG1378382
Bromodichloromethane	U		0.0800	0.500	1	11/11/2019 01:29	WG1378382
Bromochloromethane	U		0.145	0.500	1	11/11/2019 01:29	WG1378382
Bromoform	U		0.186	0.500	1	11/11/2019 01:29	WG1378382
Bromomethane	U	JO	0.157	2.50	1	11/11/2019 01:29	WG1378382
n-Butylbenzene	U		0.143	0.500	1	11/11/2019 01:29	WG1378382
sec-Butylbenzene	U		0.134	0.500	1	11/11/2019 01:29	WG1378382
tert-Butylbenzene	U		0.183	0.500	1	11/11/2019 01:29	WG1378382
Carbon disulfide	0.357	J	0.101	0.500	1	11/11/2019 01:29	WG1378382
Carbon tetrachloride	U		0.159	0.500	1	11/11/2019 01:29	WG1378382

1 Cp

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Collected date/time: 11/04/19 10:00

L1157016

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/11/2019 01:29	WG1378382
Chlorodibromomethane	U		0.128	0.500	1	11/11/2019 01:29	WG1378382
Chloroethane	0.723	J	0.141	2.50	1	11/11/2019 01:29	WG1378382
Chloroform	U		0.0860	0.500	1	11/11/2019 01:29	WG1378382
Chloromethane	U	JO	0.153	1.25	1	11/11/2019 01:29	WG1378382
2-Chlorotoluene	U		0.111	0.500	1	11/11/2019 01:29	WG1378382
4-Chlorotoluene	U		0.0972	0.500	1	11/11/2019 01:29	WG1378382
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/11/2019 01:29	WG1378382
1,2-Dibromoethane	U		0.193	0.500	1	11/11/2019 01:29	WG1378382
Dibromomethane	U		0.117	0.500	1	11/11/2019 01:29	WG1378382
1,2-Dichlorobenzene	U		0.101	0.500	1	11/11/2019 01:29	WG1378382
1,3-Dichlorobenzene	U		0.130	0.500	1	11/11/2019 01:29	WG1378382
1,4-Dichlorobenzene	U		0.121	0.500	1	11/11/2019 01:29	WG1378382
Dichlorodifluoromethane	U		0.127	2.50	1	11/11/2019 01:29	WG1378382
1,1-Dichloroethane	U		0.114	0.500	1	11/11/2019 01:29	WG1378382
1,2-Dichloroethane	U		0.108	0.500	1	11/11/2019 01:29	WG1378382
1,1-Dichloroethene	8.92		0.188	0.500	1	11/11/2019 01:29	WG1378382
cis-1,2-Dichloroethene	4180		9.33	50.0	100	11/13/2019 08:19	WG1379454
trans-1,2-Dichloroethene	91.1		0.152	0.500	1	11/11/2019 01:29	WG1378382
1,2-Dichloropropane	U		0.190	0.500	1	11/11/2019 01:29	WG1378382
1,1-Dichloropropene	U		0.128	0.500	1	11/11/2019 01:29	WG1378382
1,3-Dichloropropane	U		0.147	1.00	1	11/11/2019 01:29	WG1378382
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/11/2019 01:29	WG1378382
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/11/2019 01:29	WG1378382
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/11/2019 01:29	WG1378382
2,2-Dichloropropane	U		0.0929	0.500	1	11/11/2019 01:29	WG1378382
Di-isopropyl ether	U		0.0924	0.500	1	11/11/2019 01:29	WG1378382
Ethylbenzene	U		0.158	0.500	1	11/11/2019 01:29	WG1378382
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/11/2019 01:29	WG1378382
2-Hexanone	U		0.757	5.00	1	11/11/2019 01:29	WG1378382
n-Hexane	U		0.305	5.00	1	11/11/2019 01:29	WG1378382
Iodomethane	U	JO	0.377	10.0	1	11/11/2019 01:29	WG1378382
Isopropylbenzene	U		0.126	0.500	1	11/11/2019 01:29	WG1378382
p-Isopropyltoluene	U		0.138	0.500	1	11/11/2019 01:29	WG1378382
2-Butanone (MEK)	U		1.28	5.00	1	11/11/2019 01:29	WG1378382
Methylene Chloride	U		1.07	2.50	1	11/11/2019 01:29	WG1378382
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/11/2019 01:29	WG1378382
Methyl tert-butyl ether	U		0.102	0.500	1	11/11/2019 01:29	WG1378382
Naphthalene	U		0.174	2.50	1	11/11/2019 01:29	WG1378382
n-Propylbenzene	U		0.162	0.500	1	11/11/2019 01:29	WG1378382
Styrene	U		0.117	0.500	1	11/11/2019 01:29	WG1378382
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/11/2019 01:29	WG1378382
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/11/2019 01:29	WG1378382
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/11/2019 01:29	WG1378382
Tetrachloroethene	3.95		0.199	0.500	1	11/11/2019 01:29	WG1378382
Toluene	U		0.412	0.500	1	11/11/2019 01:29	WG1378382
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/11/2019 01:29	WG1378382
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/11/2019 01:29	WG1378382
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/11/2019 01:29	WG1378382
1,1,2-Trichloroethane	U		0.186	0.500	1	11/11/2019 01:29	WG1378382
Trichloroethene	20.2		0.153	0.500	1	11/11/2019 01:29	WG1378382
Trichlorofluoromethane	U		0.130	2.50	1	11/11/2019 01:29	WG1378382
1,2,3-Trichloropropane	U		0.247	2.50	1	11/11/2019 01:29	WG1378382
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/11/2019 01:29	WG1378382
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/11/2019 01:29	WG1378382
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/11/2019 01:29	WG1378382

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	11/11/2019 01:29	WG1378382
Vinyl chloride	642		1.18	5.00	10	11/12/2019 14:59	WG1378635
Xylenes, Total	U		0.316	1.50	1	11/11/2019 01:29	WG1378382
(S) Toluene-d8	92.9			80.0-120		11/11/2019 01:29	WG1378382
(S) Toluene-d8	96.1			80.0-120		11/12/2019 14:59	WG1378635
(S) Toluene-d8	97.1			80.0-120		11/13/2019 08:19	WG1379454
(S) 4-Bromofluorobenzene	95.4			77.0-126		11/11/2019 01:29	WG1378382
(S) 4-Bromofluorobenzene	95.9			77.0-126		11/12/2019 14:59	WG1378635
(S) 4-Bromofluorobenzene	98.4			77.0-126		11/13/2019 08:19	WG1379454
(S) 1,2-Dichloroethane-d4	98.8			70.0-130		11/11/2019 01:29	WG1378382
(S) 1,2-Dichloroethane-d4	90.1			70.0-130		11/12/2019 14:59	WG1378635
(S) 1,2-Dichloroethane-d4	97.4			70.0-130		11/13/2019 08:19	WG1379454

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	948000		2710	20000	1	11/11/2019 19:23	WG1376842

Sample Narrative:

L1157016-02 WG1376842: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	93800		260	5000	5	11/05/2019 17:11	WG1375176
Nitrate	U		22.7	100	1	11/05/2019 16:54	WG1375176
Sulfate	13600		77.4	5000	1	11/05/2019 16:54	WG1375176

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	122000		510	5000	5	11/08/2019 11:52	WG1377288

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	54500		750	5000	50	11/11/2019 19:43	WG1376698
Manganese	2110		12.5	250	50	11/11/2019 19:43	WG1376698

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	4360		31.6	100	1	11/10/2019 11:30	WG1378063
(S) a,a,a-Trifluorotoluene(FID)	106			78.0-120		11/10/2019 11:30	WG1378063

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	14300		2.87	6.78	10	11/08/2019 11:42	WG1377285
Ethane	67.6		0.296	1.29	1	11/07/2019 14:15	WG1376537
Ethene	2500		0.422	1.27	1	11/07/2019 14:15	WG1376537

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	46.4		1.05	25.0	1	11/11/2019 01:48	WG1378382
Acrylonitrile	U		0.873	5.00	1	11/11/2019 01:48	WG1378382
Benzene	U		0.0896	0.500	1	11/11/2019 01:48	WG1378382
Bromobenzene	U		0.133	0.500	1	11/11/2019 01:48	WG1378382
Bromodichloromethane	U		0.0800	0.500	1	11/11/2019 01:48	WG1378382
Bromochloromethane	U		0.145	0.500	1	11/11/2019 01:48	WG1378382
Bromoform	U		0.186	0.500	1	11/11/2019 01:48	WG1378382
Bromomethane	U	JO	0.157	2.50	1	11/11/2019 01:48	WG1378382
n-Butylbenzene	U		0.143	0.500	1	11/11/2019 01:48	WG1378382
sec-Butylbenzene	U		0.134	0.500	1	11/11/2019 01:48	WG1378382
tert-Butylbenzene	U		0.183	0.500	1	11/11/2019 01:48	WG1378382
Carbon disulfide	1.41		0.101	0.500	1	11/11/2019 01:48	WG1378382
Carbon tetrachloride	U		0.159	0.500	1	11/11/2019 01:48	WG1378382

1 Cp

2 Tc

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9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/11/2019 01:48	WG1378382
Chlorodibromomethane	U		0.128	0.500	1	11/11/2019 01:48	WG1378382
Chloroethane	1.33	U	0.141	2.50	1	11/11/2019 01:48	WG1378382
Chloroform	0.278	U	0.0860	0.500	1	11/11/2019 01:48	WG1378382
Chloromethane	U	UO	0.153	1.25	1	11/11/2019 01:48	WG1378382
2-Chlorotoluene	U		0.111	0.500	1	11/11/2019 01:48	WG1378382
4-Chlorotoluene	U		0.0972	0.500	1	11/11/2019 01:48	WG1378382
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/11/2019 01:48	WG1378382
1,2-Dibromoethane	U		0.193	0.500	1	11/11/2019 01:48	WG1378382
Dibromomethane	U		0.117	0.500	1	11/11/2019 01:48	WG1378382
1,2-Dichlorobenzene	U		0.101	0.500	1	11/11/2019 01:48	WG1378382
1,3-Dichlorobenzene	U		0.130	0.500	1	11/11/2019 01:48	WG1378382
1,4-Dichlorobenzene	U		0.121	0.500	1	11/11/2019 01:48	WG1378382
Dichlorodifluoromethane	U		0.127	2.50	1	11/11/2019 01:48	WG1378382
1,1-Dichloroethane	U		0.114	0.500	1	11/11/2019 01:48	WG1378382
1,2-Dichloroethane	U		0.108	0.500	1	11/11/2019 01:48	WG1378382
1,1-Dichloroethene	7.81		0.188	0.500	1	11/11/2019 01:48	WG1378382
cis-1,2-Dichloroethene	5130		4.67	25.0	50	11/12/2019 15:20	WG1378635
trans-1,2-Dichloroethene	47.0		0.152	0.500	1	11/11/2019 01:48	WG1378382
1,2-Dichloropropane	U		0.190	0.500	1	11/11/2019 01:48	WG1378382
1,1-Dichloropropene	U		0.128	0.500	1	11/11/2019 01:48	WG1378382
1,3-Dichloropropane	U		0.147	1.00	1	11/11/2019 01:48	WG1378382
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/11/2019 01:48	WG1378382
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/11/2019 01:48	WG1378382
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/11/2019 01:48	WG1378382
2,2-Dichloropropane	U		0.0929	0.500	1	11/11/2019 01:48	WG1378382
Di-isopropyl ether	U		0.0924	0.500	1	11/11/2019 01:48	WG1378382
Ethylbenzene	U		0.158	0.500	1	11/11/2019 01:48	WG1378382
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/11/2019 01:48	WG1378382
2-Hexanone	U		0.757	5.00	1	11/11/2019 01:48	WG1378382
n-Hexane	U		0.305	5.00	1	11/11/2019 01:48	WG1378382
Iodomethane	U	UO	0.377	10.0	1	11/11/2019 01:48	WG1378382
Isopropylbenzene	U		0.126	0.500	1	11/11/2019 01:48	WG1378382
p-Isopropyltoluene	U		0.138	0.500	1	11/11/2019 01:48	WG1378382
2-Butanone (MEK)	19.6		1.28	5.00	1	11/11/2019 01:48	WG1378382
Methylene Chloride	U		1.07	2.50	1	11/11/2019 01:48	WG1378382
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/11/2019 01:48	WG1378382
Methyl tert-butyl ether	U		0.102	0.500	1	11/11/2019 01:48	WG1378382
Naphthalene	U		0.174	2.50	1	11/11/2019 01:48	WG1378382
n-Propylbenzene	U		0.162	0.500	1	11/11/2019 01:48	WG1378382
Styrene	U		0.117	0.500	1	11/11/2019 01:48	WG1378382
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/11/2019 01:48	WG1378382
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/11/2019 01:48	WG1378382
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/11/2019 01:48	WG1378382
Tetrachloroethene	U		0.199	0.500	1	11/11/2019 01:48	WG1378382
Toluene	0.526		0.412	0.500	1	11/11/2019 01:48	WG1378382
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/11/2019 01:48	WG1378382
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/11/2019 01:48	WG1378382
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/11/2019 01:48	WG1378382
1,1,2-Trichloroethane	U		0.186	0.500	1	11/11/2019 01:48	WG1378382
Trichloroethene	0.467	U	0.153	0.500	1	11/11/2019 01:48	WG1378382
Trichlorofluoromethane	U		0.130	2.50	1	11/11/2019 01:48	WG1378382
1,2,3-Trichloropropane	U		0.247	2.50	1	11/11/2019 01:48	WG1378382
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/11/2019 01:48	WG1378382
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/11/2019 01:48	WG1378382
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/11/2019 01:48	WG1378382

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	11/11/2019 01:48	WG1378382
Vinyl chloride	1420		5.90	25.0	50	11/12/2019 15:20	WG1378635
Xylenes, Total	U		0.316	1.50	1	11/11/2019 01:48	WG1378382
(S) Toluene-d8	93.8			80.0-120		11/11/2019 01:48	WG1378382
(S) Toluene-d8	98.5			80.0-120		11/12/2019 15:20	WG1378635
(S) 4-Bromofluorobenzene	94.3			77.0-126		11/11/2019 01:48	WG1378382
(S) 4-Bromofluorobenzene	97.2			77.0-126		11/12/2019 15:20	WG1378635
(S) 1,2-Dichloroethane-d4	96.6			70.0-130		11/11/2019 01:48	WG1378382
(S) 1,2-Dichloroethane-d4	85.9			70.0-130		11/12/2019 15:20	WG1378635

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	347000		2710	20000	1	11/11/2019 19:30	WG1376842

Sample Narrative:

L1157016-03 WG1376842: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	38100		51.9	1000	1	11/05/2019 17:29	WG1375176
Nitrate	U		22.7	100	1	11/05/2019 17:29	WG1375176
Sulfate	61900		77.4	5000	1	11/05/2019 17:29	WG1375176

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	19600		102	1000	1	11/07/2019 07:09	WG1376183

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	849		15.0	100	1	11/11/2019 17:57	WG1376698
Manganese	345		0.250	5.00	1	11/11/2019 17:57	WG1376698

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	11/10/2019 11:54	WG1378063
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120		11/10/2019 11:54	WG1378063

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	8580		2.87	6.78	10	11/08/2019 11:46	WG1377285
Ethane	25.7		0.296	1.29	1	11/07/2019 14:18	WG1376537
Ethene	121		0.422	1.27	1	11/07/2019 14:18	WG1376537

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	1120		5.25	125	5	11/12/2019 15:41	WG1378635
Acrylonitrile	U		0.873	5.00	1	11/11/2019 02:08	WG1378382
Benzene	U		0.0896	0.500	1	11/11/2019 02:08	WG1378382
Bromobenzene	U		0.133	0.500	1	11/11/2019 02:08	WG1378382
Bromodichloromethane	U		0.0800	0.500	1	11/11/2019 02:08	WG1378382
Bromochloromethane	U		0.145	0.500	1	11/11/2019 02:08	WG1378382
Bromoform	U		0.186	0.500	1	11/11/2019 02:08	WG1378382
Bromomethane	U	JO	0.157	2.50	1	11/11/2019 02:08	WG1378382
n-Butylbenzene	U		0.143	0.500	1	11/11/2019 02:08	WG1378382
sec-Butylbenzene	U		0.134	0.500	1	11/11/2019 02:08	WG1378382
tert-Butylbenzene	U		0.183	0.500	1	11/11/2019 02:08	WG1378382
Carbon disulfide	1.15		0.101	0.500	1	11/11/2019 02:08	WG1378382
Carbon tetrachloride	U		0.159	0.500	1	11/11/2019 02:08	WG1378382

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/11/2019 02:08	WG1378382
Chlorodibromomethane	U		0.128	0.500	1	11/11/2019 02:08	WG1378382
Chloroethane	U		0.141	2.50	1	11/11/2019 02:08	WG1378382
Chloroform	0.131	<u>J</u>	0.0860	0.500	1	11/11/2019 02:08	WG1378382
Chloromethane	U	<u>JO</u>	0.153	1.25	1	11/11/2019 02:08	WG1378382
2-Chlorotoluene	U		0.111	0.500	1	11/11/2019 02:08	WG1378382
4-Chlorotoluene	U		0.0972	0.500	1	11/11/2019 02:08	WG1378382
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/11/2019 02:08	WG1378382
1,2-Dibromoethane	U		0.193	0.500	1	11/11/2019 02:08	WG1378382
Dibromomethane	U		0.117	0.500	1	11/11/2019 02:08	WG1378382
1,2-Dichlorobenzene	U		0.101	0.500	1	11/11/2019 02:08	WG1378382
1,3-Dichlorobenzene	U		0.130	0.500	1	11/11/2019 02:08	WG1378382
1,4-Dichlorobenzene	U		0.121	0.500	1	11/11/2019 02:08	WG1378382
Dichlorodifluoromethane	U		0.127	2.50	1	11/11/2019 02:08	WG1378382
1,1-Dichloroethane	U		0.114	0.500	1	11/11/2019 02:08	WG1378382
1,2-Dichloroethane	U		0.108	0.500	1	11/11/2019 02:08	WG1378382
1,1-Dichloroethene	U		0.188	0.500	1	11/11/2019 02:08	WG1378382
cis-1,2-Dichloroethene	14.6		0.467	2.50	5	11/13/2019 07:37	WG1379454
trans-1,2-Dichloroethene	0.599		0.152	0.500	1	11/11/2019 02:08	WG1378382
1,2-Dichloropropane	U		0.190	0.500	1	11/11/2019 02:08	WG1378382
1,1-Dichloropropene	U		0.128	0.500	1	11/11/2019 02:08	WG1378382
1,3-Dichloropropane	U		0.147	1.00	1	11/11/2019 02:08	WG1378382
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/11/2019 02:08	WG1378382
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/11/2019 02:08	WG1378382
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/11/2019 02:08	WG1378382
2,2-Dichloropropane	U		0.0929	0.500	1	11/11/2019 02:08	WG1378382
Di-isopropyl ether	U		0.0924	0.500	1	11/11/2019 02:08	WG1378382
Ethylbenzene	U		0.158	0.500	1	11/11/2019 02:08	WG1378382
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/11/2019 02:08	WG1378382
2-Hexanone	U		0.757	5.00	1	11/11/2019 02:08	WG1378382
n-Hexane	U		0.305	5.00	1	11/11/2019 02:08	WG1378382
Iodomethane	U	<u>JO</u>	0.377	10.0	1	11/11/2019 02:08	WG1378382
Isopropylbenzene	U		0.126	0.500	1	11/11/2019 02:08	WG1378382
p-Isopropyltoluene	U		0.138	0.500	1	11/11/2019 02:08	WG1378382
2-Butanone (MEK)	U		1.28	5.00	1	11/11/2019 02:08	WG1378382
Methylene Chloride	U		1.07	2.50	1	11/11/2019 02:08	WG1378382
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/11/2019 02:08	WG1378382
Methyl tert-butyl ether	U		0.102	0.500	1	11/11/2019 02:08	WG1378382
Naphthalene	U		0.174	2.50	1	11/11/2019 02:08	WG1378382
n-Propylbenzene	U		0.162	0.500	1	11/11/2019 02:08	WG1378382
Styrene	U		0.117	0.500	1	11/11/2019 02:08	WG1378382
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/11/2019 02:08	WG1378382
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/11/2019 02:08	WG1378382
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/11/2019 02:08	WG1378382
Tetrachloroethene	0.326	<u>J</u>	0.199	0.500	1	11/11/2019 02:08	WG1378382
Toluene	0.567		0.412	0.500	1	11/11/2019 02:08	WG1378382
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/11/2019 02:08	WG1378382
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/11/2019 02:08	WG1378382
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/11/2019 02:08	WG1378382
1,1,2-Trichloroethane	U		0.186	0.500	1	11/11/2019 02:08	WG1378382
Trichloroethene	0.297	<u>J</u>	0.153	0.500	1	11/11/2019 02:08	WG1378382
Trichlorofluoromethane	U		0.130	2.50	1	11/11/2019 02:08	WG1378382
1,2,3-Trichloropropane	U		0.247	2.50	1	11/11/2019 02:08	WG1378382
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/11/2019 02:08	WG1378382
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/11/2019 02:08	WG1378382
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/11/2019 02:08	WG1378382

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	11/11/2019 02:08	WG1378382
Vinyl chloride	17.3		0.590	2.50	5	11/12/2019 15:41	WG1378635
Xylenes, Total	U		0.316	1.50	1	11/11/2019 02:08	WG1378382
(S) Toluene-d8	91.2			80.0-120		11/11/2019 02:08	WG1378382
(S) Toluene-d8	96.4			80.0-120		11/12/2019 15:41	WG1378635
(S) Toluene-d8	96.3			80.0-120		11/13/2019 07:37	WG1379454
(S) 4-Bromofluorobenzene	91.6			77.0-126		11/11/2019 02:08	WG1378382
(S) 4-Bromofluorobenzene	96.7			77.0-126		11/12/2019 15:41	WG1378635
(S) 4-Bromofluorobenzene	101			77.0-126		11/13/2019 07:37	WG1379454
(S) 1,2-Dichloroethane-d4	92.1			70.0-130		11/11/2019 02:08	WG1378382
(S) 1,2-Dichloroethane-d4	86.7			70.0-130		11/12/2019 15:41	WG1378635
(S) 1,2-Dichloroethane-d4	98.8			70.0-130		11/13/2019 07:37	WG1379454

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	221000		2710	20000	1	11/11/2019 19:38	WG1376842

Sample Narrative:

L1157016-04 WG1376842: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	11800		51.9	1000	1	11/05/2019 17:46	WG1375176
Nitrate	U		22.7	100	1	11/05/2019 17:46	WG1375176
Sulfate	12100		77.4	5000	1	11/05/2019 17:46	WG1375176

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2440	<u>B</u>	102	1000	1	11/07/2019 10:19	WG1376376

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	378		15.0	100	1	11/11/2019 18:00	WG1376698
Manganese	254		0.250	5.00	1	11/11/2019 18:00	WG1376698

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	65.0	<u>B, J</u>	31.6	100	1	11/10/2019 17:31	WG1378064
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	105			78.0-120		11/10/2019 17:31	WG1378064

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	U		0.287	0.678	1	11/07/2019 14:22	WG1376537
Ethane	U		0.296	1.29	1	11/07/2019 14:22	WG1376537
Ethene	U		0.422	1.27	1	11/07/2019 14:22	WG1376537

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	1.38	<u>J</u>	1.05	25.0	1	11/13/2019 18:51	WG1379440
Acrylonitrile	U		0.873	5.00	1	11/11/2019 02:28	WG1378382
Benzene	U		0.0896	0.500	1	11/11/2019 02:28	WG1378382
Bromobenzene	U		0.133	0.500	1	11/11/2019 02:28	WG1378382
Bromodichloromethane	U		0.0800	0.500	1	11/11/2019 02:28	WG1378382
Bromochloromethane	U		0.145	0.500	1	11/11/2019 02:28	WG1378382
Bromoform	U		0.186	0.500	1	11/11/2019 02:28	WG1378382
Bromomethane	U	<u>JO</u>	0.157	2.50	1	11/11/2019 02:28	WG1378382
n-Butylbenzene	U		0.143	0.500	1	11/11/2019 02:28	WG1378382
sec-Butylbenzene	U		0.134	0.500	1	11/11/2019 02:28	WG1378382
tert-Butylbenzene	U		0.183	0.500	1	11/11/2019 02:28	WG1378382
Carbon disulfide	0.219	<u>J</u>	0.101	0.500	1	11/11/2019 02:28	WG1378382
Carbon tetrachloride	U		0.159	0.500	1	11/11/2019 02:28	WG1378382

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/11/2019 02:28	WG1378382
Chlorodibromomethane	U		0.128	0.500	1	11/11/2019 02:28	WG1378382
Chloroethane	U		0.141	2.50	1	11/11/2019 02:28	WG1378382
Chloroform	U		0.0860	0.500	1	11/11/2019 02:28	WG1378382
Chloromethane	U	JO	0.153	1.25	1	11/11/2019 02:28	WG1378382
2-Chlorotoluene	U		0.111	0.500	1	11/11/2019 02:28	WG1378382
4-Chlorotoluene	U		0.0972	0.500	1	11/11/2019 02:28	WG1378382
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/11/2019 02:28	WG1378382
1,2-Dibromoethane	U		0.193	0.500	1	11/11/2019 02:28	WG1378382
Dibromomethane	U		0.117	0.500	1	11/11/2019 02:28	WG1378382
1,2-Dichlorobenzene	U		0.101	0.500	1	11/11/2019 02:28	WG1378382
1,3-Dichlorobenzene	U		0.130	0.500	1	11/11/2019 02:28	WG1378382
1,4-Dichlorobenzene	U		0.121	0.500	1	11/11/2019 02:28	WG1378382
Dichlorodifluoromethane	U		0.127	2.50	1	11/11/2019 02:28	WG1378382
1,1-Dichloroethane	U		0.114	0.500	1	11/11/2019 02:28	WG1378382
1,2-Dichloroethane	U		0.108	0.500	1	11/11/2019 02:28	WG1378382
1,1-Dichloroethene	U		0.188	0.500	1	11/11/2019 02:28	WG1378382
cis-1,2-Dichloroethene	U		0.0933	0.500	1	11/13/2019 18:51	WG1379440
trans-1,2-Dichloroethene	U		0.152	0.500	1	11/11/2019 02:28	WG1378382
1,2-Dichloropropane	U		0.190	0.500	1	11/11/2019 02:28	WG1378382
1,1-Dichloropropene	U		0.128	0.500	1	11/11/2019 02:28	WG1378382
1,3-Dichloropropane	U		0.147	1.00	1	11/11/2019 02:28	WG1378382
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/11/2019 02:28	WG1378382
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/11/2019 02:28	WG1378382
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/11/2019 02:28	WG1378382
2,2-Dichloropropane	U		0.0929	0.500	1	11/11/2019 02:28	WG1378382
Di-isopropyl ether	U		0.0924	0.500	1	11/11/2019 02:28	WG1378382
Ethylbenzene	U		0.158	0.500	1	11/11/2019 02:28	WG1378382
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/11/2019 02:28	WG1378382
2-Hexanone	U		0.757	5.00	1	11/11/2019 02:28	WG1378382
n-Hexane	U		0.305	5.00	1	11/11/2019 02:28	WG1378382
Iodomethane	U	JO	0.377	10.0	1	11/11/2019 02:28	WG1378382
Isopropylbenzene	U		0.126	0.500	1	11/11/2019 02:28	WG1378382
p-Isopropyltoluene	U		0.138	0.500	1	11/11/2019 02:28	WG1378382
2-Butanone (MEK)	U		1.28	5.00	1	11/11/2019 02:28	WG1378382
Methylene Chloride	U		1.07	2.50	1	11/11/2019 02:28	WG1378382
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/11/2019 02:28	WG1378382
Methyl tert-butyl ether	U		0.102	0.500	1	11/11/2019 02:28	WG1378382
Naphthalene	U		0.174	2.50	1	11/11/2019 02:28	WG1378382
n-Propylbenzene	U		0.162	0.500	1	11/11/2019 02:28	WG1378382
Styrene	U		0.117	0.500	1	11/11/2019 02:28	WG1378382
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/11/2019 02:28	WG1378382
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/11/2019 02:28	WG1378382
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/11/2019 02:28	WG1378382
Tetrachloroethene	U		0.199	0.500	1	11/11/2019 02:28	WG1378382
Toluene	U		0.412	0.500	1	11/11/2019 02:28	WG1378382
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/11/2019 02:28	WG1378382
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/11/2019 02:28	WG1378382
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/11/2019 02:28	WG1378382
1,1,2-Trichloroethane	U		0.186	0.500	1	11/11/2019 02:28	WG1378382
Trichloroethene	U		0.153	0.500	1	11/11/2019 02:28	WG1378382
Trichlorofluoromethane	U		0.130	2.50	1	11/11/2019 02:28	WG1378382
1,2,3-Trichloropropane	U		0.247	2.50	1	11/11/2019 02:28	WG1378382
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/11/2019 02:28	WG1378382
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/11/2019 02:28	WG1378382
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/11/2019 02:28	WG1378382

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	11/11/2019 02:28	WG1378382
Vinyl chloride	U	<u>JO</u>	0.118	0.500	1	11/11/2019 02:28	WG1378382
Xylenes, Total	U		0.316	1.50	1	11/11/2019 02:28	WG1378382
(S) Toluene-d8	92.1			80.0-120		11/11/2019 02:28	WG1378382
(S) Toluene-d8	96.2			80.0-120		11/13/2019 18:51	WG1379440
(S) 4-Bromofluorobenzene	95.4			77.0-126		11/11/2019 02:28	WG1378382
(S) 4-Bromofluorobenzene	95.7			77.0-126		11/13/2019 18:51	WG1379440
(S) 1,2-Dichloroethane-d4	97.0			70.0-130		11/11/2019 02:28	WG1378382
(S) 1,2-Dichloroethane-d4	93.8			70.0-130		11/13/2019 18:51	WG1379440

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	66.5	<u>B</u> J	31.6	100	1	11/10/2019 16:25	WG1378064
(S) a,a,a-Trifluorotoluene(FID)	104			78.0-120		11/10/2019 16:25	WG1378064

1 Cp

2 Tc

3 Ss

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		1.05	25.0	1	11/10/2019 22:13	WG1378382
Acrylonitrile	U		0.873	5.00	1	11/10/2019 22:13	WG1378382
Benzene	U		0.0896	0.500	1	11/10/2019 22:13	WG1378382
Bromobenzene	U		0.133	0.500	1	11/10/2019 22:13	WG1378382
Bromodichloromethane	U		0.0800	0.500	1	11/10/2019 22:13	WG1378382
Bromochloromethane	U		0.145	0.500	1	11/10/2019 22:13	WG1378382
Bromoform	U		0.186	0.500	1	11/10/2019 22:13	WG1378382
Bromomethane	U	<u>J</u> O	0.157	2.50	1	11/10/2019 22:13	WG1378382
n-Butylbenzene	U		0.143	0.500	1	11/10/2019 22:13	WG1378382
sec-Butylbenzene	U		0.134	0.500	1	11/10/2019 22:13	WG1378382
tert-Butylbenzene	U		0.183	0.500	1	11/10/2019 22:13	WG1378382
Carbon disulfide	U		0.101	0.500	1	11/10/2019 22:13	WG1378382
Carbon tetrachloride	U		0.159	0.500	1	11/10/2019 22:13	WG1378382
Chlorobenzene	U		0.140	0.500	1	11/10/2019 22:13	WG1378382
Chlorodibromomethane	U		0.128	0.500	1	11/10/2019 22:13	WG1378382
Chloroethane	U		0.141	2.50	1	11/10/2019 22:13	WG1378382
Chloroform	U		0.0860	0.500	1	11/10/2019 22:13	WG1378382
Chloromethane	U	<u>J</u> O	0.153	1.25	1	11/10/2019 22:13	WG1378382
2-Chlorotoluene	U		0.111	0.500	1	11/10/2019 22:13	WG1378382
4-Chlorotoluene	U		0.0972	0.500	1	11/10/2019 22:13	WG1378382
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/10/2019 22:13	WG1378382
1,2-Dibromoethane	U		0.193	0.500	1	11/10/2019 22:13	WG1378382
Dibromomethane	U		0.117	0.500	1	11/10/2019 22:13	WG1378382
1,2-Dichlorobenzene	U		0.101	0.500	1	11/10/2019 22:13	WG1378382
1,3-Dichlorobenzene	U		0.130	0.500	1	11/10/2019 22:13	WG1378382
1,4-Dichlorobenzene	U		0.121	0.500	1	11/10/2019 22:13	WG1378382
Dichlorodifluoromethane	U		0.127	2.50	1	11/10/2019 22:13	WG1378382
1,1-Dichloroethane	U		0.114	0.500	1	11/10/2019 22:13	WG1378382
1,2-Dichloroethane	U		0.108	0.500	1	11/10/2019 22:13	WG1378382
1,1-Dichloroethene	U		0.188	0.500	1	11/10/2019 22:13	WG1378382
cis-1,2-Dichloroethene	0.160	<u>J</u>	0.0933	0.500	1	11/10/2019 22:13	WG1378382
trans-1,2-Dichloroethene	U		0.152	0.500	1	11/10/2019 22:13	WG1378382
1,2-Dichloropropane	U		0.190	0.500	1	11/10/2019 22:13	WG1378382
1,1-Dichloropropene	U		0.128	0.500	1	11/10/2019 22:13	WG1378382
1,3-Dichloropropane	U		0.147	1.00	1	11/10/2019 22:13	WG1378382
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/10/2019 22:13	WG1378382
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/10/2019 22:13	WG1378382
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/10/2019 22:13	WG1378382
2,2-Dichloropropane	U		0.0929	0.500	1	11/10/2019 22:13	WG1378382
Di-isopropyl ether	U		0.0924	0.500	1	11/10/2019 22:13	WG1378382
Ethylbenzene	U		0.158	0.500	1	11/10/2019 22:13	WG1378382
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/10/2019 22:13	WG1378382
2-Hexanone	U		0.757	5.00	1	11/10/2019 22:13	WG1378382
n-Hexane	U		0.305	5.00	1	11/10/2019 22:13	WG1378382
Iodomethane	U	<u>J</u> O	0.377	10.0	1	11/10/2019 22:13	WG1378382
Isopropylbenzene	U		0.126	0.500	1	11/10/2019 22:13	WG1378382
p-Isopropyltoluene	U		0.138	0.500	1	11/10/2019 22:13	WG1378382
2-Butanone (MEK)	U		1.28	5.00	1	11/10/2019 22:13	WG1378382

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 11/04/19 09:00

L1157016

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methylene Chloride	U		1.07	2.50	1	11/10/2019 22:13	WG1378382
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/10/2019 22:13	WG1378382
Methyl tert-butyl ether	U		0.102	0.500	1	11/10/2019 22:13	WG1378382
Naphthalene	U		0.174	2.50	1	11/10/2019 22:13	WG1378382
n-Propylbenzene	U		0.162	0.500	1	11/10/2019 22:13	WG1378382
Styrene	U		0.117	0.500	1	11/10/2019 22:13	WG1378382
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/10/2019 22:13	WG1378382
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/10/2019 22:13	WG1378382
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/10/2019 22:13	WG1378382
Tetrachloroethene	U		0.199	0.500	1	11/10/2019 22:13	WG1378382
Toluene	U		0.412	0.500	1	11/10/2019 22:13	WG1378382
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/10/2019 22:13	WG1378382
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/10/2019 22:13	WG1378382
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/10/2019 22:13	WG1378382
1,1,2-Trichloroethane	U		0.186	0.500	1	11/10/2019 22:13	WG1378382
Trichloroethene	0.154	<u>J</u>	0.153	0.500	1	11/10/2019 22:13	WG1378382
Trichlorofluoromethane	U		0.130	2.50	1	11/10/2019 22:13	WG1378382
1,2,3-Trichloropropane	U		0.247	2.50	1	11/10/2019 22:13	WG1378382
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/10/2019 22:13	WG1378382
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/10/2019 22:13	WG1378382
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/10/2019 22:13	WG1378382
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	11/10/2019 22:13	WG1378382
Vinyl chloride	U		0.118	0.500	1	11/10/2019 22:13	WG1378382
Xylenes, Total	U		0.316	1.50	1	11/10/2019 22:13	WG1378382
(S) Toluene-d8	92.1			80.0-120		11/10/2019 22:13	WG1378382
(S) 4-Bromofluorobenzene	93.8			77.0-126		11/10/2019 22:13	WG1378382
(S) 1,2-Dichloroethane-d4	92.8			70.0-130		11/10/2019 22:13	WG1378382

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3470779-1 11/11/19 16:31

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	3760	↓	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1156978-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1156978-01 11/11/19 18:36 • (DUP) R3470779-3 11/11/19 18:44

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	120000	120000	1	0.0142		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

L1157023-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1157023-01 11/11/19 20:02 • (DUP) R3470779-4 11/11/19 20:10

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	755000	756000	1	0.0747		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3470779-2 11/11/19 18:27

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	106000	106	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3468824-1 11/05/19 09:20

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Chloride	U		51.9	1000
Nitrate	U		22.7	100
Sulfate	U		77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1156986-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1156986-03 11/05/19 13:40 • (DUP) R3468824-3 11/05/19 13:57

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	101000	101000	1	0.0604	E	15
Nitrate	107	108	1	1.12		15
Sulfate	35600	35700	1	0.157		15

L1157023-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1157023-01 11/05/19 18:04 • (DUP) R3468824-6 11/05/19 18:22

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	6320	6320	1	0.0174		15
Nitrate	964	969	1	0.528		15
Sulfate	87400	87500	1	0.0559		15

Laboratory Control Sample (LCS)

(LCS) R3468824-2 11/05/19 09:38

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Chloride	40000	39000	97.6	80.0-120	
Nitrate	8000	8160	102	80.0-120	
Sulfate	40000	39500	98.8	80.0-120	



L1156987-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1156987-02 11/05/19 14:50 • (MS) R3468824-4 11/05/19 15:08 • (MSD) R3468824-5 11/05/19 15:25

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	303000	337000	338000	66.9	69.3	1	80.0-120	EV	EV	0.354	15
Nitrate	5000	3400	8490	8460	102	101	1	80.0-120			0.265	15
Sulfate	50000	16800	66000	66100	98.2	98.5	1	80.0-120			0.218	15

L1157032-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L1157032-06 11/05/19 22:11 • (MS) R3468824-7 11/05/19 22:29

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	21500	71100	99.1	1	80.0-120	
Nitrate	5000	U	4960	99.1	1	80.0-120	
Sulfate	50000	33600	82100	97.0	1	80.0-120	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3469533-1 11/06/19 18:42

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	421	↓	102	1000

1 Cp

2 Tc

3 Ss

L1156488-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1156488-04 11/06/19 23:59 • (DUP) R3469533-5 11/07/19 00:20

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	1860000	2190000	200	16.6		20

4 Cn

5 Sr

6 Qc

L1157016-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1157016-03 11/07/19 07:09 • (DUP) R3469533-8 11/07/19 07:28

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	19600	19700	1	0.255		20

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS)

(LCS) R3469533-2 11/06/19 19:23

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC (Total Organic Carbon)	75000	73800	98.4	85.0-115	



Method Blank (MB)

(MB) R3469505-1 11/07/19 09:22

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	480	↓	102	1000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1157032-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1157032-04 11/07/19 12:20 • (DUP) R3469505-5 11/07/19 16:59

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC	155000	150000	5	3.01		20

Laboratory Control Sample (LCS)

(LCS) R3469505-2 11/07/19 10:01

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC	75000	69300	92.4	85.0-115	

L1157032-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1157032-02 11/07/19 15:26 • (MS) R3469505-3 11/07/19 16:03 • (MSD) R3469505-4 11/07/19 16:25

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC	50000	118000	345000	343000	90.8	89.9	5	80.0-120			0.668	20



Method Blank (MB)

(MB) R3470295-1 11/08/19 09:02

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	396	↓	102	1000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1157016-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1157016-02 11/08/19 11:52 • (DUP) R3470295-3 11/08/19 12:10

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC	122000	122000	5	0.492		20

L1157688-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1157688-01 11/08/19 16:50 • (DUP) R3470295-6 11/08/19 17:13

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC	2030	2010	1	1.24		20

Laboratory Control Sample (LCS)

(LCS) R3470295-2 11/08/19 09:51

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC	75000	79500	106	85.0-115	

L1157219-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1157219-03 11/08/19 15:34 • (MS) R3470295-4 11/08/19 15:57 • (MSD) R3470295-5 11/08/19 16:20

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC	50000	ND	49700	51800	97.4	102	1	80.0-120			4.14	20

L1157688-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1157688-07 11/08/19 22:06 • (MS) R3470295-7 11/08/19 22:28 • (MSD) R3470295-8 11/08/19 22:48

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC	50000	2170	58700	56400	113	108	1	80.0-120			3.98	20



Method Blank (MB)

(MB) R3470763-1 11/11/19 17:16

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Iron	U		15.0	100
Manganese	0.447	<u>J</u>	0.250	5.00

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3470763-2 11/11/19 17:19 • (LCSD) R3470763-3 11/11/19 17:22

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Iron	5000	5230	5140	105	103	80.0-120			1.74	20
Manganese	50.0	51.9	52.6	104	105	80.0-120			1.37	20

5 Sr

6 Qc

L1157688-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1157688-07 11/11/19 17:26 • (MS) R3470763-5 11/11/19 17:32 • (MSD) R3470763-6 11/11/19 17:36

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Iron	5000	5770	10500	10900	95.2	103	1	75.0-125			3.83	20
Manganese	50.0	931	919	963	0.000	62.9	1	75.0-125	<u>V</u>	<u>V</u>	4.59	20

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3471330-2 11/10/19 03:07

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3471330-1 11/10/19 01:55 • (LCSD) R3471330-3 11/10/19 17:12

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	5420	6100	98.5	111	70.0-124			11.8	20
(S) a,a,a-Trifluorotoluene(FID)				92.8	92.9	78.0-120				



Method Blank (MB)

(MB) R3471655-3 11/10/19 15:18

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	54.6	↓	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3471655-1 11/10/19 14:11 • (LCSD) R3471655-2 11/10/19 14:33

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	6220	5980	113	109	70.0-124			3.93	20
(S) a,a,a-Trifluorotoluene(FID)				108	107	78.0-120				

L1158152-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1158152-01 11/11/19 00:34 • (MS) R3471655-4 11/11/19 00:57 • (MSD) R3471655-5 11/11/19 01:19

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	444	6300	6500	106	110	1	10.0-155			3.12	21
(S) a,a,a-Trifluorotoluene(FID)					108	111		78.0-120				



Method Blank (MB)

(MB) R3469610-1 11/07/19 13:54

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1156986-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1156986-03 11/07/19 14:10 • (DUP) R3469610-2 11/07/19 14:45

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	121	113	1	6.84		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

L1157450-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1157450-01 11/07/19 15:33 • (DUP) R3469610-3 11/07/19 16:06

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	18.1	17.1	1	5.68		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3469610-4 11/07/19 16:15 • (LCSD) R3469610-5 11/07/19 16:24

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	77.0	74.8	114	110	85.0-115			2.90	20
Ethane	129	136	136	105	105	85.0-115			0.000	20
Ethene	127	142	142	112	112	85.0-115			0.000	20



Method Blank (MB)

(MB) R3469938-1 11/08/19 10:53

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Methane	U		0.287	0.678

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1156984-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1156984-01 11/08/19 10:56 • (DUP) R3469938-2 11/08/19 11:37

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	ND	0.000	1	0.000		20

L1157016-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1157016-01 11/08/19 11:40 • (DUP) R3469938-4 11/08/19 13:26

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	12000	11900	10	0.837		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3469938-3 11/08/19 13:18 • (LCSD) R3469938-5 11/08/19 13:29

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Methane	67.8	77.6	75.2	114	111	85.0-115			3.14	20



Method Blank (MB)

(MB) R3470586-2 11/10/19 21:02

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3470586-2 11/10/19 21:02

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	91.5			80.0-120
(S) 4-Bromofluorobenzene	93.8			77.0-126
(S) 1,2-Dichloroethane-d4	95.7			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3470586-1 11/10/19 20:03

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Acetone	25.0	33.5	134	19.0-160	
Acrylonitrile	25.0	26.5	106	55.0-149	
Benzene	5.00	5.06	101	70.0-123	
Bromobenzene	5.00	4.95	99.0	73.0-121	
Bromodichloromethane	5.00	4.88	97.6	75.0-120	
Bromochloromethane	5.00	5.55	111	76.0-122	
Bromoform	5.00	4.45	89.0	68.0-132	
Bromomethane	5.00	2.90	58.0	10.0-160	
n-Butylbenzene	5.00	4.64	92.8	73.0-125	
sec-Butylbenzene	5.00	4.85	97.0	75.0-125	
tert-Butylbenzene	5.00	4.87	97.4	76.0-124	
Carbon disulfide	5.00	5.44	109	61.0-128	
Carbon tetrachloride	5.00	5.36	107	68.0-126	
Chlorobenzene	5.00	5.05	101	80.0-121	
Chlorodibromomethane	5.00	4.77	95.4	77.0-125	
Chloroethane	5.00	4.73	94.6	47.0-150	
Chloroform	5.00	5.06	101	73.0-120	
Chloromethane	5.00	3.98	79.6	41.0-142	
2-Chlorotoluene	5.00	4.97	99.4	76.0-123	
4-Chlorotoluene	5.00	4.97	99.4	75.0-122	
1,2-Dibromo-3-Chloropropane	5.00	4.55	91.0	58.0-134	
1,2-Dibromoethane	5.00	5.13	103	80.0-122	
Dibromomethane	5.00	5.12	102	80.0-120	
1,2-Dichlorobenzene	5.00	5.12	102	79.0-121	
1,3-Dichlorobenzene	5.00	4.00	80.0	79.0-120	
1,4-Dichlorobenzene	5.00	4.90	98.0	79.0-120	
Dichlorodifluoromethane	5.00	6.69	134	51.0-149	
1,1-Dichloroethane	5.00	5.19	104	70.0-126	
1,2-Dichloroethane	5.00	5.38	108	70.0-128	
1,1-Dichloroethene	5.00	5.45	109	71.0-124	
cis-1,2-Dichloroethene	5.00	5.17	103	73.0-120	
trans-1,2-Dichloroethene	5.00	5.23	105	73.0-120	
1,2-Dichloropropane	5.00	5.11	102	77.0-125	
1,1-Dichloropropene	5.00	5.06	101	74.0-126	
1,3-Dichloropropane	5.00	5.17	103	80.0-120	
cis-1,3-Dichloropropene	5.00	4.71	94.2	80.0-123	
trans-1,3-Dichloropropene	5.00	4.72	94.4	78.0-124	
trans-1,4-Dichloro-2-butene	5.00	4.07	81.4	33.0-144	
2,2-Dichloropropane	5.00	4.48	89.6	58.0-130	
Di-isopropyl ether	5.00	5.08	102	58.0-138	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3470586-1 11/10/19 20:03

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Ethylbenzene	5.00	4.92	98.4	79.0-123	
Hexachloro-1,3-butadiene	5.00	4.97	99.4	54.0-138	
2-Hexanone	25.0	25.2	101	67.0-149	
n-Hexane	5.00	4.47	89.4	57.0-133	
Iodomethane	25.0	17.6	70.4	33.0-147	
Isopropylbenzene	5.00	4.90	98.0	76.0-127	
p-Isopropyltoluene	5.00	4.68	93.6	76.0-125	
2-Butanone (MEK)	25.0	28.2	113	44.0-160	
Methylene Chloride	5.00	5.17	103	67.0-120	
4-Methyl-2-pentanone (MIBK)	25.0	24.3	97.2	68.0-142	
Methyl tert-butyl ether	5.00	5.14	103	68.0-125	
Naphthalene	5.00	4.52	90.4	54.0-135	
n-Propylbenzene	5.00	4.87	97.4	77.0-124	
Styrene	5.00	4.76	95.2	73.0-130	
1,1,1,2-Tetrachloroethane	5.00	5.00	100	75.0-125	
1,1,2,2-Tetrachloroethane	5.00	4.57	91.4	65.0-130	
1,1,2-Trichlorotrifluoroethane	5.00	5.80	116	69.0-132	
Tetrachloroethene	5.00	5.15	103	72.0-132	
Toluene	5.00	4.70	94.0	79.0-120	
1,2,3-Trichlorobenzene	5.00	4.53	90.6	50.0-138	
1,2,4-Trichlorobenzene	5.00	4.46	89.2	57.0-137	
1,1,1-Trichloroethane	5.00	5.61	112	73.0-124	
1,1,2-Trichloroethane	5.00	4.78	95.6	80.0-120	
Trichloroethene	5.00	5.63	113	78.0-124	
Trichlorofluoromethane	5.00	5.19	104	59.0-147	
1,2,3-Trichloropropane	5.00	5.02	100	73.0-130	
1,2,4-Trimethylbenzene	5.00	5.04	101	76.0-121	
1,2,3-Trimethylbenzene	5.00	4.91	98.2	77.0-120	
1,3,5-Trimethylbenzene	5.00	4.80	96.0	76.0-122	
Vinyl acetate	25.0	12.2	48.8	11.0-160	
Vinyl chloride	5.00	4.78	95.6	67.0-131	
Xylenes, Total	15.0	14.0	93.3	79.0-123	
(S) Toluene-d8			89.8	80.0-120	
(S) 4-Bromofluorobenzene			91.8	77.0-126	
(S) 1,2-Dichloroethane-d4			97.5	70.0-130	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3471173-2 11/12/19 10:29

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Acetone	U		1.05	25.0
cis-1,2-Dichloroethene	U		0.0933	0.500
Vinyl chloride	U		0.118	0.500
(S) Toluene-d8	96.2			80.0-120
(S) 4-Bromofluorobenzene	97.3			77.0-126
(S) 1,2-Dichloroethane-d4	92.6			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

Laboratory Control Sample (LCS)

(LCS) R3471173-1 11/12/19 09:47

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Acetone	25.0	23.1	92.4	19.0-160	
cis-1,2-Dichloroethene	5.00	4.98	99.6	73.0-120	
Vinyl chloride	5.00	4.68	93.6	67.0-131	
(S) Toluene-d8			98.4	80.0-120	
(S) 4-Bromofluorobenzene			100	77.0-126	
(S) 1,2-Dichloroethane-d4			90.5	70.0-130	

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3471735-2 11/13/19 08:53

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Acetone	U		1.05	25.0
cis-1,2-Dichloroethene	U		0.0933	0.500
(S) Toluene-d8	94.1			80.0-120
(S) 4-Bromofluorobenzene	91.9			77.0-126
(S) 1,2-Dichloroethane-d4	91.6			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3471735-1 11/13/19 08:11

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Acetone	25.0	24.7	98.8	19.0-160	
cis-1,2-Dichloroethene	5.00	5.25	105	73.0-120	
(S) Toluene-d8			90.9	80.0-120	
(S) 4-Bromofluorobenzene			90.9	77.0-126	
(S) 1,2-Dichloroethane-d4			96.5	70.0-130	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3471368-3 11/12/19 23:39

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
cis-1,2-Dichloroethene	U		0.0933	0.500
(S) Toluene-d8	98.7			80.0-120
(S) 4-Bromofluorobenzene	101			77.0-126
(S) 1,2-Dichloroethane-d4	98.9			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3471368-1 11/12/19 22:36 • (LCSD) R3471368-2 11/12/19 22:56

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
cis-1,2-Dichloroethene	5.00	4.88	4.83	97.6	96.6	73.0-120			1.03	20
(S) Toluene-d8				96.1	96.3	80.0-120				
(S) 4-Bromofluorobenzene				101	99.9	77.0-126				
(S) 1,2-Dichloroethane-d4				100	101	70.0-130				

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration method criteria.
V	The sample concentration is too high to evaluate accurate spike recoveries.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

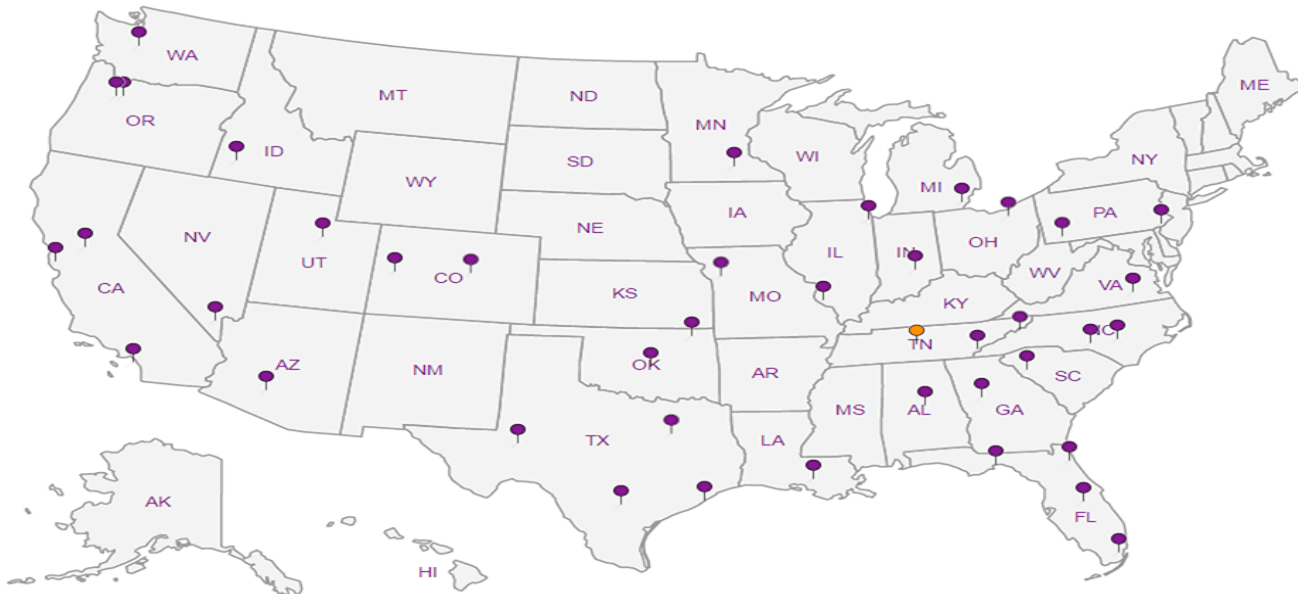
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



PES Environmental, Inc.- WA

1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Billing Information:
Attn: Accounts Payable
1215 Fourth Ave., Ste. 1350
Seattle, WA 98161

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 1



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



Report to:
Brian O'Neal/Bill Haldeman

Email To: boneal@pesenv.com;
bhaldeman@pesenv.com;

Project Description: **AMERICAN LINEN**

City/State Collected: **Seattle, WA**

Please Circle:
PT MT CT ET

Phone: 206-529-3980
Fax: 206-529-3985

Client Project #
1413.001.05.601

Lab Project #
PESENVSWA-ALP

Collected by (print):
K. Eggan

Site/Facility ID #
AMERICAN LINEN

P.O. #

Collected by (signature):
[Signature]

Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Quote #
Date Results Needed

Immediately Packed on Ice N Y

No. of
Cntrs

SDG # **L1157016**
Tab # **H067**
Account # **PESENVSWA**
Template: **T158355**
Prelogin: **P738041**
PM: **110 - Brian Ford**
PB:
Shipped Via:
Remarks Sample # (lab only)

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	*NO3,SO4,Cl* 125mlHDPE-NoPres	Alkalinity 125mlHDPE-NoPres	EEM (RSK175LL) 40mlAmb-HCl	NWTPHGX 40mlAmb HCl	TOC 250mlHDPE-HCl	Total Fe Mn 6020 250mlHDPE-HNO3	VOCs (V8260LLC) 40mlAmb-HCl		
MW-165-110419	Grab	GW	17	11-04-19	1000	12	X	X	X	X	X	X	X		01
MW-166-110419	↓	GW	31	↓	1200	12	X	X	X	X	X	X	X		02
MW-167-110419	↓	GW	46	↓	1330	12	X	X	X	X	X	X	X		03
MW-168-110419	↓	GW	—	↓	1530	12	X	X	X	X	X	X	X		04
TP-110419	—	GW	—	11-04-19	0900	2									05
		GW													
		GW													
		GW													
		GW													
		GW													

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks: *nitrate has a 48 hour holding time

pH _____ Temp _____
Flow _____ Other _____

Sample Receipt Checklist
 COC Seal Present/Intact: NP Y N
 COC Signed/Accurate: Y N
 Bottles arrive intact: Y N
 Correct bottles used: Y N
 Sufficient volume sent: Y N
 If Applicable
 VOA Zero Headspace: Y N
 Preservation Correct/Checked: Y N
 RAD Screen <0.5 mR/hr: Y N

Samples returned via:
 UPS FedEx Courier

Tracking # **7466 1966 31P5**

Relinquished by: (Signature)
[Signature]

Date: **11-04-19** Time: **1600**

Received by: (Signature)

Trip Blank Received: Yes / No
HCL / MeOH
TBR

Relinquished by: (Signature)
[Signature]

Date: _____ Time: _____

Received by: (Signature)

Temp: °C **4.9-3=4.62** Bottles Received: **10**

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date: _____ Time: _____

Received for lab by: (Signature)
[Signature]

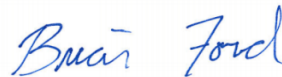
Date: **11-5-19** Time: **0830**

Hold: _____ Condition: **NCF / OK**

PES Environmental, Inc.- WA

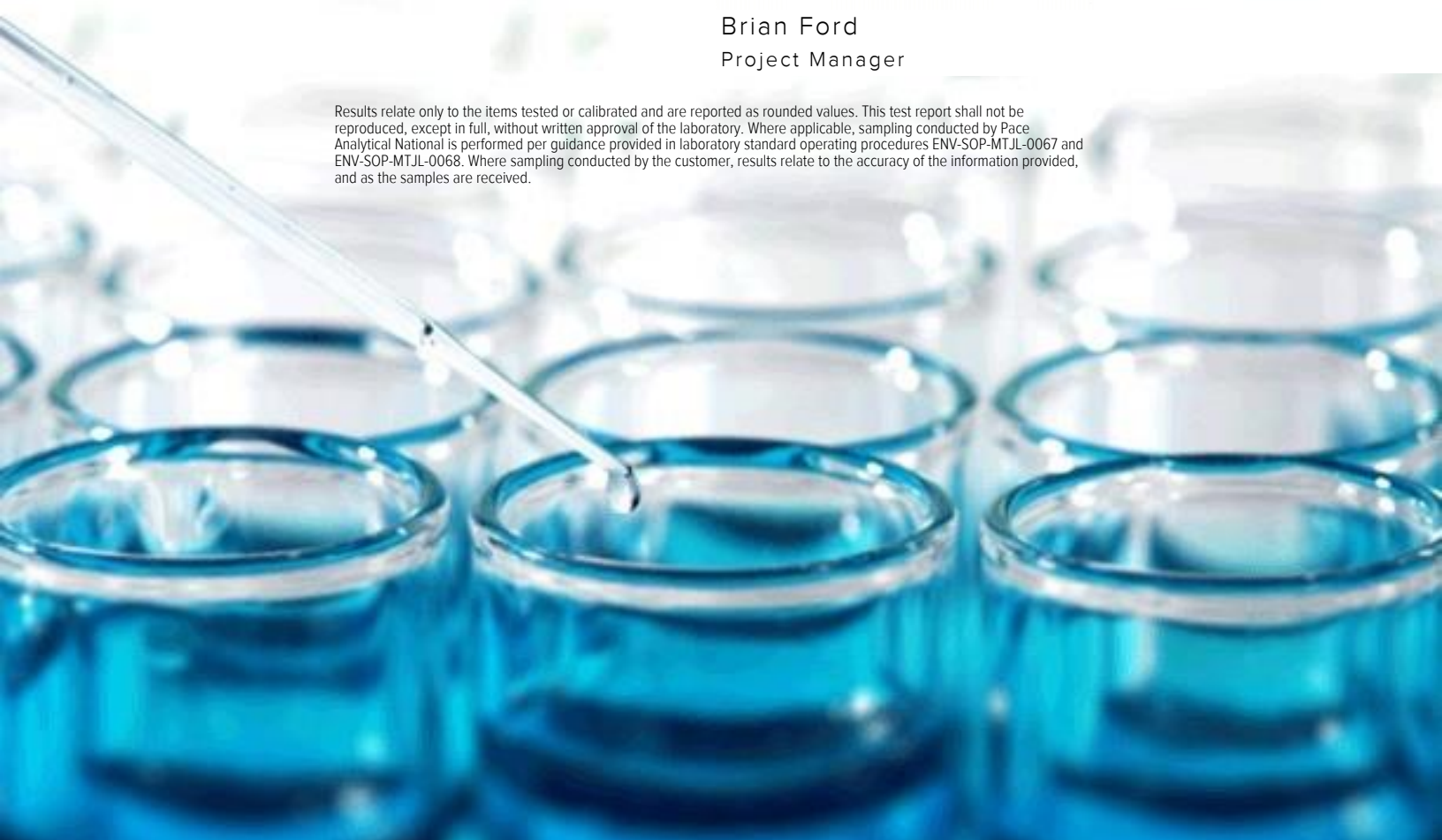
Sample Delivery Group: L1157450
Samples Received: 11/06/2019
Project Number: 1413.001.05.601
Description: American Linen
Site: AMERICAN LINEN
Report To: Brian O'Neal/Bill Haldeman
1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





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Cn: Case Narrative	5	
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SAMPLE SUMMARY



MW-172-110519 L1157450-01 GW

Collected by
Hannah Cohen
Collected date/time
11/05/19 11:10
Received date/time
11/06/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1378816	1	11/12/19 21:14	11/12/19 21:14	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1375905	1	11/06/19 18:48	11/06/19 18:48	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1377120	1	11/07/19 21:19	11/07/19 21:19	EEM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1376699	1	11/08/19 07:41	11/08/19 11:22	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1378064	1	11/10/19 17:54	11/10/19 17:54	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1376537	1	11/07/19 15:33	11/07/19 15:33	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1378382	1	11/11/19 02:47	11/11/19 02:47	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1378635	100	11/12/19 16:02	11/12/19 16:02	JBE	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

MW-171-110519 L1157450-02 GW

Collected by
Hannah Cohen
Collected date/time
11/05/19 12:40
Received date/time
11/06/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1378816	1	11/12/19 21:22	11/12/19 21:22	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1375905	1	11/06/19 19:23	11/06/19 19:23	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1377120	1	11/07/19 22:44	11/07/19 22:44	EEM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1376699	1	11/08/19 07:41	11/08/19 11:25	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1378064	1	11/10/19 18:16	11/10/19 18:16	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1376537	1	11/07/19 15:40	11/07/19 15:40	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1378382	1	11/11/19 03:07	11/11/19 03:07	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1378635	10	11/12/19 16:23	11/12/19 16:23	JBE	Mt. Juliet, TN

6
Qc

7
Gl

8
Al

9
Sc

MW-169-110519 L1157450-03 GW

Collected by
Hannah Cohen
Collected date/time
11/05/19 14:00
Received date/time
11/06/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1378816	1	11/12/19 21:30	11/12/19 21:30	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1375905	1	11/06/19 19:58	11/06/19 19:58	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1375905	5	11/06/19 20:16	11/06/19 20:16	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1377120	1	11/07/19 23:38	11/07/19 23:38	EEM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1376699	1	11/08/19 07:41	11/08/19 11:29	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1378064	1	11/10/19 18:39	11/10/19 18:39	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1376537	1	11/07/19 15:56	11/07/19 15:56	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1377285	10	11/08/19 13:04	11/08/19 13:04	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1378382	1	11/11/19 03:26	11/11/19 03:26	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1378635	500	11/12/19 16:44	11/12/19 16:44	JBE	Mt. Juliet, TN

MW-170-110519 L1157450-04 GW

Collected by
Hannah Cohen
Collected date/time
11/05/19 15:10
Received date/time
11/06/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1378816	1	11/12/19 21:38	11/12/19 21:38	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1375905	1	11/06/19 20:33	11/06/19 20:33	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1375905	5	11/06/19 21:26	11/06/19 21:26	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1377120	1	11/07/19 23:56	11/07/19 23:56	EEM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1376699	1	11/08/19 07:41	11/08/19 11:32	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1380099	10	11/14/19 01:20	11/14/19 01:20	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1376537	1	11/07/19 16:00	11/07/19 16:00	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1377285	10	11/08/19 13:10	11/08/19 13:10	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1378382	1	11/11/19 03:46	11/11/19 03:46	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1378635	200	11/12/19 17:05	11/12/19 17:05	JBE	Mt. Juliet, TN

SAMPLE SUMMARY



TB-110519 L1157450-05 GW

Collected by Hannah Cohen
 Collected date/time 11/05/19 16:00
 Received date/time 11/06/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1378064	1	11/10/19 16:47	11/10/19 16:47	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1378382	1	11/10/19 22:32	11/10/19 22:32	DWR	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	213000		2710	20000	1	11/12/2019 21:14	WG1378816

Sample Narrative:

L1157450-01 WG1378816: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	31000		51.9	1000	1	11/06/2019 18:48	WG1375905
Nitrate	U		22.7	100	1	11/06/2019 18:48	WG1375905
Sulfate	22100		77.4	5000	1	11/06/2019 18:48	WG1375905

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3310	<u>B</u>	102	1000	1	11/07/2019 21:19	WG1377120

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	131		15.0	100	1	11/08/2019 11:22	WG1376699
Manganese	392		0.250	5.00	1	11/08/2019 11:22	WG1376699

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	4960		31.6	100	1	11/10/2019 17:54	WG1378064
(S) a,a,a-Trifluorotoluene(FID)	106			78.0-120		11/10/2019 17:54	WG1378064

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	18.1		0.287	0.678	1	11/07/2019 15:33	WG1376537
Ethane	U		0.296	1.29	1	11/07/2019 15:33	WG1376537
Ethene	U		0.422	1.27	1	11/07/2019 15:33	WG1376537

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	1.97	<u>J</u>	1.05	25.0	1	11/11/2019 02:47	WG1378382
Acrylonitrile	U		0.873	5.00	1	11/11/2019 02:47	WG1378382
Benzene	U		0.0896	0.500	1	11/11/2019 02:47	WG1378382
Bromobenzene	U		0.133	0.500	1	11/11/2019 02:47	WG1378382
Bromodichloromethane	U		0.0800	0.500	1	11/11/2019 02:47	WG1378382
Bromochloromethane	U		0.145	0.500	1	11/11/2019 02:47	WG1378382
Bromoform	U		0.186	0.500	1	11/11/2019 02:47	WG1378382
Bromomethane	U	<u>JO</u>	0.157	2.50	1	11/11/2019 02:47	WG1378382
n-Butylbenzene	U		0.143	0.500	1	11/11/2019 02:47	WG1378382
sec-Butylbenzene	U		0.134	0.500	1	11/11/2019 02:47	WG1378382
tert-Butylbenzene	U		0.183	0.500	1	11/11/2019 02:47	WG1378382
Carbon disulfide	U		0.101	0.500	1	11/11/2019 02:47	WG1378382
Carbon tetrachloride	U		0.159	0.500	1	11/11/2019 02:47	WG1378382

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 11/05/19 11:10

L1157450

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/11/2019 02:47	WG1378382
Chlorodibromomethane	U		0.128	0.500	1	11/11/2019 02:47	WG1378382
Chloroethane	U		0.141	2.50	1	11/11/2019 02:47	WG1378382
Chloroform	0.244	<u>J</u>	0.0860	0.500	1	11/11/2019 02:47	WG1378382
Chloromethane	U	<u>JO</u>	0.153	1.25	1	11/11/2019 02:47	WG1378382
2-Chlorotoluene	U		0.111	0.500	1	11/11/2019 02:47	WG1378382
4-Chlorotoluene	U		0.0972	0.500	1	11/11/2019 02:47	WG1378382
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/11/2019 02:47	WG1378382
1,2-Dibromoethane	U		0.193	0.500	1	11/11/2019 02:47	WG1378382
Dibromomethane	U		0.117	0.500	1	11/11/2019 02:47	WG1378382
1,2-Dichlorobenzene	U		0.101	0.500	1	11/11/2019 02:47	WG1378382
1,3-Dichlorobenzene	U		0.130	0.500	1	11/11/2019 02:47	WG1378382
1,4-Dichlorobenzene	U		0.121	0.500	1	11/11/2019 02:47	WG1378382
Dichlorodifluoromethane	U		0.127	2.50	1	11/11/2019 02:47	WG1378382
1,1-Dichloroethane	0.305	<u>J</u>	0.114	0.500	1	11/11/2019 02:47	WG1378382
1,2-Dichloroethane	U		0.108	0.500	1	11/11/2019 02:47	WG1378382
1,1-Dichloroethene	32.0		0.188	0.500	1	11/11/2019 02:47	WG1378382
cis-1,2-Dichloroethene	643		9.33	50.0	100	11/12/2019 16:02	WG1378635
trans-1,2-Dichloroethene	22.8		0.152	0.500	1	11/11/2019 02:47	WG1378382
1,2-Dichloropropane	U		0.190	0.500	1	11/11/2019 02:47	WG1378382
1,1-Dichloropropene	U		0.128	0.500	1	11/11/2019 02:47	WG1378382
1,3-Dichloropropane	U		0.147	1.00	1	11/11/2019 02:47	WG1378382
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/11/2019 02:47	WG1378382
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/11/2019 02:47	WG1378382
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/11/2019 02:47	WG1378382
2,2-Dichloropropane	U		0.0929	0.500	1	11/11/2019 02:47	WG1378382
Di-isopropyl ether	U		0.0924	0.500	1	11/11/2019 02:47	WG1378382
Ethylbenzene	U		0.158	0.500	1	11/11/2019 02:47	WG1378382
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/11/2019 02:47	WG1378382
2-Hexanone	U		0.757	5.00	1	11/11/2019 02:47	WG1378382
n-Hexane	U		0.305	5.00	1	11/11/2019 02:47	WG1378382
Iodomethane	U	<u>JO</u>	0.377	10.0	1	11/11/2019 02:47	WG1378382
Isopropylbenzene	U		0.126	0.500	1	11/11/2019 02:47	WG1378382
p-Isopropyltoluene	U		0.138	0.500	1	11/11/2019 02:47	WG1378382
2-Butanone (MEK)	U		1.28	5.00	1	11/11/2019 02:47	WG1378382
Methylene Chloride	U		1.07	2.50	1	11/11/2019 02:47	WG1378382
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/11/2019 02:47	WG1378382
Methyl tert-butyl ether	U		0.102	0.500	1	11/11/2019 02:47	WG1378382
Naphthalene	U		0.174	2.50	1	11/11/2019 02:47	WG1378382
n-Propylbenzene	U		0.162	0.500	1	11/11/2019 02:47	WG1378382
Styrene	U		0.117	0.500	1	11/11/2019 02:47	WG1378382
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/11/2019 02:47	WG1378382
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/11/2019 02:47	WG1378382
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/11/2019 02:47	WG1378382
Tetrachloroethene	8810		19.9	50.0	100	11/12/2019 16:02	WG1378635
Toluene	0.460	<u>J</u>	0.412	0.500	1	11/11/2019 02:47	WG1378382
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/11/2019 02:47	WG1378382
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/11/2019 02:47	WG1378382
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/11/2019 02:47	WG1378382
1,1,2-Trichloroethane	U		0.186	0.500	1	11/11/2019 02:47	WG1378382
Trichloroethene	3280		15.3	50.0	100	11/12/2019 16:02	WG1378635
Trichlorofluoromethane	U		0.130	2.50	1	11/11/2019 02:47	WG1378382
1,2,3-Trichloropropane	U		0.247	2.50	1	11/11/2019 02:47	WG1378382
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/11/2019 02:47	WG1378382
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/11/2019 02:47	WG1378382
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/11/2019 02:47	WG1378382

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	11/11/2019 02:47	WG1378382
Vinyl chloride	2.64		0.118	0.500	1	11/11/2019 02:47	WG1378382
Xylenes, Total	U		0.316	1.50	1	11/11/2019 02:47	WG1378382
(S) Toluene-d8	90.6			80.0-120		11/11/2019 02:47	WG1378382
(S) Toluene-d8	96.4			80.0-120		11/12/2019 16:02	WG1378635
(S) 4-Bromofluorobenzene	94.1			77.0-126		11/11/2019 02:47	WG1378382
(S) 4-Bromofluorobenzene	97.4			77.0-126		11/12/2019 16:02	WG1378635
(S) 1,2-Dichloroethane-d4	95.8			70.0-130		11/11/2019 02:47	WG1378382
(S) 1,2-Dichloroethane-d4	90.5			70.0-130		11/12/2019 16:02	WG1378635

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	258000		2710	20000	1	11/12/2019 21:22	WG1378816

Sample Narrative:

L1157450-02 WG1378816: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	42100		51.9	1000	1	11/06/2019 19:23	WG1375905
Nitrate	93.6	J	22.7	100	1	11/06/2019 19:23	WG1375905
Sulfate	22000		77.4	5000	1	11/06/2019 19:23	WG1375905

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	10200		102	1000	1	11/07/2019 22:44	WG1377120

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	3630		15.0	100	1	11/08/2019 11:25	WG1376699
Manganese	190		0.250	5.00	1	11/08/2019 11:25	WG1376699

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	371	B	31.6	100	1	11/10/2019 18:16	WG1378064
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120		11/10/2019 18:16	WG1378064

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	231		0.287	0.678	1	11/07/2019 15:40	WG1376537
Ethane	U		0.296	1.29	1	11/07/2019 15:40	WG1376537
Ethene	10.8		0.422	1.27	1	11/07/2019 15:40	WG1376537

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	1130		10.5	250	10	11/12/2019 16:23	WG1378635
Acrylonitrile	U		0.873	5.00	1	11/11/2019 03:07	WG1378382
Benzene	U		0.0896	0.500	1	11/11/2019 03:07	WG1378382
Bromobenzene	U		0.133	0.500	1	11/11/2019 03:07	WG1378382
Bromodichloromethane	U		0.0800	0.500	1	11/11/2019 03:07	WG1378382
Bromochloromethane	U		0.145	0.500	1	11/11/2019 03:07	WG1378382
Bromoform	U		0.186	0.500	1	11/11/2019 03:07	WG1378382
Bromomethane	U	JO	0.157	2.50	1	11/11/2019 03:07	WG1378382
n-Butylbenzene	U		0.143	0.500	1	11/11/2019 03:07	WG1378382
sec-Butylbenzene	U		0.134	0.500	1	11/11/2019 03:07	WG1378382
tert-Butylbenzene	U		0.183	0.500	1	11/11/2019 03:07	WG1378382
Carbon disulfide	0.332	J	0.101	0.500	1	11/11/2019 03:07	WG1378382
Carbon tetrachloride	U		0.159	0.500	1	11/11/2019 03:07	WG1378382

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/11/2019 03:07	WG1378382
Chlorodibromomethane	U		0.128	0.500	1	11/11/2019 03:07	WG1378382
Chloroethane	U		0.141	2.50	1	11/11/2019 03:07	WG1378382
Chloroform	U		0.0860	0.500	1	11/11/2019 03:07	WG1378382
Chloromethane	U	JO	0.153	1.25	1	11/11/2019 03:07	WG1378382
2-Chlorotoluene	U		0.111	0.500	1	11/11/2019 03:07	WG1378382
4-Chlorotoluene	U		0.0972	0.500	1	11/11/2019 03:07	WG1378382
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/11/2019 03:07	WG1378382
1,2-Dibromoethane	U		0.193	0.500	1	11/11/2019 03:07	WG1378382
Dibromomethane	U		0.117	0.500	1	11/11/2019 03:07	WG1378382
1,2-Dichlorobenzene	U		0.101	0.500	1	11/11/2019 03:07	WG1378382
1,3-Dichlorobenzene	U		0.130	0.500	1	11/11/2019 03:07	WG1378382
1,4-Dichlorobenzene	U		0.121	0.500	1	11/11/2019 03:07	WG1378382
Dichlorodifluoromethane	U		0.127	2.50	1	11/11/2019 03:07	WG1378382
1,1-Dichloroethane	U		0.114	0.500	1	11/11/2019 03:07	WG1378382
1,2-Dichloroethane	U		0.108	0.500	1	11/11/2019 03:07	WG1378382
1,1-Dichloroethene	0.923		0.188	0.500	1	11/11/2019 03:07	WG1378382
cis-1,2-Dichloroethene	509		0.933	5.00	10	11/12/2019 16:23	WG1378635
trans-1,2-Dichloroethene	1.47		0.152	0.500	1	11/11/2019 03:07	WG1378382
1,2-Dichloropropane	U		0.190	0.500	1	11/11/2019 03:07	WG1378382
1,1-Dichloropropene	U		0.128	0.500	1	11/11/2019 03:07	WG1378382
1,3-Dichloropropane	U		0.147	1.00	1	11/11/2019 03:07	WG1378382
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/11/2019 03:07	WG1378382
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/11/2019 03:07	WG1378382
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/11/2019 03:07	WG1378382
2,2-Dichloropropane	U		0.0929	0.500	1	11/11/2019 03:07	WG1378382
Di-isopropyl ether	U		0.0924	0.500	1	11/11/2019 03:07	WG1378382
Ethylbenzene	U		0.158	0.500	1	11/11/2019 03:07	WG1378382
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/11/2019 03:07	WG1378382
2-Hexanone	U		0.757	5.00	1	11/11/2019 03:07	WG1378382
n-Hexane	U		0.305	5.00	1	11/11/2019 03:07	WG1378382
Iodomethane	U	JO	0.377	10.0	1	11/11/2019 03:07	WG1378382
Isopropylbenzene	U		0.126	0.500	1	11/11/2019 03:07	WG1378382
p-Isopropyltoluene	U		0.138	0.500	1	11/11/2019 03:07	WG1378382
2-Butanone (MEK)	1.34	U	1.28	5.00	1	11/11/2019 03:07	WG1378382
Methylene Chloride	U		1.07	2.50	1	11/11/2019 03:07	WG1378382
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/11/2019 03:07	WG1378382
Methyl tert-butyl ether	U		0.102	0.500	1	11/11/2019 03:07	WG1378382
Naphthalene	U		0.174	2.50	1	11/11/2019 03:07	WG1378382
n-Propylbenzene	U		0.162	0.500	1	11/11/2019 03:07	WG1378382
Styrene	U		0.117	0.500	1	11/11/2019 03:07	WG1378382
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/11/2019 03:07	WG1378382
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/11/2019 03:07	WG1378382
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/11/2019 03:07	WG1378382
Tetrachloroethene	U		1.99	5.00	10	11/12/2019 16:23	WG1378635
Toluene	0.497	U	0.412	0.500	1	11/11/2019 03:07	WG1378382
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/11/2019 03:07	WG1378382
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/11/2019 03:07	WG1378382
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/11/2019 03:07	WG1378382
1,1,2-Trichloroethane	U		0.186	0.500	1	11/11/2019 03:07	WG1378382
Trichloroethene	U		1.53	5.00	10	11/12/2019 16:23	WG1378635
Trichlorofluoromethane	U		0.130	2.50	1	11/11/2019 03:07	WG1378382
1,2,3-Trichloropropane	U		0.247	2.50	1	11/11/2019 03:07	WG1378382
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/11/2019 03:07	WG1378382
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/11/2019 03:07	WG1378382
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/11/2019 03:07	WG1378382

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	11/11/2019 03:07	WG1378382
Vinyl chloride	13.3		0.118	0.500	1	11/11/2019 03:07	WG1378382
Xylenes, Total	U		0.316	1.50	1	11/11/2019 03:07	WG1378382
(S) Toluene-d8	93.0			80.0-120		11/11/2019 03:07	WG1378382
(S) Toluene-d8	97.3			80.0-120		11/12/2019 16:23	WG1378635
(S) 4-Bromofluorobenzene	95.8			77.0-126		11/11/2019 03:07	WG1378382
(S) 4-Bromofluorobenzene	100			77.0-126		11/12/2019 16:23	WG1378635
(S) 1,2-Dichloroethane-d4	96.6			70.0-130		11/11/2019 03:07	WG1378382
(S) 1,2-Dichloroethane-d4	90.9			70.0-130		11/12/2019 16:23	WG1378635

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Sample Narrative:

L1157450-02 WG1378635, WG1378382: Cannot be re-analyzed at lower dilution due to high levels of target analytes.
 L1157450-02 WG1378635, WG1378382: Not all compounds reportable at lower dilution.



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	577000		2710	20000	1	11/12/2019 21:30	WG1378816

Sample Narrative:

L1157450-03 WG1378816: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	149000		260	5000	5	11/06/2019 20:16	WG1375905
Nitrate	U		22.7	100	1	11/06/2019 19:58	WG1375905
Sulfate	333	J	77.4	5000	1	11/06/2019 19:58	WG1375905

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	19900		102	1000	1	11/07/2019 23:38	WG1377120

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	6150		15.0	100	1	11/08/2019 11:29	WG1376699
Manganese	832		0.250	5.00	1	11/08/2019 11:29	WG1376699

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	83.4	B, J	31.6	100	1	11/10/2019 18:39	WG1378064
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120		11/10/2019 18:39	WG1378064

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	19600		2.87	6.78	10	11/08/2019 13:04	WG1377285
Ethane	299		0.296	1.29	1	11/07/2019 15:56	WG1376537
Ethene	883		0.422	1.27	1	11/07/2019 15:56	WG1376537

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	11.7	J	1.05	25.0	1	11/11/2019 03:26	WG1378382
Acrylonitrile	U		0.873	5.00	1	11/11/2019 03:26	WG1378382
Benzene	0.130	J	0.0896	0.500	1	11/11/2019 03:26	WG1378382
Bromobenzene	U		0.133	0.500	1	11/11/2019 03:26	WG1378382
Bromodichloromethane	U		0.0800	0.500	1	11/11/2019 03:26	WG1378382
Bromochloromethane	U		0.145	0.500	1	11/11/2019 03:26	WG1378382
Bromoform	U		0.186	0.500	1	11/11/2019 03:26	WG1378382
Bromomethane	U	JO	0.157	2.50	1	11/11/2019 03:26	WG1378382
n-Butylbenzene	U		0.143	0.500	1	11/11/2019 03:26	WG1378382
sec-Butylbenzene	U		0.134	0.500	1	11/11/2019 03:26	WG1378382
tert-Butylbenzene	U		0.183	0.500	1	11/11/2019 03:26	WG1378382
Carbon disulfide	0.962		0.101	0.500	1	11/11/2019 03:26	WG1378382
Carbon tetrachloride	U		0.159	0.500	1	11/11/2019 03:26	WG1378382

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/11/2019 03:26	WG1378382
Chlorodibromomethane	U		0.128	0.500	1	11/11/2019 03:26	WG1378382
Chloroethane	U		0.141	2.50	1	11/11/2019 03:26	WG1378382
Chloroform	U		0.0860	0.500	1	11/11/2019 03:26	WG1378382
Chloromethane	U	JO	0.153	1.25	1	11/11/2019 03:26	WG1378382
2-Chlorotoluene	U		0.111	0.500	1	11/11/2019 03:26	WG1378382
4-Chlorotoluene	U		0.0972	0.500	1	11/11/2019 03:26	WG1378382
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/11/2019 03:26	WG1378382
1,2-Dibromoethane	U		0.193	0.500	1	11/11/2019 03:26	WG1378382
Dibromomethane	U		0.117	0.500	1	11/11/2019 03:26	WG1378382
1,2-Dichlorobenzene	U		0.101	0.500	1	11/11/2019 03:26	WG1378382
1,3-Dichlorobenzene	U		0.130	0.500	1	11/11/2019 03:26	WG1378382
1,4-Dichlorobenzene	U		0.121	0.500	1	11/11/2019 03:26	WG1378382
Dichlorodifluoromethane	U		0.127	2.50	1	11/11/2019 03:26	WG1378382
1,1-Dichloroethane	U		0.114	0.500	1	11/11/2019 03:26	WG1378382
1,2-Dichloroethane	U		0.108	0.500	1	11/11/2019 03:26	WG1378382
1,1-Dichloroethene	0.197	I	0.188	0.500	1	11/11/2019 03:26	WG1378382
cis-1,2-Dichloroethene	48.8		0.0933	0.500	1	11/11/2019 03:26	WG1378382
trans-1,2-Dichloroethene	11.9		0.152	0.500	1	11/11/2019 03:26	WG1378382
1,2-Dichloropropane	U		0.190	0.500	1	11/11/2019 03:26	WG1378382
1,1-Dichloropropene	U		0.128	0.500	1	11/11/2019 03:26	WG1378382
1,3-Dichloropropane	U		0.147	1.00	1	11/11/2019 03:26	WG1378382
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/11/2019 03:26	WG1378382
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/11/2019 03:26	WG1378382
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/11/2019 03:26	WG1378382
2,2-Dichloropropane	U		0.0929	0.500	1	11/11/2019 03:26	WG1378382
Di-isopropyl ether	U		0.0924	0.500	1	11/11/2019 03:26	WG1378382
Ethylbenzene	U		0.158	0.500	1	11/11/2019 03:26	WG1378382
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/11/2019 03:26	WG1378382
2-Hexanone	U		0.757	5.00	1	11/11/2019 03:26	WG1378382
n-Hexane	U		0.305	5.00	1	11/11/2019 03:26	WG1378382
Iodomethane	U	JO	0.377	10.0	1	11/11/2019 03:26	WG1378382
Isopropylbenzene	U		0.126	0.500	1	11/11/2019 03:26	WG1378382
p-Isopropyltoluene	U		0.138	0.500	1	11/11/2019 03:26	WG1378382
2-Butanone (MEK)	U		1.28	5.00	1	11/11/2019 03:26	WG1378382
Methylene Chloride	U		1.07	2.50	1	11/11/2019 03:26	WG1378382
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/11/2019 03:26	WG1378382
Methyl tert-butyl ether	U		0.102	0.500	1	11/11/2019 03:26	WG1378382
Naphthalene	U		0.174	2.50	1	11/11/2019 03:26	WG1378382
n-Propylbenzene	U		0.162	0.500	1	11/11/2019 03:26	WG1378382
Styrene	U		0.117	0.500	1	11/11/2019 03:26	WG1378382
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/11/2019 03:26	WG1378382
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/11/2019 03:26	WG1378382
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/11/2019 03:26	WG1378382
Tetrachloroethene	2.72		0.199	0.500	1	11/11/2019 03:26	WG1378382
Toluene	U		0.412	0.500	1	11/11/2019 03:26	WG1378382
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/11/2019 03:26	WG1378382
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/11/2019 03:26	WG1378382
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/11/2019 03:26	WG1378382
1,1,2-Trichloroethane	U		0.186	0.500	1	11/11/2019 03:26	WG1378382
Trichloroethene	1.15		0.153	0.500	1	11/11/2019 03:26	WG1378382
Trichlorofluoromethane	U		0.130	2.50	1	11/11/2019 03:26	WG1378382
1,2,3-Trichloropropane	U		0.247	2.50	1	11/11/2019 03:26	WG1378382
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/11/2019 03:26	WG1378382
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/11/2019 03:26	WG1378382
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/11/2019 03:26	WG1378382

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	11/11/2019 03:26	WG1378382
Vinyl chloride	1500		59.0	250	500	11/12/2019 16:44	WG1378635
Xylenes, Total	U		0.316	1.50	1	11/11/2019 03:26	WG1378382
(S) Toluene-d8	93.3			80.0-120		11/11/2019 03:26	WG1378382
(S) Toluene-d8	100			80.0-120		11/12/2019 16:44	WG1378635
(S) 4-Bromofluorobenzene	93.6			77.0-126		11/11/2019 03:26	WG1378382
(S) 4-Bromofluorobenzene	95.7			77.0-126		11/12/2019 16:44	WG1378635
(S) 1,2-Dichloroethane-d4	96.2			70.0-130		11/11/2019 03:26	WG1378382
(S) 1,2-Dichloroethane-d4	92.9			70.0-130		11/12/2019 16:44	WG1378635

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	506000		2710	20000	1	11/12/2019 21:38	WG1378816

Sample Narrative:

L1157450-04 WG1378816: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	178000		260	5000	5	11/06/2019 21:26	WG1375905
Nitrate	U		22.7	100	1	11/06/2019 20:33	WG1375905
Sulfate	112000		387	25000	5	11/06/2019 21:26	WG1375905

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	22900		102	1000	1	11/07/2019 23:56	WG1377120

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	1870		15.0	100	1	11/08/2019 11:32	WG1376699
Manganese	947		0.250	5.00	1	11/08/2019 11:32	WG1376699

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	22700		316	1000	10	11/14/2019 01:20	WG1380099
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	105			78.0-120		11/14/2019 01:20	WG1380099

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	10000		2.87	6.78	10	11/08/2019 13:10	WG1377285
Ethane	62.0		0.296	1.29	1	11/07/2019 16:00	WG1376537
Ethene	1120		0.422	1.27	1	11/07/2019 16:00	WG1376537

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	8.46	J	1.05	25.0	1	11/11/2019 03:46	WG1378382
Acrylonitrile	U		0.873	5.00	1	11/11/2019 03:46	WG1378382
Benzene	0.269	J	0.0896	0.500	1	11/11/2019 03:46	WG1378382
Bromobenzene	U		0.133	0.500	1	11/11/2019 03:46	WG1378382
Bromodichloromethane	U		0.0800	0.500	1	11/11/2019 03:46	WG1378382
Bromochloromethane	U		0.145	0.500	1	11/11/2019 03:46	WG1378382
Bromoform	U		0.186	0.500	1	11/11/2019 03:46	WG1378382
Bromomethane	U	JO	0.157	2.50	1	11/11/2019 03:46	WG1378382
n-Butylbenzene	U		0.143	0.500	1	11/11/2019 03:46	WG1378382
sec-Butylbenzene	U		0.134	0.500	1	11/11/2019 03:46	WG1378382
tert-Butylbenzene	U		0.183	0.500	1	11/11/2019 03:46	WG1378382
Carbon disulfide	U		0.101	0.500	1	11/11/2019 03:46	WG1378382
Carbon tetrachloride	U		0.159	0.500	1	11/11/2019 03:46	WG1378382

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/11/2019 03:46	WG1378382
Chlorodibromomethane	U		0.128	0.500	1	11/11/2019 03:46	WG1378382
Chloroethane	U		0.141	2.50	1	11/11/2019 03:46	WG1378382
Chloroform	U		0.0860	0.500	1	11/11/2019 03:46	WG1378382
Chloromethane	U	JO	0.153	1.25	1	11/11/2019 03:46	WG1378382
2-Chlorotoluene	U		0.111	0.500	1	11/11/2019 03:46	WG1378382
4-Chlorotoluene	U		0.0972	0.500	1	11/11/2019 03:46	WG1378382
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/11/2019 03:46	WG1378382
1,2-Dibromoethane	U		0.193	0.500	1	11/11/2019 03:46	WG1378382
Dibromomethane	U		0.117	0.500	1	11/11/2019 03:46	WG1378382
1,2-Dichlorobenzene	U		0.101	0.500	1	11/11/2019 03:46	WG1378382
1,3-Dichlorobenzene	U		0.130	0.500	1	11/11/2019 03:46	WG1378382
1,4-Dichlorobenzene	U		0.121	0.500	1	11/11/2019 03:46	WG1378382
Dichlorodifluoromethane	U		0.127	2.50	1	11/11/2019 03:46	WG1378382
1,1-Dichloroethane	U		0.114	0.500	1	11/11/2019 03:46	WG1378382
1,2-Dichloroethane	U		0.108	0.500	1	11/11/2019 03:46	WG1378382
1,1-Dichloroethene	73.1		0.188	0.500	1	11/11/2019 03:46	WG1378382
cis-1,2-Dichloroethene	27600		18.7	100	200	11/12/2019 17:05	WG1378635
trans-1,2-Dichloroethene	172		30.4	100	200	11/12/2019 17:05	WG1378635
1,2-Dichloropropane	U		0.190	0.500	1	11/11/2019 03:46	WG1378382
1,1-Dichloropropene	U		0.128	0.500	1	11/11/2019 03:46	WG1378382
1,3-Dichloropropane	U		0.147	1.00	1	11/11/2019 03:46	WG1378382
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/11/2019 03:46	WG1378382
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/11/2019 03:46	WG1378382
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/11/2019 03:46	WG1378382
2,2-Dichloropropane	U		0.0929	0.500	1	11/11/2019 03:46	WG1378382
Di-isopropyl ether	U		0.0924	0.500	1	11/11/2019 03:46	WG1378382
Ethylbenzene	U		0.158	0.500	1	11/11/2019 03:46	WG1378382
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/11/2019 03:46	WG1378382
2-Hexanone	U		0.757	5.00	1	11/11/2019 03:46	WG1378382
n-Hexane	U		0.305	5.00	1	11/11/2019 03:46	WG1378382
Iodomethane	U	JO	0.377	10.0	1	11/11/2019 03:46	WG1378382
Isopropylbenzene	U		0.126	0.500	1	11/11/2019 03:46	WG1378382
p-Isopropyltoluene	U		0.138	0.500	1	11/11/2019 03:46	WG1378382
2-Butanone (MEK)	U		1.28	5.00	1	11/11/2019 03:46	WG1378382
Methylene Chloride	U		1.07	2.50	1	11/11/2019 03:46	WG1378382
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/11/2019 03:46	WG1378382
Methyl tert-butyl ether	U		0.102	0.500	1	11/11/2019 03:46	WG1378382
Naphthalene	U		0.174	2.50	1	11/11/2019 03:46	WG1378382
n-Propylbenzene	U		0.162	0.500	1	11/11/2019 03:46	WG1378382
Styrene	U		0.117	0.500	1	11/11/2019 03:46	WG1378382
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/11/2019 03:46	WG1378382
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/11/2019 03:46	WG1378382
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/11/2019 03:46	WG1378382
Tetrachloroethene	105		0.199	0.500	1	11/11/2019 03:46	WG1378382
Toluene	0.916		0.412	0.500	1	11/11/2019 03:46	WG1378382
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/11/2019 03:46	WG1378382
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/11/2019 03:46	WG1378382
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/11/2019 03:46	WG1378382
1,1,2-Trichloroethane	U		0.186	0.500	1	11/11/2019 03:46	WG1378382
Trichloroethene	125		0.153	0.500	1	11/11/2019 03:46	WG1378382
Trichlorofluoromethane	U		0.130	2.50	1	11/11/2019 03:46	WG1378382
1,2,3-Trichloropropane	U		0.247	2.50	1	11/11/2019 03:46	WG1378382
1,2,4-Trimethylbenzene	0.437	IL	0.123	0.500	1	11/11/2019 03:46	WG1378382
1,2,3-Trimethylbenzene	0.315	IL	0.0739	0.500	1	11/11/2019 03:46	WG1378382
1,3,5-Trimethylbenzene	0.154	IL	0.124	0.500	1	11/11/2019 03:46	WG1378382

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	11/11/2019 03:46	WG1378382
Vinyl chloride	6710		23.6	100	200	11/12/2019 17:05	WG1378635
Xylenes, Total	0.796	<u>J</u>	0.316	1.50	1	11/11/2019 03:46	WG1378382
(S) Toluene-d8	93.5			80.0-120		11/11/2019 03:46	WG1378382
(S) Toluene-d8	94.9			80.0-120		11/12/2019 17:05	WG1378635
(S) 4-Bromofluorobenzene	94.6			77.0-126		11/11/2019 03:46	WG1378382
(S) 4-Bromofluorobenzene	93.8			77.0-126		11/12/2019 17:05	WG1378635
(S) 1,2-Dichloroethane-d4	95.3			70.0-130		11/11/2019 03:46	WG1378382
(S) 1,2-Dichloroethane-d4	89.8			70.0-130		11/12/2019 17:05	WG1378635

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	79.8	<u>B</u> J	31.6	100	1	11/10/2019 16:47	WG1378064
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120		11/10/2019 16:47	WG1378064

1 Cp

2 Tc

3 Ss

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	1.30	<u>J</u>	1.05	25.0	1	11/10/2019 22:32	WG1378382
Acrylonitrile	U		0.873	5.00	1	11/10/2019 22:32	WG1378382
Benzene	U		0.0896	0.500	1	11/10/2019 22:32	WG1378382
Bromobenzene	U		0.133	0.500	1	11/10/2019 22:32	WG1378382
Bromodichloromethane	U		0.0800	0.500	1	11/10/2019 22:32	WG1378382
Bromochloromethane	U		0.145	0.500	1	11/10/2019 22:32	WG1378382
Bromoform	U		0.186	0.500	1	11/10/2019 22:32	WG1378382
Bromomethane	U	<u>JO</u>	0.157	2.50	1	11/10/2019 22:32	WG1378382
n-Butylbenzene	U		0.143	0.500	1	11/10/2019 22:32	WG1378382
sec-Butylbenzene	U		0.134	0.500	1	11/10/2019 22:32	WG1378382
tert-Butylbenzene	U		0.183	0.500	1	11/10/2019 22:32	WG1378382
Carbon disulfide	U		0.101	0.500	1	11/10/2019 22:32	WG1378382
Carbon tetrachloride	U		0.159	0.500	1	11/10/2019 22:32	WG1378382
Chlorobenzene	U		0.140	0.500	1	11/10/2019 22:32	WG1378382
Chlorodibromomethane	U		0.128	0.500	1	11/10/2019 22:32	WG1378382
Chloroethane	U		0.141	2.50	1	11/10/2019 22:32	WG1378382
Chloroform	U		0.0860	0.500	1	11/10/2019 22:32	WG1378382
Chloromethane	U	<u>JO</u>	0.153	1.25	1	11/10/2019 22:32	WG1378382
2-Chlorotoluene	U		0.111	0.500	1	11/10/2019 22:32	WG1378382
4-Chlorotoluene	U		0.0972	0.500	1	11/10/2019 22:32	WG1378382
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/10/2019 22:32	WG1378382
1,2-Dibromoethane	U		0.193	0.500	1	11/10/2019 22:32	WG1378382
Dibromomethane	U		0.117	0.500	1	11/10/2019 22:32	WG1378382
1,2-Dichlorobenzene	U		0.101	0.500	1	11/10/2019 22:32	WG1378382
1,3-Dichlorobenzene	U		0.130	0.500	1	11/10/2019 22:32	WG1378382
1,4-Dichlorobenzene	U		0.121	0.500	1	11/10/2019 22:32	WG1378382
Dichlorodifluoromethane	U		0.127	2.50	1	11/10/2019 22:32	WG1378382
1,1-Dichloroethane	U		0.114	0.500	1	11/10/2019 22:32	WG1378382
1,2-Dichloroethane	U		0.108	0.500	1	11/10/2019 22:32	WG1378382
1,1-Dichloroethene	U		0.188	0.500	1	11/10/2019 22:32	WG1378382
cis-1,2-Dichloroethene	U		0.0933	0.500	1	11/10/2019 22:32	WG1378382
trans-1,2-Dichloroethene	U		0.152	0.500	1	11/10/2019 22:32	WG1378382
1,2-Dichloropropane	U		0.190	0.500	1	11/10/2019 22:32	WG1378382
1,1-Dichloropropene	U		0.128	0.500	1	11/10/2019 22:32	WG1378382
1,3-Dichloropropane	U		0.147	1.00	1	11/10/2019 22:32	WG1378382
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/10/2019 22:32	WG1378382
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/10/2019 22:32	WG1378382
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/10/2019 22:32	WG1378382
2,2-Dichloropropane	U		0.0929	0.500	1	11/10/2019 22:32	WG1378382
Di-isopropyl ether	U		0.0924	0.500	1	11/10/2019 22:32	WG1378382
Ethylbenzene	U		0.158	0.500	1	11/10/2019 22:32	WG1378382
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/10/2019 22:32	WG1378382
2-Hexanone	U		0.757	5.00	1	11/10/2019 22:32	WG1378382
n-Hexane	U		0.305	5.00	1	11/10/2019 22:32	WG1378382
Iodomethane	U	<u>JO</u>	0.377	10.0	1	11/10/2019 22:32	WG1378382
Isopropylbenzene	U		0.126	0.500	1	11/10/2019 22:32	WG1378382
p-Isopropyltoluene	U		0.138	0.500	1	11/10/2019 22:32	WG1378382
2-Butanone (MEK)	U		1.28	5.00	1	11/10/2019 22:32	WG1378382

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methylene Chloride	U		1.07	2.50	1	11/10/2019 22:32	WG1378382
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/10/2019 22:32	WG1378382
Methyl tert-butyl ether	U		0.102	0.500	1	11/10/2019 22:32	WG1378382
Naphthalene	U		0.174	2.50	1	11/10/2019 22:32	WG1378382
n-Propylbenzene	U		0.162	0.500	1	11/10/2019 22:32	WG1378382
Styrene	U		0.117	0.500	1	11/10/2019 22:32	WG1378382
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/10/2019 22:32	WG1378382
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/10/2019 22:32	WG1378382
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/10/2019 22:32	WG1378382
Tetrachloroethene	U		0.199	0.500	1	11/10/2019 22:32	WG1378382
Toluene	U		0.412	0.500	1	11/10/2019 22:32	WG1378382
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/10/2019 22:32	WG1378382
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/10/2019 22:32	WG1378382
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/10/2019 22:32	WG1378382
1,1,2-Trichloroethane	U		0.186	0.500	1	11/10/2019 22:32	WG1378382
Trichloroethene	U		0.153	0.500	1	11/10/2019 22:32	WG1378382
Trichlorofluoromethane	U		0.130	2.50	1	11/10/2019 22:32	WG1378382
1,2,3-Trichloropropane	U		0.247	2.50	1	11/10/2019 22:32	WG1378382
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/10/2019 22:32	WG1378382
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/10/2019 22:32	WG1378382
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/10/2019 22:32	WG1378382
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	11/10/2019 22:32	WG1378382
Vinyl chloride	U		0.118	0.500	1	11/10/2019 22:32	WG1378382
Xylenes, Total	U		0.316	1.50	1	11/10/2019 22:32	WG1378382
(S) Toluene-d8	92.7			80.0-120		11/10/2019 22:32	WG1378382
(S) 4-Bromofluorobenzene	94.3			77.0-126		11/10/2019 22:32	WG1378382
(S) 1,2-Dichloroethane-d4	97.6			70.0-130		11/10/2019 22:32	WG1378382

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3471254-1 11/12/19 20:51

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	4200	↓	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1157437-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1157437-01 11/12/19 20:59 • (DUP) R3471254-3 11/12/19 21:07

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	101000	101000	1	0.154		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace
DUP: Endpoint pH 4.5

L1157491-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1157491-08 11/12/19 23:51 • (DUP) R3471254-6 11/12/19 23:58

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	448000	448000	1	0.00372		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace
DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3471254-5 11/12/19 22:07

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	102000	102	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3469368-1 11/06/19 11:06

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Chloride	U		51.9	1000
Nitrate	U		22.7	100
Sulfate	U		77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1157417-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1157417-01 11/06/19 14:59 • (DUP) R3469368-3 11/06/19 15:16

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	1200	1210	1	0.116		15
Nitrate	ND	24.2	1	0.000		15
Sulfate	10400	10400	1	0.481		15

L1157450-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1157450-01 11/06/19 18:48 • (DUP) R3469368-6 11/06/19 19:05

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	31000	31000	1	0.0284		15
Nitrate	U	0.000	1	0.000		15
Sulfate	22100	22100	1	0.244		15

Laboratory Control Sample (LCS)

(LCS) R3469368-2 11/06/19 11:23

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Chloride	40000	39100	97.7	80.0-120	
Nitrate	8000	8130	102	80.0-120	
Sulfate	40000	39200	98.1	80.0-120	



L1157417-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1157417-02 11/06/19 15:34 • (MS) R3469368-4 11/06/19 15:51 • (MSD) R3469368-5 11/06/19 16:09

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	ND	50400	50700	99.6	100	1	80.0-120			0.621	15
Nitrate	5000	ND	4960	5160	98.1	102	1	80.0-120			3.99	15
Sulfate	50000	9980	59000	59100	98.1	98.3	1	80.0-120			0.143	15

L1157450-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1157450-02 11/06/19 19:23 • (MS) R3469368-7 11/06/19 19:41

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	42100	90000	95.7	1	80.0-120	
Nitrate	5000	93.6	5140	101	1	80.0-120	
Sulfate	50000	22000	70300	96.5	1	80.0-120	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3469806-1 11/07/19 19:25

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	400	↓	102	1000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1157450-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1157450-01 11/07/19 21:19 • (DUP) R3469806-3 11/07/19 21:32

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	3310	3310	1	0.151		20

L1157491-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1157491-04 11/08/19 00:42 • (DUP) R3469806-6 11/08/19 00:55

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	3000	2940	1	1.98		20

Laboratory Control Sample (LCS)

(LCS) R3469806-2 11/07/19 19:55

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC (Total Organic Carbon)	75000	72500	96.6	85.0-115	

L1157450-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1157450-02 11/07/19 22:44 • (MS) R3469806-4 11/07/19 23:00 • (MSD) R3469806-5 11/07/19 23:21

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	10200	59100	60000	97.8	99.6	1	80.0-120			1.54	20

L1157491-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1157491-10 11/08/19 11:39 • (MS) R3469806-9 11/08/19 11:56 • (MSD) R3469806-10 11/08/19 12:12

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	5940	59300	61500	107	111	1	80.0-120			3.64	20



Method Blank (MB)

(MB) R3469887-1 11/08/19 10:26

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Iron	U		15.0	100
Manganese	U		0.250	5.00

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3469887-2 11/08/19 10:29 • (LCSD) R3469887-3 11/08/19 10:32

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Iron	5000	4870	5010	97.3	100	80.0-120			2.82	20
Manganese	50.0	48.6	50.3	97.1	101	80.0-120			3.52	20

L1157417-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1157417-01 11/08/19 10:36 • (MS) R3469887-5 11/08/19 10:42 • (MSD) R3469887-6 11/08/19 10:46

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Iron	5000	240	5130	5090	97.7	97.0	1	75.0-125			0.752	20
Manganese	50.0	26.3	80.2	80.0	108	107	1	75.0-125			0.235	20



Method Blank (MB)

(MB) R3471655-3 11/10/19 15:18

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	54.6	↓	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3471655-1 11/10/19 14:11 • (LCSD) R3471655-2 11/10/19 14:33

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	6220	5980	113	109	70.0-124			3.93	20
(S) a,a,a-Trifluorotoluene(FID)				108	107	78.0-120				

6 Qc

7 Gl

L1158152-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1158152-01 11/11/19 00:34 • (MS) R3471655-4 11/11/19 00:57 • (MSD) R3471655-5 11/11/19 01:19

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	444	6300	6500	106	110	1	10.0-155			3.12	21
(S) a,a,a-Trifluorotoluene(FID)					108	111		78.0-120				

8 Al

9 Sc



Method Blank (MB)

(MB) R3472518-2 11/14/19 00:49

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	104			78.0-120

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Laboratory Control Sample (LCS)

(LCS) R3472518-1 11/14/19 00:01

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	6220	113	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			88.2	78.0-120	

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3469610-1 11/07/19 13:54

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1156986-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1156986-03 11/07/19 14:10 • (DUP) R3469610-2 11/07/19 14:45

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	121	113	1	6.84		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

L1157450-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1157450-01 11/07/19 15:33 • (DUP) R3469610-3 11/07/19 16:06

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	18.1	17.1	1	5.68		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3469610-4 11/07/19 16:15 • (LCSD) R3469610-5 11/07/19 16:24

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	77.0	74.8	114	110	85.0-115			2.90	20
Ethane	129	136	136	105	105	85.0-115			0.000	20
Ethene	127	142	142	112	112	85.0-115			0.000	20



Method Blank (MB)

(MB) R3469938-1 11/08/19 10:53

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Methane	U		0.287	0.678

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1156984-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1156984-01 11/08/19 10:56 • (DUP) R3469938-2 11/08/19 11:37

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	ND	0.000	1	0.000		20

L1157016-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1157016-01 11/08/19 11:40 • (DUP) R3469938-4 11/08/19 13:26

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	12000	11900	10	0.837		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3469938-3 11/08/19 13:18 • (LCSD) R3469938-5 11/08/19 13:29

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Methane	67.8	77.6	75.2	114	111	85.0-115			3.14	20



Method Blank (MB)

(MB) R3470586-2 11/10/19 21:02

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3470586-2 11/10/19 21:02

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	91.5			80.0-120
(S) 4-Bromofluorobenzene	93.8			77.0-126
(S) 1,2-Dichloroethane-d4	95.7			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3470586-1 11/10/19 20:03

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Acetone	25.0	33.5	134	19.0-160	
Acrylonitrile	25.0	26.5	106	55.0-149	
Benzene	5.00	5.06	101	70.0-123	
Bromobenzene	5.00	4.95	99.0	73.0-121	
Bromodichloromethane	5.00	4.88	97.6	75.0-120	
Bromochloromethane	5.00	5.55	111	76.0-122	
Bromoform	5.00	4.45	89.0	68.0-132	
Bromomethane	5.00	2.90	58.0	10.0-160	
n-Butylbenzene	5.00	4.64	92.8	73.0-125	
sec-Butylbenzene	5.00	4.85	97.0	75.0-125	
tert-Butylbenzene	5.00	4.87	97.4	76.0-124	
Carbon disulfide	5.00	5.44	109	61.0-128	
Carbon tetrachloride	5.00	5.36	107	68.0-126	
Chlorobenzene	5.00	5.05	101	80.0-121	
Chlorodibromomethane	5.00	4.77	95.4	77.0-125	
Chloroethane	5.00	4.73	94.6	47.0-150	
Chloroform	5.00	5.06	101	73.0-120	
Chloromethane	5.00	3.98	79.6	41.0-142	
2-Chlorotoluene	5.00	4.97	99.4	76.0-123	
4-Chlorotoluene	5.00	4.97	99.4	75.0-122	
1,2-Dibromo-3-Chloropropane	5.00	4.55	91.0	58.0-134	
1,2-Dibromoethane	5.00	5.13	103	80.0-122	
Dibromomethane	5.00	5.12	102	80.0-120	
1,2-Dichlorobenzene	5.00	5.12	102	79.0-121	
1,3-Dichlorobenzene	5.00	4.00	80.0	79.0-120	
1,4-Dichlorobenzene	5.00	4.90	98.0	79.0-120	
Dichlorodifluoromethane	5.00	6.69	134	51.0-149	
1,1-Dichloroethane	5.00	5.19	104	70.0-126	
1,2-Dichloroethane	5.00	5.38	108	70.0-128	
1,1-Dichloroethene	5.00	5.45	109	71.0-124	
cis-1,2-Dichloroethene	5.00	5.17	103	73.0-120	
trans-1,2-Dichloroethene	5.00	5.23	105	73.0-120	
1,2-Dichloropropane	5.00	5.11	102	77.0-125	
1,1-Dichloropropene	5.00	5.06	101	74.0-126	
1,3-Dichloropropane	5.00	5.17	103	80.0-120	
cis-1,3-Dichloropropene	5.00	4.71	94.2	80.0-123	
trans-1,3-Dichloropropene	5.00	4.72	94.4	78.0-124	
trans-1,4-Dichloro-2-butene	5.00	4.07	81.4	33.0-144	
2,2-Dichloropropane	5.00	4.48	89.6	58.0-130	
Di-isopropyl ether	5.00	5.08	102	58.0-138	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3470586-1 11/10/19 20:03

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Ethylbenzene	5.00	4.92	98.4	79.0-123	
Hexachloro-1,3-butadiene	5.00	4.97	99.4	54.0-138	
2-Hexanone	25.0	25.2	101	67.0-149	
n-Hexane	5.00	4.47	89.4	57.0-133	
Iodomethane	25.0	17.6	70.4	33.0-147	
Isopropylbenzene	5.00	4.90	98.0	76.0-127	
p-Isopropyltoluene	5.00	4.68	93.6	76.0-125	
2-Butanone (MEK)	25.0	28.2	113	44.0-160	
Methylene Chloride	5.00	5.17	103	67.0-120	
4-Methyl-2-pentanone (MIBK)	25.0	24.3	97.2	68.0-142	
Methyl tert-butyl ether	5.00	5.14	103	68.0-125	
Naphthalene	5.00	4.52	90.4	54.0-135	
n-Propylbenzene	5.00	4.87	97.4	77.0-124	
Styrene	5.00	4.76	95.2	73.0-130	
1,1,1,2-Tetrachloroethane	5.00	5.00	100	75.0-125	
1,1,2,2-Tetrachloroethane	5.00	4.57	91.4	65.0-130	
1,1,2-Trichlorotrifluoroethane	5.00	5.80	116	69.0-132	
Tetrachloroethene	5.00	5.15	103	72.0-132	
Toluene	5.00	4.70	94.0	79.0-120	
1,2,3-Trichlorobenzene	5.00	4.53	90.6	50.0-138	
1,2,4-Trichlorobenzene	5.00	4.46	89.2	57.0-137	
1,1,1-Trichloroethane	5.00	5.61	112	73.0-124	
1,1,2-Trichloroethane	5.00	4.78	95.6	80.0-120	
Trichloroethene	5.00	5.63	113	78.0-124	
Trichlorofluoromethane	5.00	5.19	104	59.0-147	
1,2,3-Trichloropropane	5.00	5.02	100	73.0-130	
1,2,4-Trimethylbenzene	5.00	5.04	101	76.0-121	
1,2,3-Trimethylbenzene	5.00	4.91	98.2	77.0-120	
1,3,5-Trimethylbenzene	5.00	4.80	96.0	76.0-122	
Vinyl acetate	25.0	12.2	48.8	11.0-160	
Vinyl chloride	5.00	4.78	95.6	67.0-131	
Xylenes, Total	15.0	14.0	93.3	79.0-123	
(S) Toluene-d8			89.8	80.0-120	
(S) 4-Bromofluorobenzene			91.8	77.0-126	
(S) 1,2-Dichloroethane-d4			97.5	70.0-130	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3471173-2 11/12/19 10:29

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
Tetrachloroethene	U		0.199	0.500
Trichloroethene	U		0.153	0.500
Vinyl chloride	U		0.118	0.500
(S) Toluene-d8	96.2			80.0-120
(S) 4-Bromofluorobenzene	97.3			77.0-126
(S) 1,2-Dichloroethane-d4	92.6			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3471173-1 11/12/19 09:47

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	25.0	23.1	92.4	19.0-160	
cis-1,2-Dichloroethene	5.00	4.98	99.6	73.0-120	
trans-1,2-Dichloroethene	5.00	4.44	88.8	73.0-120	
Tetrachloroethene	5.00	5.41	108	72.0-132	
Trichloroethene	5.00	4.88	97.6	78.0-124	
Vinyl chloride	5.00	4.68	93.6	67.0-131	
(S) Toluene-d8			98.4	80.0-120	
(S) 4-Bromofluorobenzene			100	77.0-126	
(S) 1,2-Dichloroethane-d4			90.5	70.0-130	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration method criteria.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

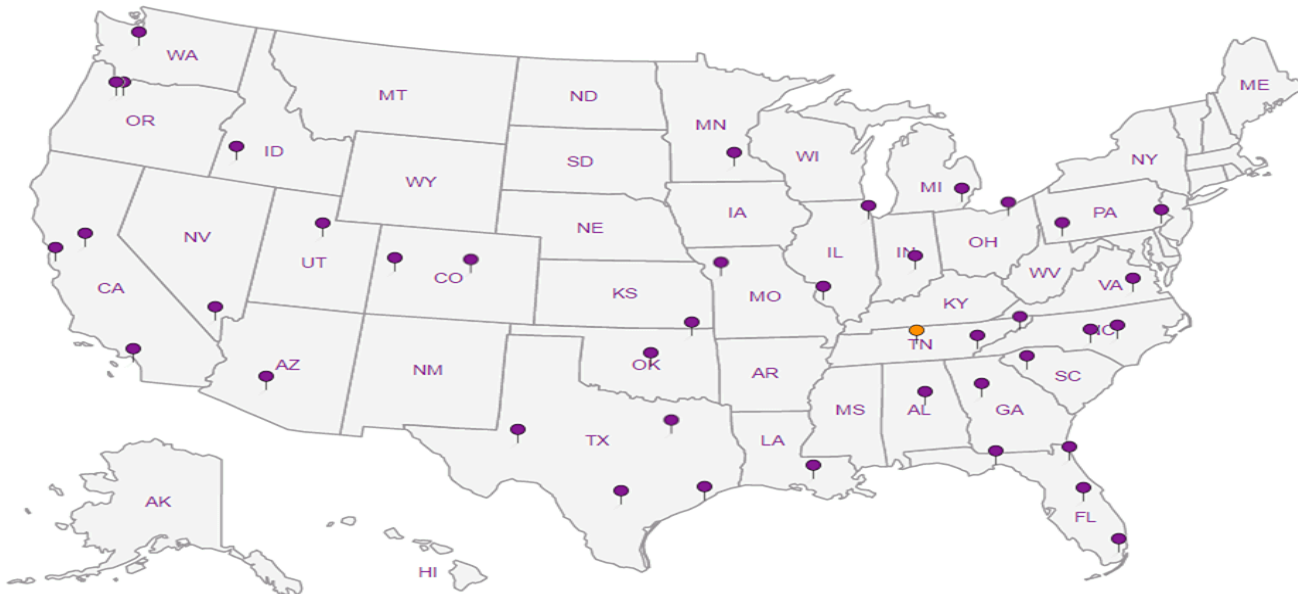
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

PES Environmental, Inc.- WA

1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Billing Information:
Attn: Accounts Payable
1215 Fourth Ave., Ste. 1350
Seattle, WA 98161

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page ___ of ___



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



SDG # L1157450
M183
Acctnum: PESENVSWA
Template: T158355
Prelogin: P738041
PM: 110 - Brian Ford
PB:

Shipped Via:
Remarks Sample # (lab only)

Report to:
Brian O'Neal/Bill Haldeman

Email To: boneal@pesenv.com;
bhaldeman@pesenv.com;

Project Description: American Linen

City/State Collected: Seattle, WA

Please Circle:
PT MT CT ET

Phone: 206-529-3980
Fax: 206-529-3985

Client Project #
1413.001.05.601

Lab Project #
PESENVSWA-ALP

Collected by (print):
Hannah Cohen

Site/Facility ID #
American Linen

P.O. #

Collected by (signature):
Hannah Cohen

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #
Date Results Needed

Immediately Packed on Ice N ___ Y

No. of
Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	*NO3,SO4,Cl*	Alkalinity	EEM	NWTPHGX	TOC	Total Fe	VOCs
MW-172-110519	Grab	GW	-	11/5/19	1110	12	X	X	X	X	X	X	X
MW-171-110519		GW	46		1240	12	X	X	X	X	X	X	X
MW-169-110519		GW	17		1400	12	X	X	X	X	X	X	X
MW-170-110519		GW	31		1510	12	X	X	X	X	X	X	X
TB-110519	-	GW	-		1600	2	X	X	X	X	X	X	X
		GW											
		GW											
		GW											

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks: *nitrate has a 48 hour holding time

pH ___ Temp ___
Flow ___ Other ___

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero HeadSpace: Y N
Preservation Correct/Checked: Y N
RAD Screen <0.5 mR/hr: Y N

Samples returned via:
___ UPS FedEx ___ Courier ___
Tracking # 7466 1466 3174

Relinquished by: (Signature)
Hannah Cohen

Date: 11/5/19
Time: 1630

Received by: (Signature)

Trip Blank Received: 2 Yes No
HCL/MeOH
TBR

Relinquished by: (Signature)

Date: Time:

Received by: (Signature)

Temp: 3.7-3.31 °C Bottles Received: 48

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date: Time:

Received for lab by: (Signature)
[Signature]

Date: 11-6-19 Time: 8:46

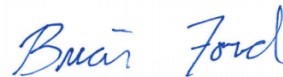
Hold: Condition: NCF / OK

PES Environmental, Inc.- WA

Sample Delivery Group: L1158133
Samples Received: 11/07/2019
Project Number: 1413.001.05.601
Description: American Linen

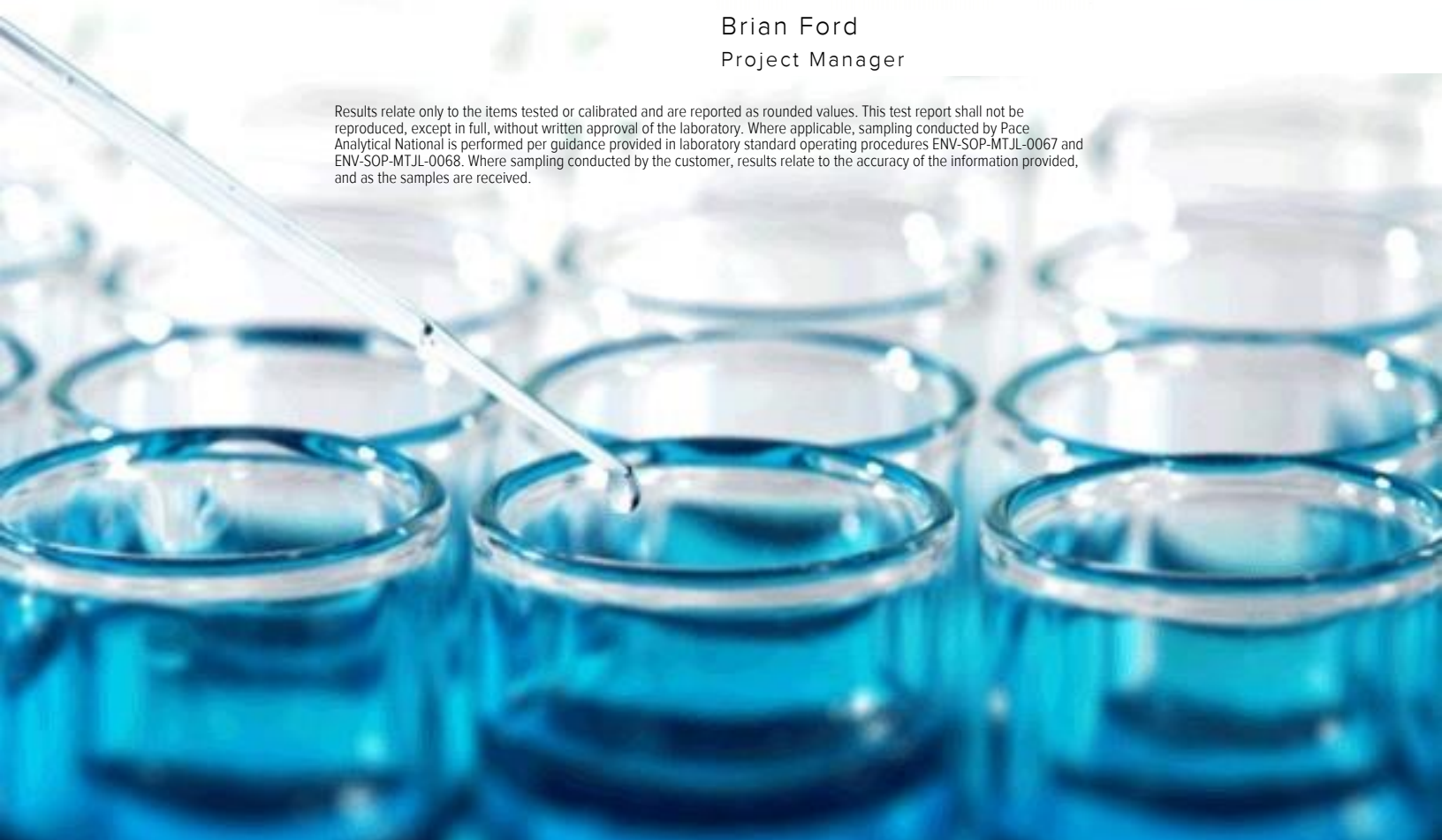
Report To: Brian O'Neal/Bill Haldeman
1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





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SAMPLE SUMMARY



MW-920-110619 L1158133-01 GW

Collected by
Hannah Cohen
Collected date/time
11/06/19 09:00
Received date/time
11/07/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1379400	1	11/14/19 01:30	11/14/19 01:30	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1376738	1	11/08/19 06:01	11/08/19 06:01	NJM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1376738	10	11/08/19 06:19	11/08/19 06:19	NJM	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1378047	1	11/10/19 02:03	11/10/19 02:03	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1377945	20	11/09/19 16:00	11/11/19 19:18	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1380099	100	11/14/19 07:55	11/14/19 07:55	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1378445	1	11/11/19 14:07	11/11/19 14:07	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1378754	10	11/12/19 13:33	11/12/19 13:33	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1381516	1	11/15/19 23:48	11/15/19 23:48	GLN	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1382748	1000	11/19/19 13:40	11/19/19 13:40	JHH	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

MW-180-110619 L1158133-02 GW

Collected by
Hannah Cohen
Collected date/time
11/06/19 10:00
Received date/time
11/07/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1379400	1	11/14/19 01:37	11/14/19 01:37	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1376795	1	11/07/19 22:25	11/07/19 22:25	NJM	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1378047	5	11/10/19 02:23	11/10/19 02:23	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1377945	1	11/09/19 16:00	11/10/19 21:18	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1380099	1	11/14/19 08:50	11/14/19 08:50	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1378445	1	11/11/19 14:11	11/11/19 14:11	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1381516	1	11/16/19 00:08	11/16/19 00:08	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1382748	5	11/19/19 14:00	11/19/19 14:00	JHH	Mt. Juliet, TN

7
Gl

8
Al

9
Sc

MW-178-110619 L1158133-03 GW

Collected by
Hannah Cohen
Collected date/time
11/06/19 11:55
Received date/time
11/07/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1379400	1	11/14/19 01:45	11/14/19 01:45	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1376795	1	11/07/19 22:38	11/07/19 22:38	NJM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1376795	5	11/07/19 22:51	11/07/19 22:51	NJM	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1378255	200	11/12/19 10:59	11/12/19 10:59	EEM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1378898	50	11/12/19 11:09	11/12/19 18:26	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1378064	1	11/10/19 23:27	11/10/19 23:27	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1378445	1	11/11/19 14:26	11/11/19 14:26	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1378754	10	11/12/19 13:46	11/12/19 13:46	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1381516	1	11/16/19 00:29	11/16/19 00:29	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1382748	20	11/19/19 14:20	11/19/19 14:20	JHH	Mt. Juliet, TN

MW-177-110619 L1158133-04 GW

Collected by
Hannah Cohen
Collected date/time
11/06/19 13:05
Received date/time
11/07/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1379400	1	11/14/19 01:54	11/14/19 01:54	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1376795	1	11/07/19 23:04	11/07/19 23:04	NJM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1376795	10	11/07/19 23:18	11/07/19 23:18	NJM	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1378047	1	11/10/19 04:56	11/10/19 04:56	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1377945	1	11/09/19 16:00	11/10/19 21:22	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1380099	100	11/14/19 09:36	11/14/19 09:36	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1378445	1	11/11/19 14:29	11/11/19 14:29	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1378754	10	11/12/19 13:52	11/12/19 13:52	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1381516	1	11/16/19 00:49	11/16/19 00:49	GLN	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1382748	1000	11/19/19 14:41	11/19/19 14:41	JHH	Mt. Juliet, TN

SAMPLE SUMMARY

MW-179-110619 L1158133-05 GW

Collected by Hannah Cohen
Collected date/time 11/06/19 14:35
Received date/time 11/07/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1379400	1	11/14/19 02:09	11/14/19 02:09	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1376795	1	11/07/19 23:31	11/07/19 23:31	NJM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1376795	5	11/07/19 23:44	11/07/19 23:44	NJM	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1378047	5	11/10/19 05:19	11/10/19 05:19	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1377945	1	11/09/19 16:00	11/10/19 22:02	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1378064	1	11/11/19 00:12	11/11/19 00:12	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1378445	1	11/11/19 14:34	11/11/19 14:34	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1378754	10	11/12/19 13:54	11/12/19 13:54	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1381516	1	11/16/19 01:09	11/16/19 01:09	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1382748	100	11/19/19 15:01	11/19/19 15:01	JHH	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

TB-110619 L1158133-06 GW

Collected by Hannah Cohen
Collected date/time 11/06/19 15:00
Received date/time 11/07/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1378064	1	11/10/19 17:09	11/10/19 17:09	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1381516	1	11/15/19 23:08	11/15/19 23:08	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1382748	1	11/19/19 11:58	11/19/19 11:58	JHH	Mt. Juliet, TN



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

Sample Delivery Group (SDG) Narrative

The following analysis were performed from an unpreserved, insufficiently or inadequately preserved sample.

<u>Lab Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L1158133-03	MW-178-110619	9060A

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	582000		2710	20000	1	11/14/2019 01:30	WG1379400

Sample Narrative:

L1158133-01 WG1379400: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	276000		519	10000	10	11/08/2019 06:19	WG1376738
Nitrate	U		22.7	100	1	11/08/2019 06:01	WG1376738
Sulfate	96200		77.4	5000	1	11/08/2019 06:01	WG1376738

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	56300		102	1000	1	11/10/2019 02:03	WG1378047

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	32200		300	2000	20	11/11/2019 19:18	WG1377945
Manganese	4130		5.00	100	20	11/11/2019 19:18	WG1377945

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	127000		3160	10000	100	11/14/2019 07:55	WG1380099
(S) a,a,a-Trifluorotoluene(FID)	104			78.0-120		11/14/2019 07:55	WG1380099

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	20800		2.87	6.78	10	11/12/2019 13:33	WG1378754
Ethane	17.8		0.296	1.29	1	11/11/2019 14:07	WG1378445
Ethene	3730		0.422	1.27	1	11/11/2019 14:07	WG1378445

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	14.1	J	1.05	25.0	1	11/15/2019 23:48	WG1381516
Acrylonitrile	U		0.873	5.00	1	11/15/2019 23:48	WG1381516
Benzene	0.721		0.0896	0.500	1	11/15/2019 23:48	WG1381516
Bromobenzene	U		0.133	0.500	1	11/15/2019 23:48	WG1381516
Bromodichloromethane	U		0.0800	0.500	1	11/15/2019 23:48	WG1381516
Bromochloromethane	U		0.145	0.500	1	11/15/2019 23:48	WG1381516
Bromoform	U		0.186	0.500	1	11/15/2019 23:48	WG1381516
Bromomethane	U		157	2500	1000	11/19/2019 13:40	WG1382748
n-Butylbenzene	U		0.143	0.500	1	11/15/2019 23:48	WG1381516
sec-Butylbenzene	0.161	J	0.134	0.500	1	11/15/2019 23:48	WG1381516
tert-Butylbenzene	U		0.183	0.500	1	11/15/2019 23:48	WG1381516
Carbon disulfide	27.8		0.101	0.500	1	11/15/2019 23:48	WG1381516
Carbon tetrachloride	U		0.159	0.500	1	11/15/2019 23:48	WG1381516

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/15/2019 23:48	WG1381516
Chlorodibromomethane	U		0.128	0.500	1	11/15/2019 23:48	WG1381516
Chloroethane	6.29		0.141	2.50	1	11/15/2019 23:48	WG1381516
Chloroform	U		0.0860	0.500	1	11/15/2019 23:48	WG1381516
Chloromethane	U		0.153	1.25	1	11/15/2019 23:48	WG1381516
2-Chlorotoluene	U		0.111	0.500	1	11/15/2019 23:48	WG1381516
4-Chlorotoluene	U		0.0972	0.500	1	11/15/2019 23:48	WG1381516
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/15/2019 23:48	WG1381516
1,2-Dibromoethane	U		0.193	0.500	1	11/15/2019 23:48	WG1381516
Dibromomethane	U		0.117	0.500	1	11/15/2019 23:48	WG1381516
1,2-Dichlorobenzene	U		0.101	0.500	1	11/15/2019 23:48	WG1381516
1,3-Dichlorobenzene	U		0.130	0.500	1	11/15/2019 23:48	WG1381516
1,4-Dichlorobenzene	U		0.121	0.500	1	11/15/2019 23:48	WG1381516
Dichlorodifluoromethane	U		0.127	2.50	1	11/15/2019 23:48	WG1381516
1,1-Dichloroethane	U		0.114	0.500	1	11/15/2019 23:48	WG1381516
1,2-Dichloroethane	U		0.108	0.500	1	11/15/2019 23:48	WG1381516
1,1-Dichloroethene	258	IE	0.188	0.500	1	11/15/2019 23:48	WG1381516
cis-1,2-Dichloroethene	93100		93.3	500	1000	11/19/2019 13:40	WG1382748
trans-1,2-Dichloroethene	200	U	152	500	1000	11/19/2019 13:40	WG1382748
1,2-Dichloropropane	U		0.190	0.500	1	11/15/2019 23:48	WG1381516
1,1-Dichloropropene	U		0.128	0.500	1	11/15/2019 23:48	WG1381516
1,3-Dichloropropane	U		0.147	1.00	1	11/15/2019 23:48	WG1381516
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/15/2019 23:48	WG1381516
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/15/2019 23:48	WG1381516
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	11/15/2019 23:48	WG1381516
2,2-Dichloropropane	U		0.0929	0.500	1	11/15/2019 23:48	WG1381516
Di-isopropyl ether	U		0.0924	0.500	1	11/15/2019 23:48	WG1381516
Ethylbenzene	0.510		0.158	0.500	1	11/15/2019 23:48	WG1381516
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/15/2019 23:48	WG1381516
2-Hexanone	U		0.757	5.00	1	11/15/2019 23:48	WG1381516
n-Hexane	U		0.305	5.00	1	11/15/2019 23:48	WG1381516
Iodomethane	U	JO	0.377	10.0	1	11/15/2019 23:48	WG1381516
Isopropylbenzene	0.180	U	0.126	0.500	1	11/15/2019 23:48	WG1381516
p-Isopropyltoluene	U		0.138	0.500	1	11/15/2019 23:48	WG1381516
2-Butanone (MEK)	9.49		1.28	5.00	1	11/15/2019 23:48	WG1381516
Methylene Chloride	U		1.07	2.50	1	11/15/2019 23:48	WG1381516
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/15/2019 23:48	WG1381516
Methyl tert-butyl ether	U		0.102	0.500	1	11/15/2019 23:48	WG1381516
Naphthalene	0.677	U	0.174	2.50	1	11/15/2019 23:48	WG1381516
n-Propylbenzene	0.558		0.162	0.500	1	11/15/2019 23:48	WG1381516
Styrene	U		0.117	0.500	1	11/15/2019 23:48	WG1381516
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/15/2019 23:48	WG1381516
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/15/2019 23:48	WG1381516
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/15/2019 23:48	WG1381516
Tetrachloroethene	1910		199	500	1000	11/19/2019 13:40	WG1382748
Toluene	4.14		0.412	0.500	1	11/15/2019 23:48	WG1381516
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/15/2019 23:48	WG1381516
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/15/2019 23:48	WG1381516
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/15/2019 23:48	WG1381516
1,1,2-Trichloroethane	U		0.186	0.500	1	11/15/2019 23:48	WG1381516
Trichloroethene	1120		153	500	1000	11/19/2019 13:40	WG1382748
Trichlorofluoromethane	U		0.130	2.50	1	11/15/2019 23:48	WG1381516
1,2,3-Trichloropropane	U	JO	247	2500	1000	11/19/2019 13:40	WG1382748
1,2,4-Trimethylbenzene	3.88		0.123	0.500	1	11/15/2019 23:48	WG1381516
1,2,3-Trimethylbenzene	1.88		0.0739	0.500	1	11/15/2019 23:48	WG1381516
1,3,5-Trimethylbenzene	1.24		0.124	0.500	1	11/15/2019 23:48	WG1381516

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	11/15/2019 23:48	WG1381516
Vinyl chloride	5470		118	500	1000	11/19/2019 13:40	WG1382748
Xylenes, Total	2.76		0.316	1.50	1	11/15/2019 23:48	WG1381516
(S) Toluene-d8	94.7			80.0-120		11/15/2019 23:48	WG1381516
(S) Toluene-d8	112			80.0-120		11/19/2019 13:40	WG1382748
(S) 4-Bromofluorobenzene	97.8			77.0-126		11/15/2019 23:48	WG1381516
(S) 4-Bromofluorobenzene	109			77.0-126		11/19/2019 13:40	WG1382748
(S) 1,2-Dichloroethane-d4	105			70.0-130		11/15/2019 23:48	WG1381516
(S) 1,2-Dichloroethane-d4	107			70.0-130		11/19/2019 13:40	WG1382748

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Sample Narrative:

L1158133-01 WG1381516, WG1382748: Not all compounds reportable at lower dilution.
 L1158133-01 WG1381516, WG1382748: Cannot be re-analyzed at lower dilution due to high levels of target analytes.



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	940000		2710	20000	1	11/14/2019 01:37	WG1379400

Sample Narrative:

L1158133-02 WG1379400: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	50800		51.9	1000	1	11/07/2019 22:25	WG1376795
Nitrate	U		22.7	100	1	11/07/2019 22:25	WG1376795
Sulfate	86800		77.4	5000	1	11/07/2019 22:25	WG1376795

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	193000		510	5000	5	11/10/2019 02:23	WG1378047

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	17700		15.0	100	1	11/10/2019 21:18	WG1377945
Manganese	15700		0.250	5.00	1	11/10/2019 21:18	WG1377945

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	220		31.6	100	1	11/14/2019 08:50	WG1380099
(S) a,a,a-Trifluorotoluene(FID)	104			78.0-120		11/14/2019 08:50	WG1380099

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	6310		0.287	0.678	1	11/11/2019 14:11	WG1378445
Ethane	U		0.296	1.29	1	11/11/2019 14:11	WG1378445
Ethene	49.2		0.422	1.27	1	11/11/2019 14:11	WG1378445

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	12.0	J	1.05	25.0	1	11/16/2019 00:08	WG1381516
Acrylonitrile	U		0.873	5.00	1	11/16/2019 00:08	WG1381516
Benzene	U		0.0896	0.500	1	11/16/2019 00:08	WG1381516
Bromobenzene	U		0.133	0.500	1	11/16/2019 00:08	WG1381516
Bromodichloromethane	U		0.0800	0.500	1	11/16/2019 00:08	WG1381516
Bromochloromethane	U		0.145	0.500	1	11/16/2019 00:08	WG1381516
Bromoform	U		0.186	0.500	1	11/16/2019 00:08	WG1381516
Bromomethane	U		0.785	12.5	5	11/19/2019 14:00	WG1382748
n-Butylbenzene	U		0.143	0.500	1	11/16/2019 00:08	WG1381516
sec-Butylbenzene	U		0.134	0.500	1	11/16/2019 00:08	WG1381516
tert-Butylbenzene	U		0.183	0.500	1	11/16/2019 00:08	WG1381516
Carbon disulfide	3.81		0.101	0.500	1	11/16/2019 00:08	WG1381516
Carbon tetrachloride	U		0.159	0.500	1	11/16/2019 00:08	WG1381516

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/16/2019 00:08	WG1381516
Chlorodibromomethane	U		0.128	0.500	1	11/16/2019 00:08	WG1381516
Chloroethane	U		0.141	2.50	1	11/16/2019 00:08	WG1381516
Chloroform	U		0.0860	0.500	1	11/16/2019 00:08	WG1381516
Chloromethane	U		0.153	1.25	1	11/16/2019 00:08	WG1381516
2-Chlorotoluene	U		0.111	0.500	1	11/16/2019 00:08	WG1381516
4-Chlorotoluene	U		0.0972	0.500	1	11/16/2019 00:08	WG1381516
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/16/2019 00:08	WG1381516
1,2-Dibromoethane	U		0.193	0.500	1	11/16/2019 00:08	WG1381516
Dibromomethane	U		0.117	0.500	1	11/16/2019 00:08	WG1381516
1,2-Dichlorobenzene	U		0.101	0.500	1	11/16/2019 00:08	WG1381516
1,3-Dichlorobenzene	U		0.130	0.500	1	11/16/2019 00:08	WG1381516
1,4-Dichlorobenzene	U		0.121	0.500	1	11/16/2019 00:08	WG1381516
Dichlorodifluoromethane	U		0.127	2.50	1	11/16/2019 00:08	WG1381516
1,1-Dichloroethane	U		0.114	0.500	1	11/16/2019 00:08	WG1381516
1,2-Dichloroethane	U		0.108	0.500	1	11/16/2019 00:08	WG1381516
1,1-Dichloroethene	U		0.940	2.50	5	11/19/2019 14:00	WG1382748
cis-1,2-Dichloroethene	155		0.467	2.50	5	11/19/2019 14:00	WG1382748
trans-1,2-Dichloroethene	U		0.760	2.50	5	11/19/2019 14:00	WG1382748
1,2-Dichloropropane	U		0.190	0.500	1	11/16/2019 00:08	WG1381516
1,1-Dichloropropene	U		0.128	0.500	1	11/16/2019 00:08	WG1381516
1,3-Dichloropropane	U		0.147	1.00	1	11/16/2019 00:08	WG1381516
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/16/2019 00:08	WG1381516
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/16/2019 00:08	WG1381516
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	11/16/2019 00:08	WG1381516
2,2-Dichloropropane	U		0.0929	0.500	1	11/16/2019 00:08	WG1381516
Di-isopropyl ether	U		0.0924	0.500	1	11/16/2019 00:08	WG1381516
Ethylbenzene	0.247	U	0.158	0.500	1	11/16/2019 00:08	WG1381516
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/16/2019 00:08	WG1381516
2-Hexanone	U		0.757	5.00	1	11/16/2019 00:08	WG1381516
n-Hexane	U		0.305	5.00	1	11/16/2019 00:08	WG1381516
Iodomethane	U	JO	0.377	10.0	1	11/16/2019 00:08	WG1381516
Isopropylbenzene	U		0.126	0.500	1	11/16/2019 00:08	WG1381516
p-Isopropyltoluene	U		0.138	0.500	1	11/16/2019 00:08	WG1381516
2-Butanone (MEK)	55.1		1.28	5.00	1	11/16/2019 00:08	WG1381516
Methylene Chloride	U		1.07	2.50	1	11/16/2019 00:08	WG1381516
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/16/2019 00:08	WG1381516
Methyl tert-butyl ether	U		0.102	0.500	1	11/16/2019 00:08	WG1381516
Naphthalene	U		0.174	2.50	1	11/16/2019 00:08	WG1381516
n-Propylbenzene	U		0.162	0.500	1	11/16/2019 00:08	WG1381516
Styrene	U		0.117	0.500	1	11/16/2019 00:08	WG1381516
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/16/2019 00:08	WG1381516
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/16/2019 00:08	WG1381516
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/16/2019 00:08	WG1381516
Tetrachloroethene	2.10	U	0.995	2.50	5	11/19/2019 14:00	WG1382748
Toluene	U		0.412	0.500	1	11/16/2019 00:08	WG1381516
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/16/2019 00:08	WG1381516
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/16/2019 00:08	WG1381516
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/16/2019 00:08	WG1381516
1,1,2-Trichloroethane	U		0.186	0.500	1	11/16/2019 00:08	WG1381516
Trichloroethene	1.87	U	0.765	2.50	5	11/19/2019 14:00	WG1382748
Trichlorofluoromethane	U		0.130	2.50	1	11/16/2019 00:08	WG1381516
1,2,3-Trichloropropane	U	JO	1.23	12.5	5	11/19/2019 14:00	WG1382748
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/16/2019 00:08	WG1381516
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/16/2019 00:08	WG1381516
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/16/2019 00:08	WG1381516

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	11/16/2019 00:08	WG1381516
Vinyl chloride	76.6		0.590	2.50	5	11/19/2019 14:00	WG1382748
Xylenes, Total	U		0.316	1.50	1	11/16/2019 00:08	WG1381516
<i>(S) Toluene-d8</i>	99.7			80.0-120		11/16/2019 00:08	WG1381516
<i>(S) Toluene-d8</i>	108			80.0-120		11/19/2019 14:00	WG1382748
<i>(S) 4-Bromofluorobenzene</i>	103			77.0-126		11/16/2019 00:08	WG1381516
<i>(S) 4-Bromofluorobenzene</i>	109			77.0-126		11/19/2019 14:00	WG1382748
<i>(S) 1,2-Dichloroethane-d4</i>	97.2			70.0-130		11/16/2019 00:08	WG1381516
<i>(S) 1,2-Dichloroethane-d4</i>	109			70.0-130		11/19/2019 14:00	WG1382748

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Sample Narrative:

L1158133-02 WG1381516, WG1382748: Not all compounds reportable at lower dilution.

L1158133-02 WG1381516, WG1382748: Cannot be re-analyzed at lower dilution due to high levels of target analytes.



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	1740000		2710	20000	1	11/14/2019 01:45	WG1379400

Sample Narrative:

L1158133-03 WG1379400: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	170000		260	5000	5	11/07/2019 22:51	WG1376795
Nitrate	U		22.7	100	1	11/07/2019 22:38	WG1376795
Sulfate	U		387	25000	5	11/07/2019 22:51	WG1376795

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	827000		20400	200000	200	11/12/2019 10:59	WG1378255

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	39300		750	5000	50	11/12/2019 18:26	WG1378898
Manganese	8530		12.5	250	50	11/12/2019 18:26	WG1378898

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	249	<u>B</u>	31.6	100	1	11/10/2019 23:27	WG1378064
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120		11/10/2019 23:27	WG1378064

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	17600		2.87	6.78	10	11/12/2019 13:46	WG1378754
Ethane	71.9		0.296	1.29	1	11/11/2019 14:26	WG1378445
Ethene	7880		0.422	1.27	1	11/11/2019 14:26	WG1378445

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	245		1.05	25.0	1	11/16/2019 00:29	WG1381516
Acrylonitrile	U		0.873	5.00	1	11/16/2019 00:29	WG1381516
Benzene	U		0.0896	0.500	1	11/16/2019 00:29	WG1381516
Bromobenzene	U		0.133	0.500	1	11/16/2019 00:29	WG1381516
Bromodichloromethane	U		0.0800	0.500	1	11/16/2019 00:29	WG1381516
Bromochloromethane	U		0.145	0.500	1	11/16/2019 00:29	WG1381516
Bromoform	U		0.186	0.500	1	11/16/2019 00:29	WG1381516
Bromomethane	U		3.14	50.0	20	11/19/2019 14:20	WG1382748
n-Butylbenzene	U		0.143	0.500	1	11/16/2019 00:29	WG1381516
sec-Butylbenzene	U		0.134	0.500	1	11/16/2019 00:29	WG1381516
tert-Butylbenzene	U		0.183	0.500	1	11/16/2019 00:29	WG1381516
Carbon disulfide	1.16		0.101	0.500	1	11/16/2019 00:29	WG1381516
Carbon tetrachloride	U		0.159	0.500	1	11/16/2019 00:29	WG1381516

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 11/06/19 11:55

L1158133

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/16/2019 00:29	WG1381516
Chlorodibromomethane	U		0.128	0.500	1	11/16/2019 00:29	WG1381516
Chloroethane	U		0.141	2.50	1	11/16/2019 00:29	WG1381516
Chloroform	0.362	U	0.0860	0.500	1	11/16/2019 00:29	WG1381516
Chloromethane	U		0.153	1.25	1	11/16/2019 00:29	WG1381516
2-Chlorotoluene	U		0.111	0.500	1	11/16/2019 00:29	WG1381516
4-Chlorotoluene	U		0.0972	0.500	1	11/16/2019 00:29	WG1381516
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/16/2019 00:29	WG1381516
1,2-Dibromoethane	U		0.193	0.500	1	11/16/2019 00:29	WG1381516
Dibromomethane	U		0.117	0.500	1	11/16/2019 00:29	WG1381516
1,2-Dichlorobenzene	U		0.101	0.500	1	11/16/2019 00:29	WG1381516
1,3-Dichlorobenzene	U		0.130	0.500	1	11/16/2019 00:29	WG1381516
1,4-Dichlorobenzene	U		0.121	0.500	1	11/16/2019 00:29	WG1381516
Dichlorodifluoromethane	U		0.127	2.50	1	11/16/2019 00:29	WG1381516
1,1-Dichloroethane	U		0.114	0.500	1	11/16/2019 00:29	WG1381516
1,2-Dichloroethane	U		0.108	0.500	1	11/16/2019 00:29	WG1381516
1,1-Dichloroethene	U		0.188	0.500	1	11/16/2019 00:29	WG1381516
cis-1,2-Dichloroethene	5.28	U	1.87	10.0	20	11/19/2019 14:20	WG1382748
trans-1,2-Dichloroethene	24.6		0.152	0.500	1	11/16/2019 00:29	WG1381516
1,2-Dichloropropane	U		0.190	0.500	1	11/16/2019 00:29	WG1381516
1,1-Dichloropropene	U		0.128	0.500	1	11/16/2019 00:29	WG1381516
1,3-Dichloropropane	U		0.147	1.00	1	11/16/2019 00:29	WG1381516
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/16/2019 00:29	WG1381516
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/16/2019 00:29	WG1381516
trans-1,4-Dichloro-2-butene	U	UO	0.257	5.00	1	11/16/2019 00:29	WG1381516
2,2-Dichloropropane	U		0.0929	0.500	1	11/16/2019 00:29	WG1381516
Di-isopropyl ether	U		0.0924	0.500	1	11/16/2019 00:29	WG1381516
Ethylbenzene	0.321	U	0.158	0.500	1	11/16/2019 00:29	WG1381516
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/16/2019 00:29	WG1381516
2-Hexanone	3.30	U	0.757	5.00	1	11/16/2019 00:29	WG1381516
n-Hexane	U		0.305	5.00	1	11/16/2019 00:29	WG1381516
Iodomethane	U	UO	0.377	10.0	1	11/16/2019 00:29	WG1381516
Isopropylbenzene	U		0.126	0.500	1	11/16/2019 00:29	WG1381516
p-Isopropyltoluene	U		0.138	0.500	1	11/16/2019 00:29	WG1381516
2-Butanone (MEK)	165		1.28	5.00	1	11/16/2019 00:29	WG1381516
Methylene Chloride	U		1.07	2.50	1	11/16/2019 00:29	WG1381516
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/16/2019 00:29	WG1381516
Methyl tert-butyl ether	U		0.102	0.500	1	11/16/2019 00:29	WG1381516
Naphthalene	U		0.174	2.50	1	11/16/2019 00:29	WG1381516
n-Propylbenzene	U		0.162	0.500	1	11/16/2019 00:29	WG1381516
Styrene	U		0.117	0.500	1	11/16/2019 00:29	WG1381516
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/16/2019 00:29	WG1381516
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/16/2019 00:29	WG1381516
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/16/2019 00:29	WG1381516
Tetrachloroethene	U		3.98	10.0	20	11/19/2019 14:20	WG1382748
Toluene	0.477	U	0.412	0.500	1	11/16/2019 00:29	WG1381516
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/16/2019 00:29	WG1381516
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/16/2019 00:29	WG1381516
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/16/2019 00:29	WG1381516
1,1,2-Trichloroethane	U		0.186	0.500	1	11/16/2019 00:29	WG1381516
Trichloroethene	U		3.06	10.0	20	11/19/2019 14:20	WG1382748
Trichlorofluoromethane	U		0.130	2.50	1	11/16/2019 00:29	WG1381516
1,2,3-Trichloropropane	U	UO	4.94	50.0	20	11/19/2019 14:20	WG1382748
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/16/2019 00:29	WG1381516
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/16/2019 00:29	WG1381516
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/16/2019 00:29	WG1381516

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	11/16/2019 00:29	WG1381516
Vinyl chloride	877		2.36	10.0	20	11/19/2019 14:20	WG1382748
Xylenes, Total	U		0.316	1.50	1	11/16/2019 00:29	WG1381516
(S) Toluene-d8	94.9			80.0-120		11/16/2019 00:29	WG1381516
(S) Toluene-d8	112			80.0-120		11/19/2019 14:20	WG1382748
(S) 4-Bromofluorobenzene	97.7			77.0-126		11/16/2019 00:29	WG1381516
(S) 4-Bromofluorobenzene	112			77.0-126		11/19/2019 14:20	WG1382748
(S) 1,2-Dichloroethane-d4	90.4			70.0-130		11/16/2019 00:29	WG1381516
(S) 1,2-Dichloroethane-d4	117			70.0-130		11/19/2019 14:20	WG1382748

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Sample Narrative:

L1158133-03 WG1381516, WG1382748: Not all compounds reportable at lower dilution.
 L1158133-03 WG1381516, WG1382748: Cannot be re-analyzed at lower dilution due to high levels of target analytes.



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	589000		2710	20000	1	11/14/2019 01:54	WG1379400

Sample Narrative:

L1158133-04 WG1379400: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	285000		519	10000	10	11/07/2019 23:18	WG1376795
Nitrate	U		22.7	100	1	11/07/2019 23:04	WG1376795
Sulfate	91800		77.4	5000	1	11/07/2019 23:04	WG1376795

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	56300		102	1000	1	11/10/2019 04:56	WG1378047

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	26800		15.0	100	1	11/10/2019 21:22	WG1377945
Manganese	3650		0.250	5.00	1	11/10/2019 21:22	WG1377945

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	122000		3160	10000	100	11/14/2019 09:36	WG1380099
(S) a,a,a-Trifluorotoluene(FID)	104			78.0-120		11/14/2019 09:36	WG1380099

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	22500		2.87	6.78	10	11/12/2019 13:52	WG1378754
Ethane	15.1		0.296	1.29	1	11/11/2019 14:29	WG1378445
Ethene	4000		0.422	1.27	1	11/11/2019 14:29	WG1378445

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	15.0	J	1.05	25.0	1	11/16/2019 00:49	WG1381516
Acrylonitrile	U		0.873	5.00	1	11/16/2019 00:49	WG1381516
Benzene	0.744		0.0896	0.500	1	11/16/2019 00:49	WG1381516
Bromobenzene	U		0.133	0.500	1	11/16/2019 00:49	WG1381516
Bromodichloromethane	U		0.0800	0.500	1	11/16/2019 00:49	WG1381516
Bromochloromethane	U		0.145	0.500	1	11/16/2019 00:49	WG1381516
Bromoform	U		0.186	0.500	1	11/16/2019 00:49	WG1381516
Bromomethane	U		157	2500	1000	11/19/2019 14:41	WG1382748
n-Butylbenzene	U		0.143	0.500	1	11/16/2019 00:49	WG1381516
sec-Butylbenzene	U		0.134	0.500	1	11/16/2019 00:49	WG1381516
tert-Butylbenzene	U		0.183	0.500	1	11/16/2019 00:49	WG1381516
Carbon disulfide	38.3		0.101	0.500	1	11/16/2019 00:49	WG1381516
Carbon tetrachloride	U		0.159	0.500	1	11/16/2019 00:49	WG1381516

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/16/2019 00:49	WG1381516
Chlorodibromomethane	U		0.128	0.500	1	11/16/2019 00:49	WG1381516
Chloroethane	U		0.141	2.50	1	11/16/2019 00:49	WG1381516
Chloroform	U		0.0860	0.500	1	11/16/2019 00:49	WG1381516
Chloromethane	U		0.153	1.25	1	11/16/2019 00:49	WG1381516
2-Chlorotoluene	U		0.111	0.500	1	11/16/2019 00:49	WG1381516
4-Chlorotoluene	U		0.0972	0.500	1	11/16/2019 00:49	WG1381516
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/16/2019 00:49	WG1381516
1,2-Dibromoethane	U		0.193	0.500	1	11/16/2019 00:49	WG1381516
Dibromomethane	U		0.117	0.500	1	11/16/2019 00:49	WG1381516
1,2-Dichlorobenzene	U		0.101	0.500	1	11/16/2019 00:49	WG1381516
1,3-Dichlorobenzene	U		0.130	0.500	1	11/16/2019 00:49	WG1381516
1,4-Dichlorobenzene	U		0.121	0.500	1	11/16/2019 00:49	WG1381516
Dichlorodifluoromethane	U		0.127	2.50	1	11/16/2019 00:49	WG1381516
1,1-Dichloroethane	U		0.114	0.500	1	11/16/2019 00:49	WG1381516
1,2-Dichloroethane	U		0.108	0.500	1	11/16/2019 00:49	WG1381516
1,1-Dichloroethene	268	IE	0.188	0.500	1	11/16/2019 00:49	WG1381516
cis-1,2-Dichloroethene	131000		93.3	500	1000	11/19/2019 14:41	WG1382748
trans-1,2-Dichloroethene	395	U	152	500	1000	11/19/2019 14:41	WG1382748
1,2-Dichloropropane	U		0.190	0.500	1	11/16/2019 00:49	WG1381516
1,1-Dichloropropene	U		0.128	0.500	1	11/16/2019 00:49	WG1381516
1,3-Dichloropropane	U		0.147	1.00	1	11/16/2019 00:49	WG1381516
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/16/2019 00:49	WG1381516
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/16/2019 00:49	WG1381516
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	11/16/2019 00:49	WG1381516
2,2-Dichloropropane	U		0.0929	0.500	1	11/16/2019 00:49	WG1381516
Di-isopropyl ether	U		0.0924	0.500	1	11/16/2019 00:49	WG1381516
Ethylbenzene	0.579		0.158	0.500	1	11/16/2019 00:49	WG1381516
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/16/2019 00:49	WG1381516
2-Hexanone	U		0.757	5.00	1	11/16/2019 00:49	WG1381516
n-Hexane	U		0.305	5.00	1	11/16/2019 00:49	WG1381516
Iodomethane	U	JO	0.377	10.0	1	11/16/2019 00:49	WG1381516
Isopropylbenzene	0.184	U	0.126	0.500	1	11/16/2019 00:49	WG1381516
p-Isopropyltoluene	U		0.138	0.500	1	11/16/2019 00:49	WG1381516
2-Butanone (MEK)	10.3		1.28	5.00	1	11/16/2019 00:49	WG1381516
Methylene Chloride	U		1.07	2.50	1	11/16/2019 00:49	WG1381516
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/16/2019 00:49	WG1381516
Methyl tert-butyl ether	U		0.102	0.500	1	11/16/2019 00:49	WG1381516
Naphthalene	0.672	U	0.174	2.50	1	11/16/2019 00:49	WG1381516
n-Propylbenzene	0.516		0.162	0.500	1	11/16/2019 00:49	WG1381516
Styrene	U		0.117	0.500	1	11/16/2019 00:49	WG1381516
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/16/2019 00:49	WG1381516
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/16/2019 00:49	WG1381516
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/16/2019 00:49	WG1381516
Tetrachloroethene	3180		199	500	1000	11/19/2019 14:41	WG1382748
Toluene	4.09		0.412	0.500	1	11/16/2019 00:49	WG1381516
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/16/2019 00:49	WG1381516
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/16/2019 00:49	WG1381516
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/16/2019 00:49	WG1381516
1,1,2-Trichloroethane	U		0.186	0.500	1	11/16/2019 00:49	WG1381516
Trichloroethene	1710		153	500	1000	11/19/2019 14:41	WG1382748
Trichlorofluoromethane	U		0.130	2.50	1	11/16/2019 00:49	WG1381516
1,2,3-Trichloropropane	U	JO	247	2500	1000	11/19/2019 14:41	WG1382748
1,2,4-Trimethylbenzene	3.82		0.123	0.500	1	11/16/2019 00:49	WG1381516
1,2,3-Trimethylbenzene	1.96		0.0739	0.500	1	11/16/2019 00:49	WG1381516
1,3,5-Trimethylbenzene	1.21		0.124	0.500	1	11/16/2019 00:49	WG1381516

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	11/16/2019 00:49	WG1381516
Vinyl chloride	11000		118	500	1000	11/19/2019 14:41	WG1382748
Xylenes, Total	2.77		0.316	1.50	1	11/16/2019 00:49	WG1381516
<i>(S) Toluene-d8</i>	95.1			80.0-120		11/16/2019 00:49	WG1381516
<i>(S) Toluene-d8</i>	110			80.0-120		11/19/2019 14:41	WG1382748
<i>(S) 4-Bromofluorobenzene</i>	98.9			77.0-126		11/16/2019 00:49	WG1381516
<i>(S) 4-Bromofluorobenzene</i>	108			77.0-126		11/19/2019 14:41	WG1382748
<i>(S) 1,2-Dichloroethane-d4</i>	104			70.0-130		11/16/2019 00:49	WG1381516
<i>(S) 1,2-Dichloroethane-d4</i>	110			70.0-130		11/19/2019 14:41	WG1382748

Sample Narrative:

L1158133-04 WG1381516, WG1382748: Not all compounds reportable at lower dilution.

L1158133-04 WG1381516, WG1382748: Cannot be re-analyzed at lower dilution due to high levels of target analytes.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	1180000		2710	20000	1	11/14/2019 02:09	WG1379400

Sample Narrative:

L1158133-05 WG1379400: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	121000		260	5000	5	11/07/2019 23:44	WG1376795
Nitrate	U		22.7	100	1	11/07/2019 23:31	WG1376795
Sulfate	89100		77.4	5000	1	11/07/2019 23:31	WG1376795

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	145000		510	5000	5	11/10/2019 05:19	WG1378047

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	21600		15.0	100	1	11/10/2019 22:02	WG1377945
Manganese	9130		0.250	5.00	1	11/10/2019 22:02	WG1377945

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	2310		31.6	100	1	11/11/2019 00:12	WG1378064
(S) a,a,a-Trifluorotoluene(FID)	104			78.0-120		11/11/2019 00:12	WG1378064

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	29400		2.87	6.78	10	11/12/2019 13:54	WG1378754
Ethane	U		0.296	1.29	1	11/11/2019 14:34	WG1378445
Ethene	222		0.422	1.27	1	11/11/2019 14:34	WG1378445

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	19.1	J	1.05	25.0	1	11/16/2019 01:09	WG1381516
Acrylonitrile	U		0.873	5.00	1	11/16/2019 01:09	WG1381516
Benzene	U		0.0896	0.500	1	11/16/2019 01:09	WG1381516
Bromobenzene	U		0.133	0.500	1	11/16/2019 01:09	WG1381516
Bromodichloromethane	U		0.0800	0.500	1	11/16/2019 01:09	WG1381516
Bromochloromethane	U		0.145	0.500	1	11/16/2019 01:09	WG1381516
Bromoform	U		0.186	0.500	1	11/16/2019 01:09	WG1381516
Bromomethane	U		15.7	250	100	11/19/2019 15:01	WG1382748
n-Butylbenzene	U		0.143	0.500	1	11/16/2019 01:09	WG1381516
sec-Butylbenzene	U		0.134	0.500	1	11/16/2019 01:09	WG1381516
tert-Butylbenzene	U		0.183	0.500	1	11/16/2019 01:09	WG1381516
Carbon disulfide	4.06		0.101	0.500	1	11/16/2019 01:09	WG1381516
Carbon tetrachloride	U		0.159	0.500	1	11/16/2019 01:09	WG1381516

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Collected date/time: 11/06/19 14:35

L1158133

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/16/2019 01:09	WG1381516
Chlorodibromomethane	U		0.128	0.500	1	11/16/2019 01:09	WG1381516
Chloroethane	U		0.141	2.50	1	11/16/2019 01:09	WG1381516
Chloroform	U		0.0860	0.500	1	11/16/2019 01:09	WG1381516
Chloromethane	U		0.153	1.25	1	11/16/2019 01:09	WG1381516
2-Chlorotoluene	U		0.111	0.500	1	11/16/2019 01:09	WG1381516
4-Chlorotoluene	U		0.0972	0.500	1	11/16/2019 01:09	WG1381516
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/16/2019 01:09	WG1381516
1,2-Dibromoethane	U		0.193	0.500	1	11/16/2019 01:09	WG1381516
Dibromomethane	U		0.117	0.500	1	11/16/2019 01:09	WG1381516
1,2-Dichlorobenzene	U		0.101	0.500	1	11/16/2019 01:09	WG1381516
1,3-Dichlorobenzene	U		0.130	0.500	1	11/16/2019 01:09	WG1381516
1,4-Dichlorobenzene	U		0.121	0.500	1	11/16/2019 01:09	WG1381516
Dichlorodifluoromethane	U		0.127	2.50	1	11/16/2019 01:09	WG1381516
1,1-Dichloroethane	0.148	U	0.114	0.500	1	11/16/2019 01:09	WG1381516
1,2-Dichloroethane	U		0.108	0.500	1	11/16/2019 01:09	WG1381516
1,1-Dichloroethene	13.0		0.188	0.500	1	11/16/2019 01:09	WG1381516
cis-1,2-Dichloroethene	3780		9.33	50.0	100	11/19/2019 15:01	WG1382748
trans-1,2-Dichloroethene	U		15.2	50.0	100	11/19/2019 15:01	WG1382748
1,2-Dichloropropane	U		0.190	0.500	1	11/16/2019 01:09	WG1381516
1,1-Dichloropropene	U		0.128	0.500	1	11/16/2019 01:09	WG1381516
1,3-Dichloropropane	U		0.147	1.00	1	11/16/2019 01:09	WG1381516
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/16/2019 01:09	WG1381516
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/16/2019 01:09	WG1381516
trans-1,4-Dichloro-2-butene	U	UO	0.257	5.00	1	11/16/2019 01:09	WG1381516
2,2-Dichloropropane	U		0.0929	0.500	1	11/16/2019 01:09	WG1381516
Di-isopropyl ether	U		0.0924	0.500	1	11/16/2019 01:09	WG1381516
Ethylbenzene	0.273	U	0.158	0.500	1	11/16/2019 01:09	WG1381516
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/16/2019 01:09	WG1381516
2-Hexanone	U		0.757	5.00	1	11/16/2019 01:09	WG1381516
n-Hexane	U		0.305	5.00	1	11/16/2019 01:09	WG1381516
Iodomethane	U	UO	0.377	10.0	1	11/16/2019 01:09	WG1381516
Isopropylbenzene	U		0.126	0.500	1	11/16/2019 01:09	WG1381516
p-Isopropyltoluene	U		0.138	0.500	1	11/16/2019 01:09	WG1381516
2-Butanone (MEK)	30.6		1.28	5.00	1	11/16/2019 01:09	WG1381516
Methylene Chloride	U		1.07	2.50	1	11/16/2019 01:09	WG1381516
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/16/2019 01:09	WG1381516
Methyl tert-butyl ether	U		0.102	0.500	1	11/16/2019 01:09	WG1381516
Naphthalene	U		0.174	2.50	1	11/16/2019 01:09	WG1381516
n-Propylbenzene	U		0.162	0.500	1	11/16/2019 01:09	WG1381516
Styrene	U		0.117	0.500	1	11/16/2019 01:09	WG1381516
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/16/2019 01:09	WG1381516
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/16/2019 01:09	WG1381516
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/16/2019 01:09	WG1381516
Tetrachloroethene	50.5		19.9	50.0	100	11/19/2019 15:01	WG1382748
Toluene	0.443	U	0.412	0.500	1	11/16/2019 01:09	WG1381516
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/16/2019 01:09	WG1381516
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/16/2019 01:09	WG1381516
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/16/2019 01:09	WG1381516
1,1,2-Trichloroethane	U		0.186	0.500	1	11/16/2019 01:09	WG1381516
Trichloroethene	46.2	U	15.3	50.0	100	11/19/2019 15:01	WG1382748
Trichlorofluoromethane	U		0.130	2.50	1	11/16/2019 01:09	WG1381516
1,2,3-Trichloropropane	U	UO	24.7	250	100	11/19/2019 15:01	WG1382748
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/16/2019 01:09	WG1381516
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/16/2019 01:09	WG1381516
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/16/2019 01:09	WG1381516

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	11/16/2019 01:09	WG1381516
Vinyl chloride	533		11.8	50.0	100	11/19/2019 15:01	WG1382748
Xylenes, Total	U		0.316	1.50	1	11/16/2019 01:09	WG1381516
(S) Toluene-d8	95.0			80.0-120		11/16/2019 01:09	WG1381516
(S) Toluene-d8	113			80.0-120		11/19/2019 15:01	WG1382748
(S) 4-Bromofluorobenzene	100			77.0-126		11/16/2019 01:09	WG1381516
(S) 4-Bromofluorobenzene	112			77.0-126		11/19/2019 15:01	WG1382748
(S) 1,2-Dichloroethane-d4	98.4			70.0-130		11/16/2019 01:09	WG1381516
(S) 1,2-Dichloroethane-d4	110			70.0-130		11/19/2019 15:01	WG1382748

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Sample Narrative:

L1158133-05 WG1381516, WG1382748: Not all compounds reportable at lower dilution.

L1158133-05 WG1381516, WG1382748: Cannot be re-analyzed at lower dilution due to high levels of target analytes.



Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	64.5	<u>B</u> <u>J</u>	31.6	100	1	11/10/2019 17:09	WG1378064
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120		11/10/2019 17:09	WG1378064

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	1.39	<u>B</u> <u>J</u>	1.05	25.0	1	11/15/2019 23:08	WG1381516
Acrylonitrile	U		0.873	5.00	1	11/15/2019 23:08	WG1381516
Benzene	U		0.0896	0.500	1	11/15/2019 23:08	WG1381516
Bromobenzene	U		0.133	0.500	1	11/15/2019 23:08	WG1381516
Bromodichloromethane	U		0.0800	0.500	1	11/15/2019 23:08	WG1381516
Bromochloromethane	U		0.145	0.500	1	11/15/2019 23:08	WG1381516
Bromoform	U		0.186	0.500	1	11/15/2019 23:08	WG1381516
Bromomethane	U		0.157	2.50	1	11/19/2019 11:58	WG1382748
n-Butylbenzene	U		0.143	0.500	1	11/15/2019 23:08	WG1381516
sec-Butylbenzene	U		0.134	0.500	1	11/15/2019 23:08	WG1381516
tert-Butylbenzene	U		0.183	0.500	1	11/15/2019 23:08	WG1381516
Carbon disulfide	U		0.101	0.500	1	11/15/2019 23:08	WG1381516
Carbon tetrachloride	U		0.159	0.500	1	11/15/2019 23:08	WG1381516
Chlorobenzene	U		0.140	0.500	1	11/15/2019 23:08	WG1381516
Chlorodibromomethane	U		0.128	0.500	1	11/15/2019 23:08	WG1381516
Chloroethane	U		0.141	2.50	1	11/15/2019 23:08	WG1381516
Chloroform	U		0.0860	0.500	1	11/15/2019 23:08	WG1381516
Chloromethane	U		0.153	1.25	1	11/15/2019 23:08	WG1381516
2-Chlorotoluene	U		0.111	0.500	1	11/15/2019 23:08	WG1381516
4-Chlorotoluene	U		0.0972	0.500	1	11/15/2019 23:08	WG1381516
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/15/2019 23:08	WG1381516
1,2-Dibromoethane	U		0.193	0.500	1	11/15/2019 23:08	WG1381516
Dibromomethane	U		0.117	0.500	1	11/15/2019 23:08	WG1381516
1,2-Dichlorobenzene	U		0.101	0.500	1	11/15/2019 23:08	WG1381516
1,3-Dichlorobenzene	U		0.130	0.500	1	11/15/2019 23:08	WG1381516
1,4-Dichlorobenzene	U		0.121	0.500	1	11/15/2019 23:08	WG1381516
Dichlorodifluoromethane	U		0.127	2.50	1	11/15/2019 23:08	WG1381516
1,1-Dichloroethane	U		0.114	0.500	1	11/15/2019 23:08	WG1381516
1,2-Dichloroethane	U		0.108	0.500	1	11/15/2019 23:08	WG1381516
1,1-Dichloroethene	U		0.188	0.500	1	11/15/2019 23:08	WG1381516
cis-1,2-Dichloroethene	U		0.0933	0.500	1	11/15/2019 23:08	WG1381516
trans-1,2-Dichloroethene	U		0.152	0.500	1	11/15/2019 23:08	WG1381516
1,2-Dichloropropane	U		0.190	0.500	1	11/15/2019 23:08	WG1381516
1,1-Dichloropropene	U		0.128	0.500	1	11/15/2019 23:08	WG1381516
1,3-Dichloropropane	U		0.147	1.00	1	11/15/2019 23:08	WG1381516
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/15/2019 23:08	WG1381516
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/15/2019 23:08	WG1381516
trans-1,4-Dichloro-2-butene	U	<u>JO</u>	0.257	5.00	1	11/15/2019 23:08	WG1381516
2,2-Dichloropropane	U		0.0929	0.500	1	11/15/2019 23:08	WG1381516
Di-isopropyl ether	U		0.0924	0.500	1	11/15/2019 23:08	WG1381516
Ethylbenzene	U		0.158	0.500	1	11/15/2019 23:08	WG1381516
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/15/2019 23:08	WG1381516
2-Hexanone	U		0.757	5.00	1	11/15/2019 23:08	WG1381516
n-Hexane	U		0.305	5.00	1	11/15/2019 23:08	WG1381516
Iodomethane	U	<u>JO</u>	0.377	10.0	1	11/15/2019 23:08	WG1381516
Isopropylbenzene	U		0.126	0.500	1	11/15/2019 23:08	WG1381516
p-Isopropyltoluene	U		0.138	0.500	1	11/15/2019 23:08	WG1381516
2-Butanone (MEK)	U		1.28	5.00	1	11/15/2019 23:08	WG1381516



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methylene Chloride	U		1.07	2.50	1	11/15/2019 23:08	WG1381516
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/15/2019 23:08	WG1381516
Methyl tert-butyl ether	U		0.102	0.500	1	11/15/2019 23:08	WG1381516
Naphthalene	U		0.174	2.50	1	11/15/2019 23:08	WG1381516
n-Propylbenzene	U		0.162	0.500	1	11/15/2019 23:08	WG1381516
Styrene	U		0.117	0.500	1	11/15/2019 23:08	WG1381516
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/15/2019 23:08	WG1381516
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/15/2019 23:08	WG1381516
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/15/2019 23:08	WG1381516
Tetrachloroethene	U		0.199	0.500	1	11/19/2019 11:58	WG1382748
Toluene	U		0.412	0.500	1	11/15/2019 23:08	WG1381516
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/15/2019 23:08	WG1381516
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/15/2019 23:08	WG1381516
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/15/2019 23:08	WG1381516
1,1,2-Trichloroethane	U		0.186	0.500	1	11/15/2019 23:08	WG1381516
Trichloroethene	U		0.153	0.500	1	11/15/2019 23:08	WG1381516
Trichlorofluoromethane	U		0.130	2.50	1	11/15/2019 23:08	WG1381516
1,2,3-Trichloropropane	U	<u>JO</u>	0.247	2.50	1	11/19/2019 11:58	WG1382748
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/15/2019 23:08	WG1381516
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/15/2019 23:08	WG1381516
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/15/2019 23:08	WG1381516
Vinyl acetate	U		0.645	5.00	1	11/15/2019 23:08	WG1381516
Vinyl chloride	U		0.118	0.500	1	11/15/2019 23:08	WG1381516
Xylenes, Total	U		0.316	1.50	1	11/15/2019 23:08	WG1381516
(S) Toluene-d8	97.9			80.0-120		11/15/2019 23:08	WG1381516
(S) Toluene-d8	109			80.0-120		11/19/2019 11:58	WG1382748
(S) 4-Bromofluorobenzene	101			77.0-126		11/15/2019 23:08	WG1381516
(S) 4-Bromofluorobenzene	109			77.0-126		11/19/2019 11:58	WG1382748
(S) 1,2-Dichloroethane-d4	92.9			70.0-130		11/15/2019 23:08	WG1381516
(S) 1,2-Dichloroethane-d4	112			70.0-130		11/19/2019 11:58	WG1382748

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3471760-1 11/13/19 23:16

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	4200	J	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1158107-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1158107-01 11/13/19 23:30 • (DUP) R3471760-2 11/13/19 23:39

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	222000	221000	1	0.503		20

Sample Narrative:

OS: Endpoint pH 4.5
DUP: Endpoint pH 4.5

L1158133-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1158133-05 11/14/19 02:09 • (DUP) R3471760-4 11/14/19 02:16

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	1180000	1180000	1	0.113		20

Sample Narrative:

OS: Endpoint pH 4.5
DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3471760-3 11/14/19 00:38

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	101000	101	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3469807-1 11/07/19 14:57

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	U		51.9	1000
Nitrate	U		22.7	100
Sulfate	128	↓	77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1158058-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1158058-01 11/07/19 15:50 • (DUP) R3469807-3 11/07/19 16:07

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	5860	5860	1	0.0358		15
Nitrate	423	417	1	1.45		15
Sulfate	8320	8300	1	0.238		15

L1158117-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1158117-02 11/08/19 03:58 • (DUP) R3469807-6 11/08/19 04:16

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	28000	27900	1	0.284		15
Nitrate	U	0.000	1	0.000		15
Sulfate	13200	13100	1	0.0586		15

Laboratory Control Sample (LCS)

(LCS) R3469807-2 11/07/19 15:14

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Chloride	40000	39500	98.7	80.0-120	
Nitrate	8000	8210	103	80.0-120	
Sulfate	40000	39200	98.1	80.0-120	



[L1158133-01](#)

L1158089-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1158089-01 11/07/19 16:25 • (MS) R3469807-4 11/07/19 16:42 • (MSD) R3469807-5 11/07/19 17:00

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	29100	78600	78600	98.9	98.9	1	80.0-120			0.0193	15
Nitrate	5000	432	5240	5350	96.2	98.4	1	80.0-120			2.05	15

1 Cp

2 Tc

3 Ss

L1158117-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1158117-02 11/08/19 03:58 • (MS) R3469807-7 11/08/19 04:33

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	28000	74800	93.5	1	80.0-120	
Nitrate	5000	U	4700	94.1	1	80.0-120	
Sulfate	50000	13200	58900	91.5	1	80.0-120	

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3469886-1 11/07/19 12:05

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	131	↓	51.9	1000
Nitrate	30.1	↓	22.7	100
Sulfate	221	↓	77.4	5000

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1158126-19 Original Sample (OS) • Duplicate (DUP)

(OS) L1158126-19 11/07/19 18:29 • (DUP) R3469886-6 11/07/19 18:43

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	157000	159000	5	1.39		15
Nitrate	22900	23200	5	1.06		15
Sulfate	218000	223000	5	2.14		15

L1158135-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1158135-01 11/07/19 23:57 • (DUP) R3469886-7 11/08/19 00:10

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	12400	12000	1	3.64		15
Nitrate	7180	6830	1	4.89		15
Sulfate	14700	14300	1	3.10		15

Laboratory Control Sample (LCS)

(LCS) R3469886-2 11/07/19 12:18

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39100	97.7	80.0-120	
Nitrate	8000	8040	100	80.0-120	
Sulfate	40000	39400	98.4	80.0-120	



L1158135-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1158135-01 11/07/19 23:57 • (MS) R3469886-8 11/08/19 00:23

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	12400	61600	98.2	1	80.0-120	
Nitrate	5000	7180	11500	87.2	1	80.0-120	E
Sulfate	50000	14700	63200	97.0	1	80.0-120	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3470339-1 11/09/19 19:32

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	296	↓	102	1000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1158107-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1158107-03 11/09/19 22:11 • (DUP) R3470339-3 11/09/19 22:29

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC	ND	735	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3470339-2 11/09/19 20:15

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC	75000	80200	107	85.0-115	

L1158114-27 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1158114-27 11/10/19 00:33 • (MS) R3470339-4 11/10/19 00:55 • (MSD) R3470339-5 11/10/19 01:18

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC	50000	11100	63800	66100	105	110	1	80.0-120			3.51	20

L1158145-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1158145-01 11/10/19 06:04 • (MS) R3470339-7 11/10/19 10:53 • (MSD) R3470339-8 11/10/19 11:16

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC	50000	2790	58000	58900	110	112	1	80.0-120			1.56	20



Method Blank (MB)

(MB) R3471065-1 11/11/19 20:42

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	359	↓	102	1000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1158172-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1158172-08 11/11/19 22:35 • (DUP) R3471065-3 11/11/19 22:50

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	60900	61000	1	0.246		20

L1158172-14 Original Sample (OS) • Duplicate (DUP)

(OS) L1158172-14 11/12/19 01:46 • (DUP) R3471065-6 11/12/19 01:58

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	50400	50000	10	0.777		20

Laboratory Control Sample (LCS)

(LCS) R3471065-2 11/11/19 21:13

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC (Total Organic Carbon)	75000	74500	99.4	85.0-115	

L1158172-11 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1158172-11 11/12/19 00:34 • (MS) R3471065-4 11/12/19 00:52 • (MSD) R3471065-5 11/12/19 01:07

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	412	52800	50600	105	100	1	80.0-120			4.28	20

L1158172-15 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1158172-15 11/12/19 03:12 • (MS) R3471065-7 11/12/19 03:28 • (MSD) R3471065-8 11/12/19 03:51

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	907	49600	51300	97.4	101	1	80.0-120			3.27	20



Method Blank (MB)

(MB) R3470422-1 11/10/19 19:41

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Iron	U		15.0	100
Manganese	0.736	J	0.250	5.00

1 Cp

2 Tc

3 Ss

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3470422-2 11/10/19 19:45 • (LCSD) R3470422-3 11/10/19 19:48

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Iron	5000	4770	4560	95.3	91.3	80.0-120			4.36	20
Manganese	50.0	48.1	48.6	96.1	97.2	80.0-120			1.13	20

4 Cn

5 Sr

6 Qc

L1155666-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1155666-01 11/10/19 19:52 • (MS) R3470422-5 11/10/19 19:59 • (MSD) R3470422-6 11/10/19 20:02

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Iron	5000	123	4880	4790	95.2	93.3	1	75.0-125			1.89	20
Manganese	50.0	13.4	60.1	59.8	93.5	92.8	1	75.0-125			0.572	20

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3471180-1 11/12/19 16:40

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Iron	U		15.0	100
Manganese	0.574	J	0.250	5.00

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3471180-2 11/12/19 16:44 • (LCSD) R3471180-3 11/12/19 16:47

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Iron	5000	4820	4590	96.3	91.8	80.0-120			4.84	20
Manganese	50.0	47.6	47.2	95.1	94.5	80.0-120			0.695	20

5 Sr

6 Qc

L1158207-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1158207-07 11/12/19 16:51 • (MS) R3471180-5 11/12/19 16:57 • (MSD) R3471180-6 11/12/19 17:01

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Iron	5000	274	5110	5100	96.8	96.6	1	75.0-125			0.221	20
Manganese	50.0	10.9	58.8	57.6	95.7	93.2	1	75.0-125			2.11	20

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3471655-3 11/10/19 15:18

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	54.6	↓	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3471655-1 11/10/19 14:11 • (LCSD) R3471655-2 11/10/19 14:33

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	6220	5980	113	109	70.0-124			3.93	20
(S) a,a,a-Trifluorotoluene(FID)				108	107	78.0-120				

L1158152-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1158152-01 11/11/19 00:34 • (MS) R3471655-4 11/11/19 00:57 • (MSD) R3471655-5 11/11/19 01:19

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	444	6300	6500	106	110	1	10.0-155			3.12	21
(S) a,a,a-Trifluorotoluene(FID)					108	111		78.0-120				



Method Blank (MB)

(MB) R3472518-2 11/14/19 00:49

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	104			78.0-120

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS)

(LCS) R3472518-1 11/14/19 00:01

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	6220	113	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			88.2	78.0-120	

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3470714-1 11/11/19 13:51

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

L1158126-24 Original Sample (OS) • Duplicate (DUP)

(OS) L1158126-24 11/11/19 14:01 • (DUP) R3470714-2 11/11/19 14:49

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	ND	0.000	1	0.000		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3470714-3 11/11/19 15:47 • (LCSD) R3470714-4 11/11/19 16:02

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	76.1	77.3	112	114	85.0-115			1.56	20
Ethane	129	138	134	107	104	85.0-115			2.94	20
Ethene	127	144	140	113	110	85.0-115			2.82	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3471068-1 11/12/19 13:11

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Methane	U		0.287	0.678

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1158126-22 Original Sample (OS) • Duplicate (DUP)

(OS) L1158126-22 11/12/19 13:28 • (DUP) R3471068-2 11/12/19 13:48

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	41.2	34.2	1	18.6		20

L1158152-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1158152-03 11/12/19 14:06 • (DUP) R3471068-3 11/12/19 14:24

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	715	693	1	3.12		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3471068-4 11/12/19 14:27 • (LCSD) R3471068-5 11/12/19 14:31

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Methane	67.8	75.0	74.9	111	110	85.0-115			0.133	20



Method Blank (MB)

(MB) R3473319-3 11/15/19 22:11

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	1.05	U	1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500
Ethylbenzene	U		0.158	0.500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3473319-3 11/15/19 22:11

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
Toluene	U		0.412	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,2,4-Trimethylbenzene	U		0.123	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	97.2			80.0-120
(S) 4-Bromofluorobenzene	101			77.0-126
(S) 1,2-Dichloroethane-d4	99.4			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3473319-1 11/15/19 21:11 • (LCSD) R3473319-2 11/15/19 21:31

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Acetone	25.0	22.3	21.4	89.2	85.6	19.0-160			4.12	27
Acrylonitrile	25.0	22.3	22.6	89.2	90.4	55.0-149			1.34	20
Benzene	5.00	4.33	4.40	86.6	88.0	70.0-123			1.60	20
Bromobenzene	5.00	4.62	4.72	92.4	94.4	73.0-121			2.14	20
Bromodichloromethane	5.00	4.34	4.48	86.8	89.6	75.0-120			3.17	20
Bromochloromethane	5.00	4.41	5.06	88.2	101	76.0-122			13.7	20
Bromoform	5.00	4.06	3.92	81.2	78.4	68.0-132			3.51	20
n-Butylbenzene	5.00	4.72	5.05	94.4	101	73.0-125			6.76	20
sec-Butylbenzene	5.00	4.60	4.78	92.0	95.6	75.0-125			3.84	20
tert-Butylbenzene	5.00	4.50	4.36	90.0	87.2	76.0-124			3.16	20
Carbon disulfide	5.00	4.68	4.66	93.6	93.2	61.0-128			0.428	20
Carbon tetrachloride	5.00	4.82	4.72	96.4	94.4	68.0-126			2.10	20
Chlorobenzene	5.00	4.83	4.70	96.6	94.0	80.0-121			2.73	20
Chlorodibromomethane	5.00	4.39	4.37	87.8	87.4	77.0-125			0.457	20
Chloroethane	5.00	5.10	4.69	102	93.8	47.0-150			8.38	20
Chloroform	5.00	4.35	4.39	87.0	87.8	73.0-120			0.915	20
Chloromethane	5.00	4.07	4.25	81.4	85.0	41.0-142			4.33	20
2-Chlorotoluene	5.00	4.72	4.73	94.4	94.6	76.0-123			0.212	20
4-Chlorotoluene	5.00	4.67	4.75	93.4	95.0	75.0-122			1.70	20
1,2-Dibromo-3-Chloropropane	5.00	4.04	3.71	80.8	74.2	58.0-134			8.52	20
1,2-Dibromoethane	5.00	4.64	4.69	92.8	93.8	80.0-122			1.07	20
Dibromomethane	5.00	4.74	4.86	94.8	97.2	80.0-120			2.50	20
1,2-Dichlorobenzene	5.00	4.75	5.00	95.0	100	79.0-121			5.13	20
1,3-Dichlorobenzene	5.00	4.99	4.98	99.8	99.6	79.0-120			0.201	20
1,4-Dichlorobenzene	5.00	5.06	5.19	101	104	79.0-120			2.54	20
trans-1,4-Dichloro-2-butene	5.00	3.92	3.49	78.4	69.8	33.0-144			11.6	20
Dichlorodifluoromethane	5.00	5.45	5.58	109	112	51.0-149			2.36	20
1,1-Dichloroethane	5.00	4.37	4.65	87.4	93.0	70.0-126			6.21	20
1,2-Dichloroethane	5.00	4.45	4.44	89.0	88.8	70.0-128			0.225	20
1,1-Dichloroethene	5.00	4.76	4.91	95.2	98.2	71.0-124			3.10	20
cis-1,2-Dichloroethene	5.00	4.75	4.83	95.0	96.6	73.0-120			1.67	20
trans-1,2-Dichloroethene	5.00	4.49	4.89	89.8	97.8	73.0-120			8.53	20
1,2-Dichloropropane	5.00	4.36	4.23	87.2	84.6	77.0-125			3.03	20
1,1-Dichloropropene	5.00	4.89	4.84	97.8	96.8	74.0-126			1.03	20
1,3-Dichloropropane	5.00	4.68	4.60	93.6	92.0	80.0-120			1.72	20
cis-1,3-Dichloropropene	5.00	4.32	4.59	86.4	91.8	80.0-123			6.06	20
trans-1,3-Dichloropropene	5.00	4.77	4.59	95.4	91.8	78.0-124			3.85	20
2,2-Dichloropropane	5.00	4.68	4.50	93.6	90.0	58.0-130			3.92	20
Di-isopropyl ether	5.00	4.55	4.60	91.0	92.0	58.0-138			1.09	20
Ethylbenzene	5.00	4.42	4.50	88.4	90.0	79.0-123			1.79	20

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3473319-1 11/15/19 21:11 • (LCSD) R3473319-2 11/15/19 21:31

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Hexachloro-1,3-butadiene	5.00	5.12	4.49	102	89.8	54.0-138			13.1	20
2-Hexanone	25.0	22.3	21.2	89.2	84.8	67.0-149			5.06	20
n-Hexane	5.00	4.95	5.01	99.0	100	57.0-133			1.20	20
Iodomethane	25.0	19.8	22.7	79.2	90.8	33.0-147			13.6	26
Isopropylbenzene	5.00	4.47	4.54	89.4	90.8	76.0-127			1.55	20
p-Isopropyltoluene	5.00	4.59	4.52	91.8	90.4	76.0-125			1.54	20
2-Butanone (MEK)	25.0	23.5	21.8	94.0	87.2	44.0-160			7.51	20
Methylene Chloride	5.00	4.43	4.36	88.6	87.2	67.0-120			1.59	20
4-Methyl-2-pentanone (MIBK)	25.0	22.3	21.0	89.2	84.0	68.0-142			6.00	20
Methyl tert-butyl ether	5.00	4.50	4.58	90.0	91.6	68.0-125			1.76	20
Naphthalene	5.00	4.36	4.06	87.2	81.2	54.0-135			7.13	20
n-Propylbenzene	5.00	4.52	4.75	90.4	95.0	77.0-124			4.96	20
Styrene	5.00	4.72	4.67	94.4	93.4	73.0-130			1.06	20
1,1,1,2-Tetrachloroethane	5.00	4.54	4.63	90.8	92.6	75.0-125			1.96	20
1,1,2,2-Tetrachloroethane	5.00	4.55	4.28	91.0	85.6	65.0-130			6.12	20
Toluene	5.00	4.49	4.67	89.8	93.4	79.0-120			3.93	20
1,1,2-Trichlorotrifluoroethane	5.00	5.25	5.47	105	109	69.0-132			4.10	20
1,2,3-Trichlorobenzene	5.00	4.67	4.48	93.4	89.6	50.0-138			4.15	20
1,2,4-Trichlorobenzene	5.00	5.40	5.44	108	109	57.0-137			0.738	20
1,1,1-Trichloroethane	5.00	4.73	4.84	94.6	96.8	73.0-124			2.30	20
1,1,2-Trichloroethane	5.00	4.80	4.68	96.0	93.6	80.0-120			2.53	20
Trichloroethene	5.00	4.31	4.67	86.2	93.4	78.0-124			8.02	20
Trichlorofluoromethane	5.00	5.30	5.22	106	104	59.0-147			1.52	20
1,2,3-Trimethylbenzene	5.00	4.85	4.73	97.0	94.6	77.0-120			2.51	20
1,2,4-Trimethylbenzene	5.00	4.62	4.82	92.4	96.4	76.0-121			4.24	20
1,3,5-Trimethylbenzene	5.00	4.77	4.60	95.4	92.0	76.0-122			3.63	20
Vinyl acetate	25.0	20.5	19.4	82.0	77.6	11.0-160			5.51	20
Vinyl chloride	5.00	4.81	4.69	96.2	93.8	67.0-131			2.53	20
Xylenes, Total	15.0	14.0	13.8	93.3	92.0	79.0-123			1.44	20
(S) Toluene-d8				99.2	96.6	80.0-120				
(S) 4-Bromofluorobenzene				103	97.5	77.0-126				
(S) 1,2-Dichloroethane-d4				97.1	97.3	70.0-130				

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3473794-4 11/19/19 10:30

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Bromomethane	U		0.157	2.50
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
Tetrachloroethene	U		0.199	0.500
Trichloroethene	U		0.153	0.500
1,2,3-Trichloropropane	U		0.247	2.50
Vinyl chloride	U		0.118	0.500
(S) Toluene-d8	112			80.0-120
(S) 4-Bromofluorobenzene	112			77.0-126
(S) 1,2-Dichloroethane-d4	111			70.0-130

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3473794-1 11/19/19 09:08 • (LCSD) R3473794-2 11/19/19 09:29

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Bromomethane	5.00	5.27	5.07	105	101	10.0-160			3.87	25
1,1-Dichloroethene	5.00	5.07	4.81	101	96.2	71.0-124			5.26	20
cis-1,2-Dichloroethene	5.00	5.12	4.61	102	92.2	73.0-120			10.5	20
trans-1,2-Dichloroethene	5.00	4.99	4.45	99.8	89.0	73.0-120			11.4	20
Tetrachloroethene	5.00	5.55	5.47	111	109	72.0-132			1.45	20
Trichloroethene	5.00	5.49	5.33	110	107	78.0-124			2.96	20
1,2,3-Trichloropropane	5.00	3.78	4.02	75.6	80.4	73.0-130			6.15	20
Vinyl chloride	5.00	4.88	4.77	97.6	95.4	67.0-131			2.28	20
(S) Toluene-d8				107	108	80.0-120				
(S) 4-Bromofluorobenzene				110	112	77.0-126				
(S) 1,2-Dichloroethane-d4				114	112	70.0-130				



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration method criteria.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

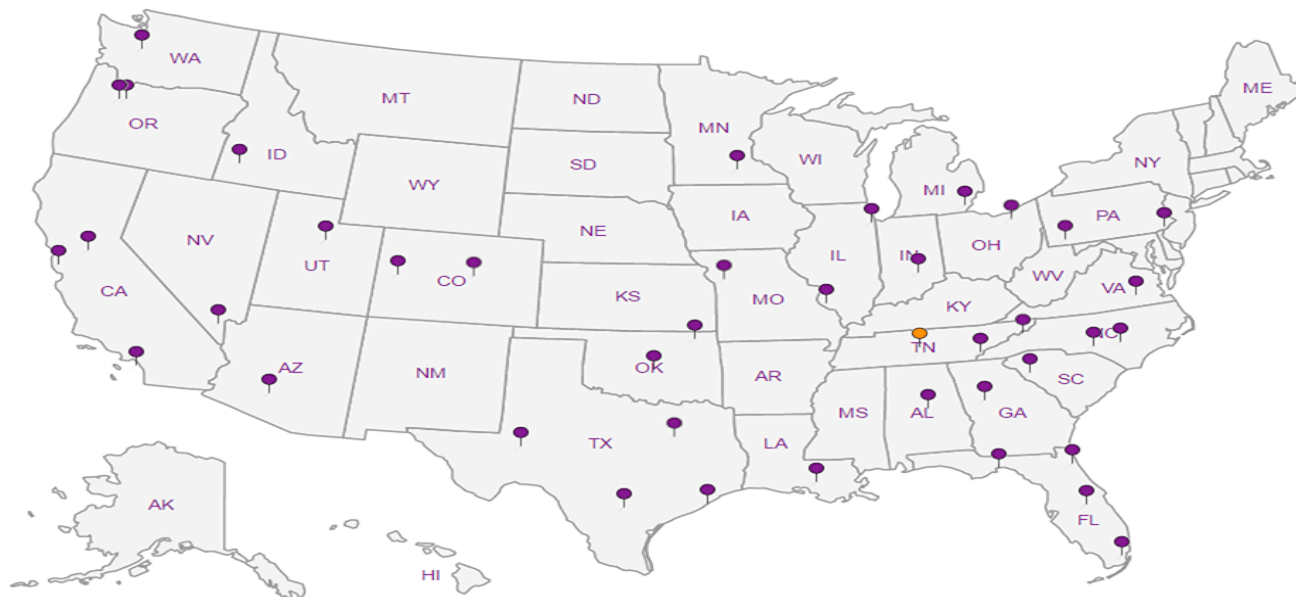
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

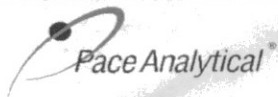
5 Sr

6 Qc

7 Gl

8 Al

9 Sc



CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

Company: PES Environmental, Inc. Address: 1215 4th Ave STE 1350, Seattle, WA 98161	Billing Information: Attn: Accounts Payable 1215 4th Ave STE 1350, Seattle, WA 98161
Report To: Bill Haldeman/Brian O'Neal	Email To: bhdeman@pesenv.com; boneal@pesenv.com
Copy To: Kim Vik, Shannon McKernan, Karsten Springstead	Site Collection Info/Address: 700 Dexter Ave N

Customer Project Name/Number: American Linen 1413.001.02-5011	State: WA / County/City: King/Seattle [x] PT [] MT [] CT [] ET	Time Zone Collected:
Phone: 206-529-3980 Email: mjoiner@pesenv.com	Site/Facility ID #:	Compliance Monitoring? [x] Yes [] No
Collected By (print): Hannah Cohen	Purchase Order #: PESENVSWA-ALP	DW PWS ID #:
Collected By (signature): Hannah Cohen	Turnaround Date Required:	DW Location Code:
Sample Disposal: [] Dispose as appropriate [] Return [] Archive: [] Hold:	Rush: [] Same Day [] Next Day [] 2 Day [] 3 Day [] 4 Day [] 5 Day (Expedite Charges Apply)	Immediately Packed on Ice: [x] Yes [] No
		Field Filtered (if applicable): [] Yes [] No
		Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Composite End		Res Cl	# of Ctns
			Date	Time	Date	Time		
MW-920-110619	GW	Grab	11/6/19	900				12
MW-180-110619				1000				12
MW-178-110619				1155				12
MW-177-110619				1305				12
MW-179-110619				1435				12
TB-110619		-		1550				2

LAB USE ONLY - Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Container Preservative Type **	Lab Project Manager:
** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other	

Analyses	Lab Profile/Line:						
	NO3, SO4, Cl 125mlHDPE-NoPres	Alkalinity 125mlHDPE-NoPres	EEM RSK175LL 40mlAmb-HCl	TOC 250mlAmb-HCl or 250mlHDPE-HCl	Total Fe, Mn 6020 250mlHDPE-HNO3	VOCs 8260LLC 40mlAmb-HCl	NwTPHG X 40mlAmb-HCl
Lab Sample Receipt Checklist:	Custody Seals Present/Intact Y N NA						
Custody Signatures Present	Y N NA						
Collector Signature Present	Y N NA						
Bottles Intact	Y N NA						
Correct Bottles	Y N NA						
Sufficient Volume	Y N NA						
Samples Received on Ice	Y N NA						
VOA - Headspace Acceptable	Y N NA						
USDA Regulated Soils	Y N NA						
Samples in Holding Time	Y N NA						
Residual Chlorine Present	Y N NA						
Cl Strips:	Sample pH Acceptable Y N NA						
pH Strips:	Sulfide Present Y N NA						
Lead Acetate Strips:							
LAB USE ONLY:	Lab Sample # / Comments:						
	L1198133						
	-01						
	-02						
	-03						
	-04						
	-05						
	-06						

Customer Remarks / Special Conditions / Possible Hazards:	Type of Ice Used: Wet Blue Dry None	SHORT HOLDS PRESENT (<72 hours): Y N N/A
	Packing Material Used:	Lab Tracking #: 120357840133
	Radchem sample(s) screened (<500 cpm): Y N NA	Samples received via: FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#:
Cooler 1 Temp Upon Receipt: 21°C
Cooler 1 Therm Corr. Factor: -0.6°C
Cooler 1 Corrected Temp: 20.4°C
Comments: RAD SCREEN: <0.5 mg/L

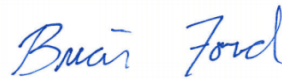
Relinquished by/Company: (Signature) Hannah Cohen	Date/Time: 11/6/19 1610	Received by/Company: (Signature)	Date/Time: D249
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time: 11/7/19 8:30

Acctnum:	Trip Blank Received: Y N NA
Template:	HCL MeOH TSP Other
Prelogin:	
PM:	Non Conformance(s):
PB:	YES / NO
	Page: 1 of 1

PES Environmental, Inc.- WA

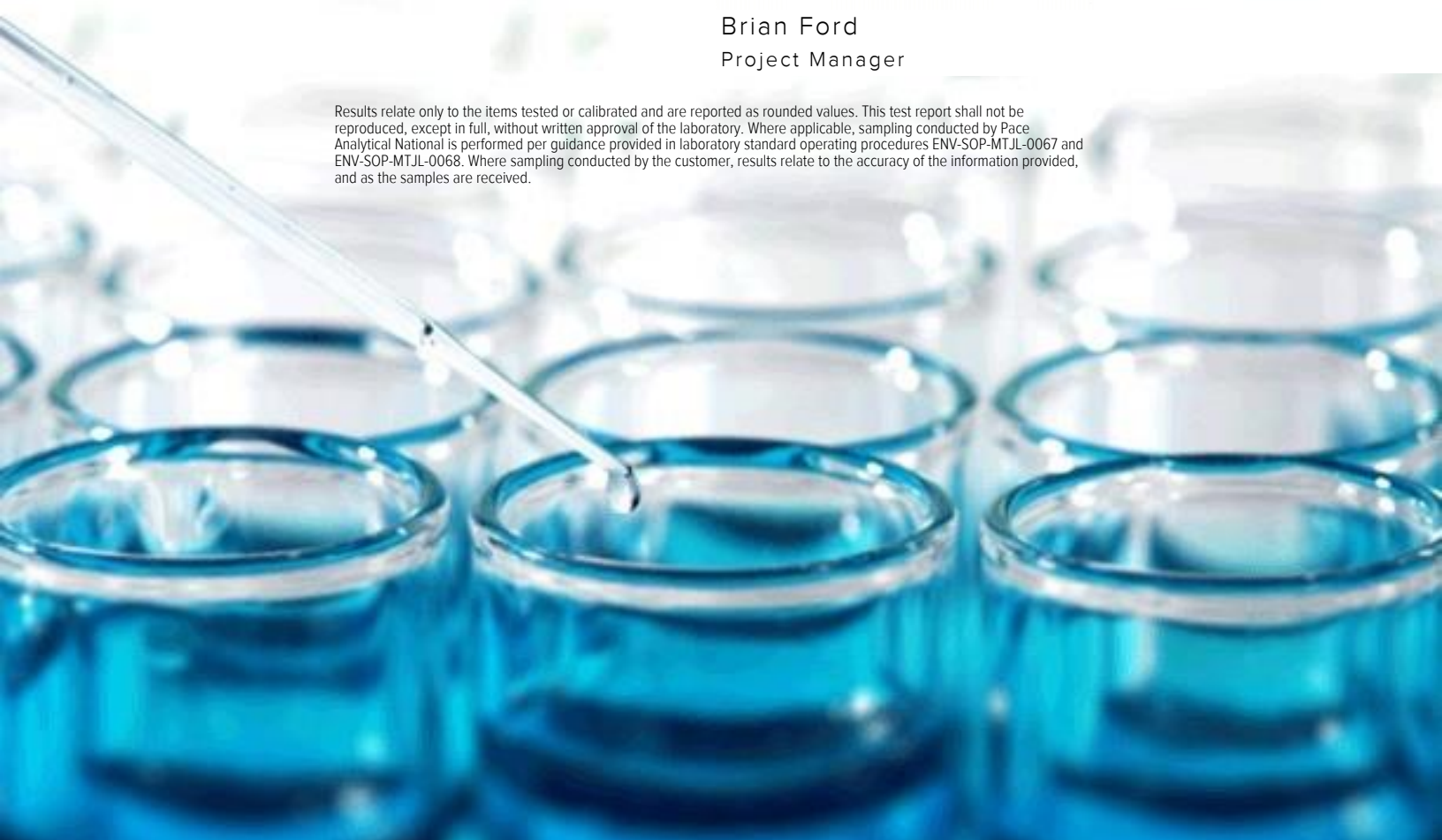
Sample Delivery Group: L1159108
Samples Received: 11/09/2019
Project Number: 1413.001.05.601
Description: American Linen
Site: AMERICAN LINEN
Report To: Brian O'Neal/Bill Haldeman
1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





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SAMPLE SUMMARY



MW-921-110819 L1159108-01 GW

Collected by
Hannah Cohen
Collected date/time
11/08/19 08:00
Received date/time
11/09/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1381472	1	11/16/19 11:46	11/16/19 11:46	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1377890	1	11/09/19 17:53	11/09/19 17:53	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1377890	5	11/09/19 18:07	11/09/19 18:07	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1379453	1	11/13/19 19:01	11/13/19 19:01	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1379539	1	11/15/19 18:57	11/15/19 22:31	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1380294	1	11/14/19 14:14	11/14/19 14:14	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1380940	10	11/15/19 11:14	11/15/19 11:14	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1381516	5	11/16/19 03:52	11/16/19 03:52	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1382748	250	11/19/19 17:23	11/19/19 17:23	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1380039	20	11/13/19 23:40	11/13/19 23:40	JCP	Sacramento, CA

1
Cp

2
Tc

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Ss

4
Cn

5
Sr

6
Qc

MW-184-110819 L1159108-02 GW

Collected by
Hannah Cohen
Collected date/time
11/08/19 09:10
Received date/time
11/09/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1381472	1	11/16/19 11:53	11/16/19 11:53	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1377890	1	11/09/19 18:20	11/09/19 18:20	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1379453	1	11/13/19 19:15	11/13/19 19:15	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1379539	1	11/15/19 18:57	11/15/19 22:35	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1380294	1	11/14/19 14:21	11/14/19 14:21	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1381516	1	11/16/19 04:13	11/16/19 04:13	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1382748	100	11/19/19 17:44	11/19/19 17:44	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1380039	1	11/13/19 22:58	11/13/19 22:58	JCP	Sacramento, CA

7
Gl

8
Al

9
Sc

MW-183-110819 L1159108-03 GW

Collected by
Hannah Cohen
Collected date/time
11/08/19 10:00
Received date/time
11/09/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1381472	1	11/16/19 12:02	11/16/19 12:02	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1377890	1	11/09/19 18:59	11/09/19 18:59	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1379453	1	11/13/19 20:10	11/13/19 20:10	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1379539	1	11/15/19 18:57	11/16/19 10:48	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1380294	1	11/14/19 14:24	11/14/19 14:24	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1381516	1	11/16/19 04:33	11/16/19 04:33	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1382748	1	11/19/19 18:04	11/19/19 18:04	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1380039	1	11/13/19 23:19	11/13/19 23:19	JCP	Sacramento, CA

MW-181-110819 L1159108-04 GW

Collected by
Hannah Cohen
Collected date/time
11/08/19 11:10
Received date/time
11/09/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1381472	1	11/16/19 12:10	11/16/19 12:10	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1377890	1	11/09/19 19:12	11/09/19 19:12	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1377890	5	11/09/19 19:25	11/09/19 19:25	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1379453	1	11/13/19 20:27	11/13/19 20:27	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1379539	1	11/15/19 18:57	11/16/19 10:52	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1380294	1	11/14/19 14:32	11/14/19 14:32	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1380940	10	11/15/19 11:16	11/15/19 11:16	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1381516	1	11/16/19 04:53	11/16/19 04:53	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1382748	500	11/19/19 18:24	11/19/19 18:24	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1380039	25	11/14/19 00:00	11/14/19 00:00	JCP	Sacramento, CA

SAMPLE SUMMARY

MW-182-110819 L1159108-05 GW

Collected by Hannah Cohen
 Collected date/time 11/08/19 13:15
 Received date/time 11/09/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1381472	1	11/16/19 12:17	11/16/19 12:17	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1377890	1	11/09/19 19:38	11/09/19 19:38	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1377890	5	11/09/19 19:51	11/09/19 19:51	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1379453	5	11/13/19 20:41	11/13/19 20:41	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1379539	1	11/15/19 18:57	11/16/19 10:56	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1380294	1	11/14/19 14:38	11/14/19 14:38	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1380940	10	11/15/19 11:19	11/15/19 11:19	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1381516	1	11/16/19 05:14	11/16/19 05:14	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1382748	500	11/19/19 18:45	11/19/19 18:45	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1380039	10	11/14/19 00:21	11/14/19 00:21	JCP	Sacramento, CA

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

TB-110819 L1159108-06 GW

Collected by Hannah Cohen
 Collected date/time 11/08/19 15:30
 Received date/time 11/09/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1381516	1	11/15/19 23:28	11/15/19 23:28	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1382748	1	11/19/19 12:18	11/19/19 12:18	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1381810	1	11/16/19 19:51	11/16/19 19:51	JCP	Sacramento, CA



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	605000		2710	20000	1	11/16/2019 11:46	WG1381472

Sample Narrative:

L1159108-01 WG1381472: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	161000		260	5000	5	11/09/2019 18:07	WG1377890
Nitrate	U		22.7	100	1	11/09/2019 17:53	WG1377890
Sulfate	449	B J	77.4	5000	1	11/09/2019 17:53	WG1377890

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	26200		102	1000	1	11/13/2019 19:01	WG1379453

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	3740		15.0	100	1	11/15/2019 22:31	WG1379539
Manganese	1090		0.250	5.00	1	11/15/2019 22:31	WG1379539

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	12100		2.87	6.78	10	11/15/2019 11:14	WG1380940
Ethane	18.7		0.296	1.29	1	11/14/2019 14:14	WG1380294
Ethene	2710		0.422	1.27	1	11/14/2019 14:14	WG1380294

Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	24.4	B J	5.25	125	5	11/16/2019 03:52	WG1381516
Gasoline Range Organics-NWTPH	23700		498	2000	20	11/13/2019 23:40	WG1380039
Acrylonitrile	U		4.37	25.0	5	11/16/2019 03:52	WG1381516
Benzene	0.672	J	0.448	2.50	5	11/16/2019 03:52	WG1381516
Bromobenzene	U		0.665	2.50	5	11/16/2019 03:52	WG1381516
Bromodichloromethane	U		0.400	2.50	5	11/16/2019 03:52	WG1381516
Bromochloromethane	U		0.725	2.50	5	11/16/2019 03:52	WG1381516
Bromoform	U		0.930	2.50	5	11/16/2019 03:52	WG1381516
Bromomethane	U		39.3	625	250	11/19/2019 17:23	WG1382748
n-Butylbenzene	U		0.715	2.50	5	11/16/2019 03:52	WG1381516
sec-Butylbenzene	U		0.670	2.50	5	11/16/2019 03:52	WG1381516
tert-Butylbenzene	U		0.915	2.50	5	11/16/2019 03:52	WG1381516
Carbon disulfide	U		0.505	2.50	5	11/16/2019 03:52	WG1381516
Carbon tetrachloride	U		0.795	2.50	5	11/16/2019 03:52	WG1381516
Chlorobenzene	U		0.700	2.50	5	11/16/2019 03:52	WG1381516
Chlorodibromomethane	U		0.640	2.50	5	11/16/2019 03:52	WG1381516
Chloroethane	U		0.705	12.5	5	11/16/2019 03:52	WG1381516
Chloroform	U		0.430	2.50	5	11/16/2019 03:52	WG1381516
Chloromethane	U		0.765	6.25	5	11/16/2019 03:52	WG1381516
2-Chlorotoluene	U		0.555	2.50	5	11/16/2019 03:52	WG1381516

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
4-Chlorotoluene	U		0.486	2.50	5	11/16/2019 03:52	WG1381516
1,2-Dibromo-3-Chloropropane	U		1.63	12.5	5	11/16/2019 03:52	WG1381516
1,2-Dibromoethane	U		0.965	2.50	5	11/16/2019 03:52	WG1381516
Dibromomethane	U		0.585	2.50	5	11/16/2019 03:52	WG1381516
1,2-Dichlorobenzene	U		0.505	2.50	5	11/16/2019 03:52	WG1381516
1,3-Dichlorobenzene	U		0.650	2.50	5	11/16/2019 03:52	WG1381516
1,4-Dichlorobenzene	U		0.605	2.50	5	11/16/2019 03:52	WG1381516
Dichlorodifluoromethane	U		0.635	12.5	5	11/16/2019 03:52	WG1381516
1,1-Dichloroethane	U		0.570	2.50	5	11/16/2019 03:52	WG1381516
1,2-Dichloroethane	U		0.540	2.50	5	11/16/2019 03:52	WG1381516
1,1-Dichloroethene	99.2		0.940	2.50	5	11/16/2019 03:52	WG1381516
cis-1,2-Dichloroethene	26300		23.3	125	250	11/19/2019 17:23	WG1382748
trans-1,2-Dichloroethene	237		0.760	2.50	5	11/16/2019 03:52	WG1381516
1,2-Dichloropropane	U		0.950	2.50	5	11/16/2019 03:52	WG1381516
1,1-Dichloropropene	U		0.640	2.50	5	11/16/2019 03:52	WG1381516
1,3-Dichloropropane	U		0.735	5.00	5	11/16/2019 03:52	WG1381516
cis-1,3-Dichloropropene	U		0.488	2.50	5	11/16/2019 03:52	WG1381516
trans-1,3-Dichloropropene	U		1.11	2.50	5	11/16/2019 03:52	WG1381516
trans-1,4-Dichloro-2-butene	U	JO	1.29	25.0	5	11/16/2019 03:52	WG1381516
2,2-Dichloropropane	U		0.465	2.50	5	11/16/2019 03:52	WG1381516
Di-isopropyl ether	U		0.462	2.50	5	11/16/2019 03:52	WG1381516
Ethylbenzene	U		0.790	2.50	5	11/16/2019 03:52	WG1381516
Hexachloro-1,3-butadiene	U		0.785	5.00	5	11/16/2019 03:52	WG1381516
2-Hexanone	U		3.78	25.0	5	11/16/2019 03:52	WG1381516
n-Hexane	U		1.53	25.0	5	11/16/2019 03:52	WG1381516
Iodomethane	U	JO	1.89	50.0	5	11/16/2019 03:52	WG1381516
Isopropylbenzene	U		0.630	2.50	5	11/16/2019 03:52	WG1381516
p-Isopropyltoluene	U		0.690	2.50	5	11/16/2019 03:52	WG1381516
2-Butanone (MEK)	U		6.40	25.0	5	11/16/2019 03:52	WG1381516
Methylene Chloride	U		5.35	12.5	5	11/16/2019 03:52	WG1381516
4-Methyl-2-pentanone (MIBK)	U		4.12	25.0	5	11/16/2019 03:52	WG1381516
Methyl tert-butyl ether	U		0.510	2.50	5	11/16/2019 03:52	WG1381516
Naphthalene	U		0.870	12.5	5	11/16/2019 03:52	WG1381516
n-Propylbenzene	U		0.810	2.50	5	11/16/2019 03:52	WG1381516
Styrene	U		0.585	2.50	5	11/16/2019 03:52	WG1381516
1,1,1,2-Tetrachloroethane	U		0.600	2.50	5	11/16/2019 03:52	WG1381516
1,1,2,2-Tetrachloroethane	U		0.650	2.50	5	11/16/2019 03:52	WG1381516
1,1,2-Trichlorotrifluoroethane	U		0.820	2.50	5	11/16/2019 03:52	WG1381516
Tetrachloroethene	U		49.8	125	250	11/19/2019 17:23	WG1382748
Toluene	U		2.06	2.50	5	11/16/2019 03:52	WG1381516
1,2,3-Trichlorobenzene	U		0.820	2.50	5	11/16/2019 03:52	WG1381516
1,2,4-Trichlorobenzene	U		1.78	2.50	5	11/16/2019 03:52	WG1381516
1,1,1-Trichloroethane	U		0.470	2.50	5	11/16/2019 03:52	WG1381516
1,1,2-Trichloroethane	U		0.930	2.50	5	11/16/2019 03:52	WG1381516
Trichloroethene	1.20	J	0.765	2.50	5	11/16/2019 03:52	WG1381516
Trichlorofluoromethane	U		0.650	12.5	5	11/16/2019 03:52	WG1381516
1,2,3-Trichloropropane	U	JO	61.7	625	250	11/19/2019 17:23	WG1382748
1,2,4-Trimethylbenzene	U		0.615	2.50	5	11/16/2019 03:52	WG1381516
1,2,3-Trimethylbenzene	U		0.369	2.50	5	11/16/2019 03:52	WG1381516
1,3,5-Trimethylbenzene	U		0.620	2.50	5	11/16/2019 03:52	WG1381516
Vinyl acetate	U		3.22	25.0	5	11/16/2019 03:52	WG1381516
Vinyl chloride	9110		29.5	125	250	11/19/2019 17:23	WG1382748
Xylenes, Total	U		1.58	7.50	5	11/16/2019 03:52	WG1381516
(S) Toluene-d8	98.6			80.0-120		11/16/2019 03:52	WG1381516
(S) Toluene-d8	111			80.0-120		11/19/2019 17:23	WG1382748
(S) 4-Bromofluorobenzene	98.9			77.0-126		11/16/2019 03:52	WG1381516

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 4-Bromofluorobenzene	109			77.0-126		11/19/2019 17:23	WG1382748
(S) 1,2-Dichloroethane-d4	107			80.0-125		11/13/2019 23:40	WG1380039
(S) 4-Bromofluorobenzene	100			75.0-120		11/13/2019 23:40	WG1380039
(S) Toluene-d8	98.4			80.0-120		11/13/2019 23:40	WG1380039
(S) 1,2-Dichloroethane-d4	95.8			70.0-130		11/16/2019 03:52	WG1381516
(S) 1,2-Dichloroethane-d4	114			70.0-130		11/19/2019 17:23	WG1382748

Sample Narrative:

L1159108-01 WG1381516, WG1382748: Not all compounds reportable at lower dilution.

L1159108-01 WG1381516, WG1382748: Cannot be re-analyzed at a lower dilution due to high levels of target analytes.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	156000		2710	20000	1	11/16/2019 11:53	WG1381472

Sample Narrative:

L1159108-02 WG1381472: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	10800		51.9	1000	1	11/09/2019 18:20	WG1377890
Nitrate	28.4	J	22.7	100	1	11/09/2019 18:20	WG1377890
Sulfate	14300		77.4	5000	1	11/09/2019 18:20	WG1377890

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1080	B	102	1000	1	11/13/2019 19:15	WG1379453

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	83.6	J	15.0	100	1	11/15/2019 22:35	WG1379539
Manganese	268		0.250	5.00	1	11/15/2019 22:35	WG1379539

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	8.35		0.287	0.678	1	11/14/2019 14:21	WG1380294
Ethane	U		0.296	1.29	1	11/14/2019 14:21	WG1380294
Ethene	U		0.422	1.27	1	11/14/2019 14:21	WG1380294

Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	1.38	B J	1.05	25.0	1	11/16/2019 04:13	WG1381516
Gasoline Range Organics-NWTPH	2310		24.9	100	1	11/13/2019 22:58	WG1380039
Acrylonitrile	U		0.873	5.00	1	11/16/2019 04:13	WG1381516
Benzene	U		0.0896	0.500	1	11/16/2019 04:13	WG1381516
Bromobenzene	U		0.133	0.500	1	11/16/2019 04:13	WG1381516
Bromodichloromethane	U		0.0800	0.500	1	11/16/2019 04:13	WG1381516
Bromochloromethane	U		0.145	0.500	1	11/16/2019 04:13	WG1381516
Bromoform	U		0.186	0.500	1	11/16/2019 04:13	WG1381516
Bromomethane	U		15.7	250	100	11/19/2019 17:44	WG1382748
n-Butylbenzene	U		0.143	0.500	1	11/16/2019 04:13	WG1381516
sec-Butylbenzene	U		0.134	0.500	1	11/16/2019 04:13	WG1381516
tert-Butylbenzene	U		0.183	0.500	1	11/16/2019 04:13	WG1381516
Carbon disulfide	U		0.101	0.500	1	11/16/2019 04:13	WG1381516
Carbon tetrachloride	U		0.159	0.500	1	11/16/2019 04:13	WG1381516
Chlorobenzene	U		0.140	0.500	1	11/16/2019 04:13	WG1381516
Chlorodibromomethane	U		0.128	0.500	1	11/16/2019 04:13	WG1381516
Chloroethane	U		0.141	2.50	1	11/16/2019 04:13	WG1381516
Chloroform	U		0.0860	0.500	1	11/16/2019 04:13	WG1381516
Chloromethane	U		0.153	1.25	1	11/16/2019 04:13	WG1381516
2-Chlorotoluene	U		0.111	0.500	1	11/16/2019 04:13	WG1381516

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
4-Chlorotoluene	U		0.0972	0.500	1	11/16/2019 04:13	WG1381516
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/16/2019 04:13	WG1381516
1,2-Dibromoethane	U		0.193	0.500	1	11/16/2019 04:13	WG1381516
Dibromomethane	U		0.117	0.500	1	11/16/2019 04:13	WG1381516
1,2-Dichlorobenzene	U		0.101	0.500	1	11/16/2019 04:13	WG1381516
1,3-Dichlorobenzene	U		0.130	0.500	1	11/16/2019 04:13	WG1381516
1,4-Dichlorobenzene	U		0.121	0.500	1	11/16/2019 04:13	WG1381516
Dichlorodifluoromethane	U		0.127	2.50	1	11/16/2019 04:13	WG1381516
1,1-Dichloroethane	U		0.114	0.500	1	11/16/2019 04:13	WG1381516
1,2-Dichloroethane	U		0.108	0.500	1	11/16/2019 04:13	WG1381516
1,1-Dichloroethene	16.0		0.188	0.500	1	11/16/2019 04:13	WG1381516
cis-1,2-Dichloroethene	79.0		0.0933	0.500	1	11/16/2019 04:13	WG1381516
trans-1,2-Dichloroethene	2.77		0.152	0.500	1	11/16/2019 04:13	WG1381516
1,2-Dichloropropane	U		0.190	0.500	1	11/16/2019 04:13	WG1381516
1,1-Dichloropropene	U		0.128	0.500	1	11/16/2019 04:13	WG1381516
1,3-Dichloropropane	U		0.147	1.00	1	11/16/2019 04:13	WG1381516
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/16/2019 04:13	WG1381516
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/16/2019 04:13	WG1381516
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	11/16/2019 04:13	WG1381516
2,2-Dichloropropane	U		0.0929	0.500	1	11/16/2019 04:13	WG1381516
Di-isopropyl ether	U		0.0924	0.500	1	11/16/2019 04:13	WG1381516
Ethylbenzene	U		0.158	0.500	1	11/16/2019 04:13	WG1381516
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/16/2019 04:13	WG1381516
2-Hexanone	U		0.757	5.00	1	11/16/2019 04:13	WG1381516
n-Hexane	U		0.305	5.00	1	11/16/2019 04:13	WG1381516
Iodomethane	U	JO	0.377	10.0	1	11/16/2019 04:13	WG1381516
Isopropylbenzene	U		0.126	0.500	1	11/16/2019 04:13	WG1381516
p-Isopropyltoluene	U		0.138	0.500	1	11/16/2019 04:13	WG1381516
2-Butanone (MEK)	U		1.28	5.00	1	11/16/2019 04:13	WG1381516
Methylene Chloride	U		1.07	2.50	1	11/16/2019 04:13	WG1381516
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/16/2019 04:13	WG1381516
Methyl tert-butyl ether	U		0.102	0.500	1	11/16/2019 04:13	WG1381516
Naphthalene	U		0.174	2.50	1	11/16/2019 04:13	WG1381516
n-Propylbenzene	U		0.162	0.500	1	11/16/2019 04:13	WG1381516
Styrene	U		0.117	0.500	1	11/16/2019 04:13	WG1381516
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/16/2019 04:13	WG1381516
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/16/2019 04:13	WG1381516
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/16/2019 04:13	WG1381516
Tetrachloroethene	1590		19.9	50.0	100	11/19/2019 17:44	WG1382748
Toluene	U		0.412	0.500	1	11/16/2019 04:13	WG1381516
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/16/2019 04:13	WG1381516
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/16/2019 04:13	WG1381516
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/16/2019 04:13	WG1381516
1,1,2-Trichloroethane	U		0.186	0.500	1	11/16/2019 04:13	WG1381516
Trichloroethene	733		15.3	50.0	100	11/19/2019 17:44	WG1382748
Trichlorofluoromethane	U		0.130	2.50	1	11/16/2019 04:13	WG1381516
1,2,3-Trichloropropane	U	JO	24.7	250	100	11/19/2019 17:44	WG1382748
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/16/2019 04:13	WG1381516
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/16/2019 04:13	WG1381516
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/16/2019 04:13	WG1381516
Vinyl acetate	U		0.645	5.00	1	11/16/2019 04:13	WG1381516
Vinyl chloride	U		11.8	50.0	100	11/19/2019 17:44	WG1382748
Xylenes, Total	U		0.316	1.50	1	11/16/2019 04:13	WG1381516
(S) Toluene-d8	96.1			80.0-120		11/16/2019 04:13	WG1381516
(S) Toluene-d8	112			80.0-120		11/19/2019 17:44	WG1382748
(S) 4-Bromofluorobenzene	98.6			77.0-126		11/16/2019 04:13	WG1381516

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 4-Bromofluorobenzene	113			77.0-126		11/19/2019 17:44	WG1382748
(S) 1,2-Dichloroethane-d4	100			80.0-125		11/13/2019 22:58	WG1380039
(S) 4-Bromofluorobenzene	104			75.0-120		11/13/2019 22:58	WG1380039
(S) Toluene-d8	94.9			80.0-120		11/13/2019 22:58	WG1380039
(S) 1,2-Dichloroethane-d4	97.5			70.0-130		11/16/2019 04:13	WG1381516
(S) 1,2-Dichloroethane-d4	117			70.0-130		11/19/2019 17:44	WG1382748

Sample Narrative:

L1159108-02 WG1381516, WG1382748: Not all compounds reportable at lower dilution.

L1159108-02 WG1381516, WG1382748: Cannot be re-analyzed at a lower dilution due to high levels of target analytes.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	162000		2710	20000	1	11/16/2019 12:02	WG1381472

Sample Narrative:

L1159108-03 WG1381472: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	13000		51.9	1000	1	11/09/2019 18:59	WG1377890
Nitrate	U		22.7	100	1	11/09/2019 18:59	WG1377890
Sulfate	297	<u>B</u>	77.4	5000	1	11/09/2019 18:59	WG1377890

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	7950		102	1000	1	11/13/2019 20:10	WG1379453

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	2460		15.0	100	1	11/16/2019 10:48	WG1379539
Manganese	119		0.250	5.00	1	11/16/2019 10:48	WG1379539

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	933		0.287	0.678	1	11/14/2019 14:24	WG1380294
Ethane	8.02		0.296	1.29	1	11/14/2019 14:24	WG1380294
Ethene	7.25		0.422	1.27	1	11/14/2019 14:24	WG1380294

Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	15.4	<u>J</u>	1.05	25.0	1	11/16/2019 04:33	WG1381516
Gasoline Range Organics-NWTPH	45.0	<u>J</u>	24.9	100	1	11/13/2019 23:19	WG1380039
Acrylonitrile	U		0.873	5.00	1	11/16/2019 04:33	WG1381516
Benzene	U		0.0896	0.500	1	11/16/2019 04:33	WG1381516
Bromobenzene	U		0.133	0.500	1	11/16/2019 04:33	WG1381516
Bromodichloromethane	U		0.0800	0.500	1	11/16/2019 04:33	WG1381516
Bromochloromethane	U		0.145	0.500	1	11/16/2019 04:33	WG1381516
Bromoform	U		0.186	0.500	1	11/16/2019 04:33	WG1381516
Bromomethane	U		0.157	2.50	1	11/19/2019 18:04	WG1382748
n-Butylbenzene	U		0.143	0.500	1	11/16/2019 04:33	WG1381516
sec-Butylbenzene	U		0.134	0.500	1	11/16/2019 04:33	WG1381516
tert-Butylbenzene	U		0.183	0.500	1	11/16/2019 04:33	WG1381516
Carbon disulfide	0.597		0.101	0.500	1	11/16/2019 04:33	WG1381516
Carbon tetrachloride	U		0.159	0.500	1	11/16/2019 04:33	WG1381516
Chlorobenzene	U		0.140	0.500	1	11/16/2019 04:33	WG1381516
Chlorodibromomethane	U		0.128	0.500	1	11/16/2019 04:33	WG1381516
Chloroethane	U		0.141	2.50	1	11/16/2019 04:33	WG1381516
Chloroform	U		0.0860	0.500	1	11/16/2019 04:33	WG1381516
Chloromethane	U		0.153	1.25	1	11/16/2019 04:33	WG1381516
2-Chlorotoluene	U		0.111	0.500	1	11/16/2019 04:33	WG1381516

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 11/08/19 10:00

L1159108

Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
4-Chlorotoluene	U		0.0972	0.500	1	11/16/2019 04:33	WG1381516
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/16/2019 04:33	WG1381516
1,2-Dibromoethane	U		0.193	0.500	1	11/16/2019 04:33	WG1381516
Dibromomethane	U		0.117	0.500	1	11/16/2019 04:33	WG1381516
1,2-Dichlorobenzene	U		0.101	0.500	1	11/16/2019 04:33	WG1381516
1,3-Dichlorobenzene	U		0.130	0.500	1	11/16/2019 04:33	WG1381516
1,4-Dichlorobenzene	U		0.121	0.500	1	11/16/2019 04:33	WG1381516
Dichlorodifluoromethane	U		0.127	2.50	1	11/16/2019 04:33	WG1381516
1,1-Dichloroethane	U		0.114	0.500	1	11/16/2019 04:33	WG1381516
1,2-Dichloroethane	U		0.108	0.500	1	11/16/2019 04:33	WG1381516
1,1-Dichloroethene	U		0.188	0.500	1	11/16/2019 04:33	WG1381516
cis-1,2-Dichloroethene	59.9		0.0933	0.500	1	11/16/2019 04:33	WG1381516
trans-1,2-Dichloroethene	0.167	U	0.152	0.500	1	11/16/2019 04:33	WG1381516
1,2-Dichloropropane	U		0.190	0.500	1	11/16/2019 04:33	WG1381516
1,1-Dichloropropene	U		0.128	0.500	1	11/16/2019 04:33	WG1381516
1,3-Dichloropropane	U		0.147	1.00	1	11/16/2019 04:33	WG1381516
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/16/2019 04:33	WG1381516
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/16/2019 04:33	WG1381516
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	11/16/2019 04:33	WG1381516
2,2-Dichloropropane	U		0.0929	0.500	1	11/16/2019 04:33	WG1381516
Di-isopropyl ether	U		0.0924	0.500	1	11/16/2019 04:33	WG1381516
Ethylbenzene	U		0.158	0.500	1	11/16/2019 04:33	WG1381516
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/16/2019 04:33	WG1381516
2-Hexanone	U		0.757	5.00	1	11/16/2019 04:33	WG1381516
n-Hexane	U		0.305	5.00	1	11/16/2019 04:33	WG1381516
Iodomethane	U	JO	0.377	10.0	1	11/16/2019 04:33	WG1381516
Isopropylbenzene	U		0.126	0.500	1	11/16/2019 04:33	WG1381516
p-Isopropyltoluene	U		0.138	0.500	1	11/16/2019 04:33	WG1381516
2-Butanone (MEK)	U		1.28	5.00	1	11/16/2019 04:33	WG1381516
Methylene Chloride	U		1.07	2.50	1	11/16/2019 04:33	WG1381516
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/16/2019 04:33	WG1381516
Methyl tert-butyl ether	U		0.102	0.500	1	11/16/2019 04:33	WG1381516
Naphthalene	U		0.174	2.50	1	11/16/2019 04:33	WG1381516
n-Propylbenzene	U		0.162	0.500	1	11/16/2019 04:33	WG1381516
Styrene	U		0.117	0.500	1	11/16/2019 04:33	WG1381516
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/16/2019 04:33	WG1381516
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/16/2019 04:33	WG1381516
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/16/2019 04:33	WG1381516
Tetrachloroethene	U		0.199	0.500	1	11/19/2019 18:04	WG1382748
Toluene	0.459	U	0.412	0.500	1	11/16/2019 04:33	WG1381516
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/16/2019 04:33	WG1381516
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/16/2019 04:33	WG1381516
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/16/2019 04:33	WG1381516
1,1,2-Trichloroethane	U		0.186	0.500	1	11/16/2019 04:33	WG1381516
Trichloroethene	0.193	U	0.153	0.500	1	11/19/2019 18:04	WG1382748
Trichlorofluoromethane	U		0.130	2.50	1	11/16/2019 04:33	WG1381516
1,2,3-Trichloropropane	U	JO	0.247	2.50	1	11/19/2019 18:04	WG1382748
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/16/2019 04:33	WG1381516
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/16/2019 04:33	WG1381516
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/16/2019 04:33	WG1381516
Vinyl acetate	U		0.645	5.00	1	11/16/2019 04:33	WG1381516
Vinyl chloride	4.29		0.118	0.500	1	11/16/2019 04:33	WG1381516
Xylenes, Total	U		0.316	1.50	1	11/16/2019 04:33	WG1381516
(S) Toluene-d8	96.6			80.0-120		11/16/2019 04:33	WG1381516
(S) Toluene-d8	111			80.0-120		11/19/2019 18:04	WG1382748
(S) 4-Bromofluorobenzene	97.4			77.0-126		11/16/2019 04:33	WG1381516

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 4-Bromofluorobenzene	108			77.0-126		11/19/2019 18:04	WG1382748
(S) 1,2-Dichloroethane-d4	105			80.0-125		11/13/2019 23:19	WG1380039
(S) 4-Bromofluorobenzene	102			75.0-120		11/13/2019 23:19	WG1380039
(S) Toluene-d8	97.6			80.0-120		11/13/2019 23:19	WG1380039
(S) 1,2-Dichloroethane-d4	94.9			70.0-130		11/16/2019 04:33	WG1381516
(S) 1,2-Dichloroethane-d4	116			70.0-130		11/19/2019 18:04	WG1382748

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	605000		2710	20000	1	11/16/2019 12:10	WG1381472

Sample Narrative:

L1159108-04 WG1381472: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	161000		260	5000	5	11/09/2019 19:25	WG1377890
Nitrate	U		22.7	100	1	11/09/2019 19:12	WG1377890
Sulfate	392	<u>B</u>	77.4	5000	1	11/09/2019 19:12	WG1377890

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	26500		102	1000	1	11/13/2019 20:27	WG1379453

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	3390		15.0	100	1	11/16/2019 10:52	WG1379539
Manganese	1020		0.250	5.00	1	11/16/2019 10:52	WG1379539

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	14300		2.87	6.78	10	11/15/2019 11:16	WG1380940
Ethane	18.5		0.296	1.29	1	11/14/2019 14:32	WG1380294
Ethene	2870		0.422	1.27	1	11/14/2019 14:32	WG1380294

Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	18.6	<u>J</u>	1.05	25.0	1	11/16/2019 04:53	WG1381516
Gasoline Range Organics-NWTPH	23900		623	2500	25	11/14/2019 00:00	WG1380039
Acrylonitrile	U		0.873	5.00	1	11/16/2019 04:53	WG1381516
Benzene	0.486	<u>J</u>	0.0896	0.500	1	11/16/2019 04:53	WG1381516
Bromobenzene	U		0.133	0.500	1	11/16/2019 04:53	WG1381516
Bromodichloromethane	U		0.0800	0.500	1	11/16/2019 04:53	WG1381516
Bromochloromethane	U		0.145	0.500	1	11/16/2019 04:53	WG1381516
Bromoform	U		0.186	0.500	1	11/16/2019 04:53	WG1381516
Bromomethane	U		78.5	1250	500	11/19/2019 18:24	WG1382748
n-Butylbenzene	U		0.143	0.500	1	11/16/2019 04:53	WG1381516
sec-Butylbenzene	U		0.134	0.500	1	11/16/2019 04:53	WG1381516
tert-Butylbenzene	U		0.183	0.500	1	11/16/2019 04:53	WG1381516
Carbon disulfide	3.91		0.101	0.500	1	11/16/2019 04:53	WG1381516
Carbon tetrachloride	U		0.159	0.500	1	11/16/2019 04:53	WG1381516
Chlorobenzene	U		0.140	0.500	1	11/16/2019 04:53	WG1381516
Chlorodibromomethane	U		0.128	0.500	1	11/16/2019 04:53	WG1381516
Chloroethane	U		0.141	2.50	1	11/16/2019 04:53	WG1381516
Chloroform	U		0.0860	0.500	1	11/16/2019 04:53	WG1381516
Chloromethane	U		0.153	1.25	1	11/16/2019 04:53	WG1381516
2-Chlorotoluene	U		0.111	0.500	1	11/16/2019 04:53	WG1381516

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 11/08/19 11:10

L1159108

Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
4-Chlorotoluene	U		0.0972	0.500	1	11/16/2019 04:53	WG1381516
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/16/2019 04:53	WG1381516
1,2-Dibromoethane	U		0.193	0.500	1	11/16/2019 04:53	WG1381516
Dibromomethane	U		0.117	0.500	1	11/16/2019 04:53	WG1381516
1,2-Dichlorobenzene	U		0.101	0.500	1	11/16/2019 04:53	WG1381516
1,3-Dichlorobenzene	U		0.130	0.500	1	11/16/2019 04:53	WG1381516
1,4-Dichlorobenzene	U		0.121	0.500	1	11/16/2019 04:53	WG1381516
Dichlorodifluoromethane	U		0.127	2.50	1	11/16/2019 04:53	WG1381516
1,1-Dichloroethane	U		0.114	0.500	1	11/16/2019 04:53	WG1381516
1,2-Dichloroethane	U		0.108	0.500	1	11/16/2019 04:53	WG1381516
1,1-Dichloroethene	116		0.188	0.500	1	11/16/2019 04:53	WG1381516
cis-1,2-Dichloroethene	30800		46.7	250	500	11/19/2019 18:24	WG1382748
trans-1,2-Dichloroethene	200	U	76.0	250	500	11/19/2019 18:24	WG1382748
1,2-Dichloropropane	U		0.190	0.500	1	11/16/2019 04:53	WG1381516
1,1-Dichloropropene	U		0.128	0.500	1	11/16/2019 04:53	WG1381516
1,3-Dichloropropane	U		0.147	1.00	1	11/16/2019 04:53	WG1381516
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/16/2019 04:53	WG1381516
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/16/2019 04:53	WG1381516
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	11/16/2019 04:53	WG1381516
2,2-Dichloropropane	U		0.0929	0.500	1	11/16/2019 04:53	WG1381516
Di-isopropyl ether	U		0.0924	0.500	1	11/16/2019 04:53	WG1381516
Ethylbenzene	U		0.158	0.500	1	11/16/2019 04:53	WG1381516
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/16/2019 04:53	WG1381516
2-Hexanone	U		0.757	5.00	1	11/16/2019 04:53	WG1381516
n-Hexane	U		0.305	5.00	1	11/16/2019 04:53	WG1381516
Iodomethane	U	JO	0.377	10.0	1	11/16/2019 04:53	WG1381516
Isopropylbenzene	U		0.126	0.500	1	11/16/2019 04:53	WG1381516
p-Isopropyltoluene	U		0.138	0.500	1	11/16/2019 04:53	WG1381516
2-Butanone (MEK)	U		1.28	5.00	1	11/16/2019 04:53	WG1381516
Methylene Chloride	U		1.07	2.50	1	11/16/2019 04:53	WG1381516
4-Methyl-2-pentanone (MIBK)	1.11	U	0.823	5.00	1	11/16/2019 04:53	WG1381516
Methyl tert-butyl ether	U		0.102	0.500	1	11/16/2019 04:53	WG1381516
Naphthalene	U		0.174	2.50	1	11/16/2019 04:53	WG1381516
n-Propylbenzene	U		0.162	0.500	1	11/16/2019 04:53	WG1381516
Styrene	U		0.117	0.500	1	11/16/2019 04:53	WG1381516
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/16/2019 04:53	WG1381516
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/16/2019 04:53	WG1381516
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/16/2019 04:53	WG1381516
Tetrachloroethene	U		99.5	250	500	11/19/2019 18:24	WG1382748
Toluene	0.455	U	0.412	0.500	1	11/16/2019 04:53	WG1381516
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/16/2019 04:53	WG1381516
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/16/2019 04:53	WG1381516
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/16/2019 04:53	WG1381516
1,1,2-Trichloroethane	U		0.186	0.500	1	11/16/2019 04:53	WG1381516
Trichloroethene	U		76.5	250	500	11/19/2019 18:24	WG1382748
Trichlorofluoromethane	U		0.130	2.50	1	11/16/2019 04:53	WG1381516
1,2,3-Trichloropropane	U	JO	123	1250	500	11/19/2019 18:24	WG1382748
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/16/2019 04:53	WG1381516
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/16/2019 04:53	WG1381516
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/16/2019 04:53	WG1381516
Vinyl acetate	U		0.645	5.00	1	11/16/2019 04:53	WG1381516
Vinyl chloride	10700		59.0	250	500	11/19/2019 18:24	WG1382748
Xylenes, Total	U		0.316	1.50	1	11/16/2019 04:53	WG1381516
(S) Toluene-d8	98.1			80.0-120		11/16/2019 04:53	WG1381516
(S) Toluene-d8	110			80.0-120		11/19/2019 18:24	WG1382748
(S) 4-Bromofluorobenzene	97.9			77.0-126		11/16/2019 04:53	WG1381516

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 4-Bromofluorobenzene	109			77.0-126		11/19/2019 18:24	WG1382748
(S) 1,2-Dichloroethane-d4	107			80.0-125		11/14/2019 00:00	WG1380039
(S) 4-Bromofluorobenzene	102			75.0-120		11/14/2019 00:00	WG1380039
(S) Toluene-d8	97.4			80.0-120		11/14/2019 00:00	WG1380039
(S) 1,2-Dichloroethane-d4	97.1			70.0-130		11/16/2019 04:53	WG1381516
(S) 1,2-Dichloroethane-d4	117			70.0-130		11/19/2019 18:24	WG1382748

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Sample Narrative:

L1159108-04 WG1381516, WG1382748: Not all compounds reportable at lower dilution.

L1159108-04 WG1381516, WG1382748: Cannot be re-analyzed at a lower dilution due to high levels of target analytes.



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	1610000		2710	20000	1	11/16/2019 12:17	WG1381472

Sample Narrative:

L1159108-05 WG1381472: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	146000		260	5000	5	11/09/2019 19:51	WG1377890
Nitrate	38.9	J	22.7	100	1	11/09/2019 19:38	WG1377890
Sulfate	3440	J	77.4	5000	1	11/09/2019 19:38	WG1377890

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	198000		510	5000	5	11/13/2019 20:41	WG1379453

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	86800		15.0	100	1	11/16/2019 10:56	WG1379539
Manganese	7640		0.250	5.00	1	11/16/2019 10:56	WG1379539

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	12600		2.87	6.78	10	11/15/2019 11:19	WG1380940
Ethane	22.2		0.296	1.29	1	11/14/2019 14:38	WG1380294
Ethene	4150		0.422	1.27	1	11/14/2019 14:38	WG1380294

Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	56.6		1.05	25.0	1	11/16/2019 05:14	WG1381516
Gasoline Range Organics-NWTPH	14100		249	1000	10	11/14/2019 00:21	WG1380039
Acrylonitrile	U		0.873	5.00	1	11/16/2019 05:14	WG1381516
Benzene	U		0.0896	0.500	1	11/16/2019 05:14	WG1381516
Bromobenzene	U		0.133	0.500	1	11/16/2019 05:14	WG1381516
Bromodichloromethane	U		0.0800	0.500	1	11/16/2019 05:14	WG1381516
Bromochloromethane	U		0.145	0.500	1	11/16/2019 05:14	WG1381516
Bromoform	U		0.186	0.500	1	11/16/2019 05:14	WG1381516
Bromomethane	U		78.5	1250	500	11/19/2019 18:45	WG1382748
n-Butylbenzene	U		0.143	0.500	1	11/16/2019 05:14	WG1381516
sec-Butylbenzene	U		0.134	0.500	1	11/16/2019 05:14	WG1381516
tert-Butylbenzene	U		0.183	0.500	1	11/16/2019 05:14	WG1381516
Carbon disulfide	2.06		0.101	0.500	1	11/16/2019 05:14	WG1381516
Carbon tetrachloride	U		0.159	0.500	1	11/16/2019 05:14	WG1381516
Chlorobenzene	U		0.140	0.500	1	11/16/2019 05:14	WG1381516
Chlorodibromomethane	U		0.128	0.500	1	11/16/2019 05:14	WG1381516
Chloroethane	U		0.141	2.50	1	11/16/2019 05:14	WG1381516
Chloroform	U		0.0860	0.500	1	11/16/2019 05:14	WG1381516
Chloromethane	U		0.153	1.25	1	11/16/2019 05:14	WG1381516
2-Chlorotoluene	U		0.111	0.500	1	11/16/2019 05:14	WG1381516

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
4-Chlorotoluene	U		0.0972	0.500	1	11/16/2019 05:14	WG1381516
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/16/2019 05:14	WG1381516
1,2-Dibromoethane	U		0.193	0.500	1	11/16/2019 05:14	WG1381516
Dibromomethane	U		0.117	0.500	1	11/16/2019 05:14	WG1381516
1,2-Dichlorobenzene	U		0.101	0.500	1	11/16/2019 05:14	WG1381516
1,3-Dichlorobenzene	U		0.130	0.500	1	11/16/2019 05:14	WG1381516
1,4-Dichlorobenzene	U		0.121	0.500	1	11/16/2019 05:14	WG1381516
Dichlorodifluoromethane	U		0.127	2.50	1	11/16/2019 05:14	WG1381516
1,1-Dichloroethane	U		0.114	0.500	1	11/16/2019 05:14	WG1381516
1,2-Dichloroethane	U		0.108	0.500	1	11/16/2019 05:14	WG1381516
1,1-Dichloroethene	15.0		0.188	0.500	1	11/16/2019 05:14	WG1381516
cis-1,2-Dichloroethene	19200		46.7	250	500	11/19/2019 18:45	WG1382748
trans-1,2-Dichloroethene	89.4	U	76.0	250	500	11/19/2019 18:45	WG1382748
1,2-Dichloropropane	U		0.190	0.500	1	11/16/2019 05:14	WG1381516
1,1-Dichloropropene	U		0.128	0.500	1	11/16/2019 05:14	WG1381516
1,3-Dichloropropane	U		0.147	1.00	1	11/16/2019 05:14	WG1381516
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/16/2019 05:14	WG1381516
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/16/2019 05:14	WG1381516
trans-1,4-Dichloro-2-butene	U	LO	0.257	5.00	1	11/16/2019 05:14	WG1381516
2,2-Dichloropropane	U		0.0929	0.500	1	11/16/2019 05:14	WG1381516
Di-isopropyl ether	U		0.0924	0.500	1	11/16/2019 05:14	WG1381516
Ethylbenzene	0.344	U	0.158	0.500	1	11/16/2019 05:14	WG1381516
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/16/2019 05:14	WG1381516
2-Hexanone	1.26	U	0.757	5.00	1	11/16/2019 05:14	WG1381516
n-Hexane	U		0.305	5.00	1	11/16/2019 05:14	WG1381516
Iodomethane	U	LO	0.377	10.0	1	11/16/2019 05:14	WG1381516
Isopropylbenzene	U		0.126	0.500	1	11/16/2019 05:14	WG1381516
p-Isopropyltoluene	U		0.138	0.500	1	11/16/2019 05:14	WG1381516
2-Butanone (MEK)	88.9		1.28	5.00	1	11/16/2019 05:14	WG1381516
Methylene Chloride	U		1.07	2.50	1	11/16/2019 05:14	WG1381516
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/16/2019 05:14	WG1381516
Methyl tert-butyl ether	U		0.102	0.500	1	11/16/2019 05:14	WG1381516
Naphthalene	0.215	U	0.174	2.50	1	11/16/2019 05:14	WG1381516
n-Propylbenzene	U		0.162	0.500	1	11/16/2019 05:14	WG1381516
Styrene	U		0.117	0.500	1	11/16/2019 05:14	WG1381516
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/16/2019 05:14	WG1381516
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/16/2019 05:14	WG1381516
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/16/2019 05:14	WG1381516
Tetrachloroethene	1570		99.5	250	500	11/19/2019 18:45	WG1382748
Toluene	0.519		0.412	0.500	1	11/16/2019 05:14	WG1381516
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/16/2019 05:14	WG1381516
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/16/2019 05:14	WG1381516
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/16/2019 05:14	WG1381516
1,1,2-Trichloroethane	U		0.186	0.500	1	11/16/2019 05:14	WG1381516
Trichloroethene	794		76.5	250	500	11/19/2019 18:45	WG1382748
Trichlorofluoromethane	U		0.130	2.50	1	11/16/2019 05:14	WG1381516
1,2,3-Trichloropropane	U	LO	123	1250	500	11/19/2019 18:45	WG1382748
1,2,4-Trimethylbenzene	0.326	U	0.123	0.500	1	11/16/2019 05:14	WG1381516
1,2,3-Trimethylbenzene	0.506		0.0739	0.500	1	11/16/2019 05:14	WG1381516
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/16/2019 05:14	WG1381516
Vinyl acetate	U		0.645	5.00	1	11/16/2019 05:14	WG1381516
Vinyl chloride	1560		59.0	250	500	11/19/2019 18:45	WG1382748
Xylenes, Total	0.573	U	0.316	1.50	1	11/16/2019 05:14	WG1381516
(S) Toluene-d8	97.8			80.0-120		11/16/2019 05:14	WG1381516
(S) Toluene-d8	109			80.0-120		11/19/2019 18:45	WG1382748
(S) 4-Bromofluorobenzene	96.6			77.0-126		11/16/2019 05:14	WG1381516

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 4-Bromofluorobenzene	108			77.0-126		11/19/2019 18:45	WG1382748
(S) 1,2-Dichloroethane-d4	105			80.0-125		11/14/2019 00:21	WG1380039
(S) 4-Bromofluorobenzene	101			75.0-120		11/14/2019 00:21	WG1380039
(S) Toluene-d8	96.5			80.0-120		11/14/2019 00:21	WG1380039
(S) 1,2-Dichloroethane-d4	95.8			70.0-130		11/16/2019 05:14	WG1381516
(S) 1,2-Dichloroethane-d4	116			70.0-130		11/19/2019 18:45	WG1382748

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Sample Narrative:

L1159108-05 WG1381516, WG1382748: Not all compounds reportable at lower dilution.

L1159108-05 WG1381516, WG1382748: Cannot be re-analyzed at a lower dilution due to high levels of target analytes.



Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
	ug/l		ug/l	ug/l			
Acetone	U		1.05	25.0	1	11/15/2019 23:28	WG1381516
Gasoline Range Organics-NWTPH	U		24.9	100	1	11/16/2019 19:51	WG1381810
Acrylonitrile	U		0.873	5.00	1	11/15/2019 23:28	WG1381516
Benzene	U		0.0896	0.500	1	11/15/2019 23:28	WG1381516
Bromobenzene	U		0.133	0.500	1	11/15/2019 23:28	WG1381516
Bromodichloromethane	U		0.0800	0.500	1	11/15/2019 23:28	WG1381516
Bromochloromethane	U		0.145	0.500	1	11/15/2019 23:28	WG1381516
Bromoform	U		0.186	0.500	1	11/15/2019 23:28	WG1381516
Bromomethane	U		0.157	2.50	1	11/19/2019 12:18	WG1382748
n-Butylbenzene	U		0.143	0.500	1	11/15/2019 23:28	WG1381516
sec-Butylbenzene	U		0.134	0.500	1	11/15/2019 23:28	WG1381516
tert-Butylbenzene	U		0.183	0.500	1	11/15/2019 23:28	WG1381516
Carbon disulfide	U		0.101	0.500	1	11/15/2019 23:28	WG1381516
Carbon tetrachloride	U		0.159	0.500	1	11/15/2019 23:28	WG1381516
Chlorobenzene	U		0.140	0.500	1	11/15/2019 23:28	WG1381516
Chlorodibromomethane	U		0.128	0.500	1	11/15/2019 23:28	WG1381516
Chloroethane	U		0.141	2.50	1	11/15/2019 23:28	WG1381516
Chloroform	U		0.0860	0.500	1	11/15/2019 23:28	WG1381516
Chloromethane	U		0.153	1.25	1	11/15/2019 23:28	WG1381516
2-Chlorotoluene	U		0.111	0.500	1	11/15/2019 23:28	WG1381516
4-Chlorotoluene	U		0.0972	0.500	1	11/15/2019 23:28	WG1381516
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/15/2019 23:28	WG1381516
1,2-Dibromoethane	U		0.193	0.500	1	11/15/2019 23:28	WG1381516
Dibromomethane	U		0.117	0.500	1	11/15/2019 23:28	WG1381516
1,2-Dichlorobenzene	U		0.101	0.500	1	11/15/2019 23:28	WG1381516
1,3-Dichlorobenzene	U		0.130	0.500	1	11/15/2019 23:28	WG1381516
1,4-Dichlorobenzene	U		0.121	0.500	1	11/15/2019 23:28	WG1381516
Dichlorodifluoromethane	U		0.127	2.50	1	11/15/2019 23:28	WG1381516
1,1-Dichloroethane	U		0.114	0.500	1	11/15/2019 23:28	WG1381516
1,2-Dichloroethane	U		0.108	0.500	1	11/15/2019 23:28	WG1381516
1,1-Dichloroethene	U		0.188	0.500	1	11/15/2019 23:28	WG1381516
cis-1,2-Dichloroethene	U		0.0933	0.500	1	11/15/2019 23:28	WG1381516
trans-1,2-Dichloroethene	U		0.152	0.500	1	11/15/2019 23:28	WG1381516
1,2-Dichloropropane	U		0.190	0.500	1	11/15/2019 23:28	WG1381516
1,1-Dichloropropene	U		0.128	0.500	1	11/15/2019 23:28	WG1381516
1,3-Dichloropropane	U		0.147	1.00	1	11/15/2019 23:28	WG1381516
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/15/2019 23:28	WG1381516
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/15/2019 23:28	WG1381516
trans-1,4-Dichloro-2-butene	U	<u>JO</u>	0.257	5.00	1	11/15/2019 23:28	WG1381516
2,2-Dichloropropane	U		0.0929	0.500	1	11/15/2019 23:28	WG1381516
Di-isopropyl ether	U		0.0924	0.500	1	11/15/2019 23:28	WG1381516
Ethylbenzene	U		0.158	0.500	1	11/15/2019 23:28	WG1381516
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/15/2019 23:28	WG1381516
2-Hexanone	U		0.757	5.00	1	11/15/2019 23:28	WG1381516
n-Hexane	U		0.305	5.00	1	11/15/2019 23:28	WG1381516
Iodomethane	U	<u>JO</u>	0.377	10.0	1	11/15/2019 23:28	WG1381516
Isopropylbenzene	U		0.126	0.500	1	11/15/2019 23:28	WG1381516
p-Isopropyltoluene	U		0.138	0.500	1	11/15/2019 23:28	WG1381516
2-Butanone (MEK)	U		1.28	5.00	1	11/15/2019 23:28	WG1381516
Methylene Chloride	U		1.07	2.50	1	11/15/2019 23:28	WG1381516
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/15/2019 23:28	WG1381516
Methyl tert-butyl ether	U		0.102	0.500	1	11/15/2019 23:28	WG1381516
Naphthalene	U		0.174	2.50	1	11/15/2019 23:28	WG1381516
n-Propylbenzene	U		0.162	0.500	1	11/15/2019 23:28	WG1381516
Styrene	U		0.117	0.500	1	11/15/2019 23:28	WG1381516

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 11/08/19 15:30

L1159108

Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/15/2019 23:28	WG1381516
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/15/2019 23:28	WG1381516
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/15/2019 23:28	WG1381516
Tetrachloroethene	U		0.199	0.500	1	11/19/2019 12:18	WG1382748
Toluene	U		0.412	0.500	1	11/15/2019 23:28	WG1381516
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/15/2019 23:28	WG1381516
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/15/2019 23:28	WG1381516
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/15/2019 23:28	WG1381516
1,1,2-Trichloroethane	U		0.186	0.500	1	11/15/2019 23:28	WG1381516
Trichloroethene	U		0.153	0.500	1	11/15/2019 23:28	WG1381516
Trichlorofluoromethane	U		0.130	2.50	1	11/15/2019 23:28	WG1381516
1,2,3-Trichloropropane	U	<u>JO</u>	0.247	2.50	1	11/19/2019 12:18	WG1382748
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/15/2019 23:28	WG1381516
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/15/2019 23:28	WG1381516
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/15/2019 23:28	WG1381516
Vinyl acetate	U		0.645	5.00	1	11/15/2019 23:28	WG1381516
Vinyl chloride	U		0.118	0.500	1	11/15/2019 23:28	WG1381516
Xylenes, Total	U		0.316	1.50	1	11/15/2019 23:28	WG1381516
(S) Toluene-d8	98.6			80.0-120		11/15/2019 23:28	WG1381516
(S) Toluene-d8	111			80.0-120		11/19/2019 12:18	WG1382748
(S) 4-Bromofluorobenzene	94.9			77.0-126		11/15/2019 23:28	WG1381516
(S) 4-Bromofluorobenzene	112			77.0-126		11/19/2019 12:18	WG1382748
(S) 1,2-Dichloroethane-d4	106			80.0-125		11/16/2019 19:51	WG1381810
(S) 4-Bromofluorobenzene	98.8			75.0-120		11/16/2019 19:51	WG1381810
(S) Toluene-d8	96.6			80.0-120		11/16/2019 19:51	WG1381810
(S) 1,2-Dichloroethane-d4	101			70.0-130		11/15/2019 23:28	WG1381516
(S) 1,2-Dichloroethane-d4	113			70.0-130		11/19/2019 12:18	WG1382748

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3472708-1 11/16/19 09:32

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	3170	↓	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1158500-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1158500-01 11/16/19 09:50 • (DUP) R3472708-2 11/16/19 09:59

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	41400	41600	1	0.455		20

Sample Narrative:

OS: Endpoint pH 4.5 HEADSPACE

DUP: Endpoint pH 4.5

L1159096-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1159096-01 11/16/19 11:31 • (DUP) R3472708-4 11/16/19 11:39

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	63100	61400	1	2.65		20

Sample Narrative:

OS: Endpoint pH 4.5 HEADSPACE

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3472708-3 11/16/19 11:00

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	103000	103	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3470340-1 11/09/19 09:24

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Chloride	136	↓	51.9	1000
Nitrate	U		22.7	100
Sulfate	209	↓	77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1159063-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1159063-01 11/09/19 11:51 • (DUP) R3470340-3 11/09/19 12:04

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	228000	229000	1	0.379	E	15
Nitrate	7250	7240	1	0.0952		15
Sulfate	66900	67100	1	0.388		15

L1159075-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1159075-05 11/09/19 17:01 • (DUP) R3470340-6 11/09/19 17:14

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	50000	49400	1	1.18		15
Nitrate	ND	29.5	1	0.000		15
Sulfate	11800	11600	1	1.28		15

Laboratory Control Sample (LCS)

(LCS) R3470340-2 11/09/19 09:37

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Chloride	40000	39000	97.5	80.0-120	
Nitrate	8000	8020	100	80.0-120	
Sulfate	40000	38800	97.0	80.0-120	



L1159063-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1159063-02 11/09/19 12:17 • (MS) R3470340-4 11/09/19 12:30 • (MSD) R3470340-5 11/09/19 12:43

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	295000	331000	329000	70.6	68.1	1	80.0-120	<u>EV</u>	<u>EV</u>	0.373	15
Nitrate	5000	ND	4970	4930	98.7	97.8	1	80.0-120			0.839	15
Sulfate	50000	ND	50800	50300	97.8	96.9	1	80.0-120			0.902	15

L1159075-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L1159075-06 11/09/19 17:27 • (MS) R3470340-7 11/09/19 17:40

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	ND	50300	100	1	80.0-120	
Nitrate	5000	ND	5120	102	1	80.0-120	
Sulfate	50000	ND	49900	99.8	1	80.0-120	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3471936-1 11/13/19 12:22

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
TOC (Total Organic Carbon)	218	↓	102	1000

¹ Cp

² Tc

³ Ss

L1159071-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1159071-02 11/13/19 17:28 • (DUP) R3471936-6 11/13/19 17:43

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
TOC (Total Organic Carbon)	3090	3070	1	0.779		20

⁴ Cn

⁵ Sr

Laboratory Control Sample (LCS)

(LCS) R3471936-2 11/13/19 12:53

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
TOC (Total Organic Carbon)	75000	74000	98.6	85.0-115	

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3472578-1 11/15/19 22:06

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Iron	U		15.0	100
Manganese	0.466	J	0.250	5.00

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3472578-2 11/15/19 22:09 • (LCSD) R3472578-3 11/15/19 22:13

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Iron	5000	5190	5080	104	102	80.0-120			1.99	20
Manganese	50.0	52.3	50.4	105	101	80.0-120			3.71	20

5 Sr

6 Qc

L1159617-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1159617-01 11/15/19 22:17 • (MS) R3472578-5 11/15/19 22:24 • (MSD) R3472578-6 11/15/19 22:28

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Iron	5000	786	5670	5830	97.7	101	1	75.0-125			2.73	20
Manganese	50.0	596	623	633	53.3	73.1	1	75.0-125	V	V	1.58	20

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3472106-1 11/14/19 13:12

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1159096-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1159096-01 11/14/19 13:18 • (DUP) R3472106-2 11/14/19 14:10

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	53.2	53.0	1	0.377		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

L1159108-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1159108-02 11/14/19 14:21 • (DUP) R3472106-3 11/14/19 15:49

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	8.35	9.06	1	8.16		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3472106-4 11/14/19 16:52 • (LCSD) R3472106-5 11/14/19 16:56

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	67.4	67.5	99.4	99.6	85.0-115			0.148	20
Ethane	129	126	126	97.7	97.7	85.0-115			0.000	20
Ethene	127	120	121	94.5	95.3	85.0-115			0.830	20



Method Blank (MB)

(MB) R3472363-1 11/15/19 09:56

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Methane	U		0.287	0.678

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1159574-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1159574-01 11/15/19 10:32 • (DUP) R3472363-2 11/15/19 11:07

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	ND	0.000	1	0.000		20

L1160596-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1160596-01 11/15/19 11:10 • (DUP) R3472363-3 11/15/19 11:47

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	22.1	19.3	1	13.5		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3472363-4 11/15/19 11:50 • (LCSD) R3472363-5 11/15/19 11:53

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Methane	67.8	65.3	66.5	96.3	98.1	85.0-115			1.82	20



Method Blank (MB)

(MB) R3473319-3 11/15/19 22:11

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	1.05	U	1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500
Ethylbenzene	U		0.158	0.500

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3473319-3 11/15/19 22:11

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
Toluene	U		0.412	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,2,4-Trimethylbenzene	U		0.123	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	97.2			80.0-120
(S) 4-Bromofluorobenzene	101			77.0-126
(S) 1,2-Dichloroethane-d4	99.4			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3473319-1 11/15/19 21:11 • (LCSD) R3473319-2 11/15/19 21:31

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Acetone	25.0	22.3	21.4	89.2	85.6	19.0-160			4.12	27
Acrylonitrile	25.0	22.3	22.6	89.2	90.4	55.0-149			1.34	20
Benzene	5.00	4.33	4.40	86.6	88.0	70.0-123			1.60	20
Bromobenzene	5.00	4.62	4.72	92.4	94.4	73.0-121			2.14	20
Bromodichloromethane	5.00	4.34	4.48	86.8	89.6	75.0-120			3.17	20
Bromochloromethane	5.00	4.41	5.06	88.2	101	76.0-122			13.7	20
Bromoform	5.00	4.06	3.92	81.2	78.4	68.0-132			3.51	20
n-Butylbenzene	5.00	4.72	5.05	94.4	101	73.0-125			6.76	20
sec-Butylbenzene	5.00	4.60	4.78	92.0	95.6	75.0-125			3.84	20
tert-Butylbenzene	5.00	4.50	4.36	90.0	87.2	76.0-124			3.16	20
Carbon disulfide	5.00	4.68	4.66	93.6	93.2	61.0-128			0.428	20
Carbon tetrachloride	5.00	4.82	4.72	96.4	94.4	68.0-126			2.10	20
Chlorobenzene	5.00	4.83	4.70	96.6	94.0	80.0-121			2.73	20
Chlorodibromomethane	5.00	4.39	4.37	87.8	87.4	77.0-125			0.457	20
Chloroethane	5.00	5.10	4.69	102	93.8	47.0-150			8.38	20
Chloroform	5.00	4.35	4.39	87.0	87.8	73.0-120			0.915	20
Chloromethane	5.00	4.07	4.25	81.4	85.0	41.0-142			4.33	20
2-Chlorotoluene	5.00	4.72	4.73	94.4	94.6	76.0-123			0.212	20
4-Chlorotoluene	5.00	4.67	4.75	93.4	95.0	75.0-122			1.70	20
1,2-Dibromo-3-Chloropropane	5.00	4.04	3.71	80.8	74.2	58.0-134			8.52	20
1,2-Dibromoethane	5.00	4.64	4.69	92.8	93.8	80.0-122			1.07	20
Dibromomethane	5.00	4.74	4.86	94.8	97.2	80.0-120			2.50	20
1,2-Dichlorobenzene	5.00	4.75	5.00	95.0	100	79.0-121			5.13	20
1,3-Dichlorobenzene	5.00	4.99	4.98	99.8	99.6	79.0-120			0.201	20
1,4-Dichlorobenzene	5.00	5.06	5.19	101	104	79.0-120			2.54	20
trans-1,4-Dichloro-2-butene	5.00	3.92	3.49	78.4	69.8	33.0-144			11.6	20
Dichlorodifluoromethane	5.00	5.45	5.58	109	112	51.0-149			2.36	20
1,1-Dichloroethane	5.00	4.37	4.65	87.4	93.0	70.0-126			6.21	20
1,2-Dichloroethane	5.00	4.45	4.44	89.0	88.8	70.0-128			0.225	20
1,1-Dichloroethene	5.00	4.76	4.91	95.2	98.2	71.0-124			3.10	20
cis-1,2-Dichloroethene	5.00	4.75	4.83	95.0	96.6	73.0-120			1.67	20
trans-1,2-Dichloroethene	5.00	4.49	4.89	89.8	97.8	73.0-120			8.53	20
1,2-Dichloropropane	5.00	4.36	4.23	87.2	84.6	77.0-125			3.03	20
1,1-Dichloropropene	5.00	4.89	4.84	97.8	96.8	74.0-126			1.03	20
1,3-Dichloropropane	5.00	4.68	4.60	93.6	92.0	80.0-120			1.72	20
cis-1,3-Dichloropropene	5.00	4.32	4.59	86.4	91.8	80.0-123			6.06	20
trans-1,3-Dichloropropene	5.00	4.77	4.59	95.4	91.8	78.0-124			3.85	20
2,2-Dichloropropane	5.00	4.68	4.50	93.6	90.0	58.0-130			3.92	20
Di-isopropyl ether	5.00	4.55	4.60	91.0	92.0	58.0-138			1.09	20
Ethylbenzene	5.00	4.42	4.50	88.4	90.0	79.0-123			1.79	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3473319-1 11/15/19 21:11 • (LCSD) R3473319-2 11/15/19 21:31

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Hexachloro-1,3-butadiene	5.00	5.12	4.49	102	89.8	54.0-138			13.1	20
2-Hexanone	25.0	22.3	21.2	89.2	84.8	67.0-149			5.06	20
n-Hexane	5.00	4.95	5.01	99.0	100	57.0-133			1.20	20
Iodomethane	25.0	19.8	22.7	79.2	90.8	33.0-147			13.6	26
Isopropylbenzene	5.00	4.47	4.54	89.4	90.8	76.0-127			1.55	20
p-Isopropyltoluene	5.00	4.59	4.52	91.8	90.4	76.0-125			1.54	20
2-Butanone (MEK)	25.0	23.5	21.8	94.0	87.2	44.0-160			7.51	20
Methylene Chloride	5.00	4.43	4.36	88.6	87.2	67.0-120			1.59	20
4-Methyl-2-pentanone (MIBK)	25.0	22.3	21.0	89.2	84.0	68.0-142			6.00	20
Methyl tert-butyl ether	5.00	4.50	4.58	90.0	91.6	68.0-125			1.76	20
Naphthalene	5.00	4.36	4.06	87.2	81.2	54.0-135			7.13	20
n-Propylbenzene	5.00	4.52	4.75	90.4	95.0	77.0-124			4.96	20
Styrene	5.00	4.72	4.67	94.4	93.4	73.0-130			1.06	20
1,1,1,2-Tetrachloroethane	5.00	4.54	4.63	90.8	92.6	75.0-125			1.96	20
1,1,2,2-Tetrachloroethane	5.00	4.55	4.28	91.0	85.6	65.0-130			6.12	20
Toluene	5.00	4.49	4.67	89.8	93.4	79.0-120			3.93	20
1,1,2-Trichlorotrifluoroethane	5.00	5.25	5.47	105	109	69.0-132			4.10	20
1,2,3-Trichlorobenzene	5.00	4.67	4.48	93.4	89.6	50.0-138			4.15	20
1,2,4-Trichlorobenzene	5.00	5.40	5.44	108	109	57.0-137			0.738	20
1,1,1-Trichloroethane	5.00	4.73	4.84	94.6	96.8	73.0-124			2.30	20
1,1,2-Trichloroethane	5.00	4.80	4.68	96.0	93.6	80.0-120			2.53	20
Trichloroethene	5.00	4.31	4.67	86.2	93.4	78.0-124			8.02	20
Trichlorofluoromethane	5.00	5.30	5.22	106	104	59.0-147			1.52	20
1,2,3-Trimethylbenzene	5.00	4.85	4.73	97.0	94.6	77.0-120			2.51	20
1,2,4-Trimethylbenzene	5.00	4.62	4.82	92.4	96.4	76.0-121			4.24	20
1,3,5-Trimethylbenzene	5.00	4.77	4.60	95.4	92.0	76.0-122			3.63	20
Vinyl acetate	25.0	20.5	19.4	82.0	77.6	11.0-160			5.51	20
Vinyl chloride	5.00	4.81	4.69	96.2	93.8	67.0-131			2.53	20
Xylenes, Total	15.0	14.0	13.8	93.3	92.0	79.0-123			1.44	20
(S) Toluene-d8				99.2	96.6	80.0-120				
(S) 4-Bromofluorobenzene				103	97.5	77.0-126				
(S) 1,2-Dichloroethane-d4				97.1	97.3	70.0-130				

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3473794-4 11/19/19 10:30

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Bromomethane	U		0.157	2.50
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
Tetrachloroethene	U		0.199	0.500
Trichloroethene	U		0.153	0.500
1,2,3-Trichloropropane	U		0.247	2.50
Vinyl chloride	U		0.118	0.500
(S) Toluene-d8	112			80.0-120
(S) 4-Bromofluorobenzene	112			77.0-126
(S) 1,2-Dichloroethane-d4	111			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3473794-1 11/19/19 09:08 • (LCSD) R3473794-2 11/19/19 09:29

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Bromomethane	5.00	5.27	5.07	105	101	10.0-160			3.87	25
cis-1,2-Dichloroethene	5.00	5.12	4.61	102	92.2	73.0-120			10.5	20
trans-1,2-Dichloroethene	5.00	4.99	4.45	99.8	89.0	73.0-120			11.4	20
Tetrachloroethene	5.00	5.55	5.47	111	109	72.0-132			1.45	20
Trichloroethene	5.00	5.49	5.33	110	107	78.0-124			2.96	20
1,2,3-Trichloropropane	5.00	3.78	4.02	75.6	80.4	73.0-130			6.15	20
Vinyl chloride	5.00	4.88	4.77	97.6	95.4	67.0-131			2.28	20
(S) Toluene-d8				107	108	80.0-120				
(S) 4-Bromofluorobenzene				110	112	77.0-126				
(S) 1,2-Dichloroethane-d4				114	112	70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3471967-4 11/13/19 22:38

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
TPHG C6 - C12	U		24.9	100
(S) 1,2-Dichloroethane-d4	103			80.0-125
(S) 4-Bromofluorobenzene	100			75.0-120
(S) Toluene-d8	97.0			80.0-120

Laboratory Control Sample (LCS)

(LCS) R3471967-3 11/13/19 21:57

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPHG C6 - C12	500	480	96.0	66.0-120	
(S) 1,2-Dichloroethane-d4			99.0	80.0-125	
(S) 4-Bromofluorobenzene			100	75.0-120	
(S) Toluene-d8			97.5	80.0-120	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3473234-2 11/16/19 19:09

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
TPHG C6 - C12	U		24.9	100
<i>(S) 1,2-Dichloroethane-d4</i>	107			80.0-125
<i>(S) 4-Bromofluorobenzene</i>	97.9			75.0-120
<i>(S) Toluene-d8</i>	97.6			80.0-120

Laboratory Control Sample (LCS)

(LCS) R3473234-1 11/16/19 18:49

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
TPHG C6 - C12	500	453	90.6	66.0-120	
<i>(S) 1,2-Dichloroethane-d4</i>			103	80.0-125	
<i>(S) 4-Bromofluorobenzene</i>			103	75.0-120	
<i>(S) Toluene-d8</i>			97.8	80.0-120	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration method criteria.
V	The sample concentration is too high to evaluate accurate spike recoveries.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

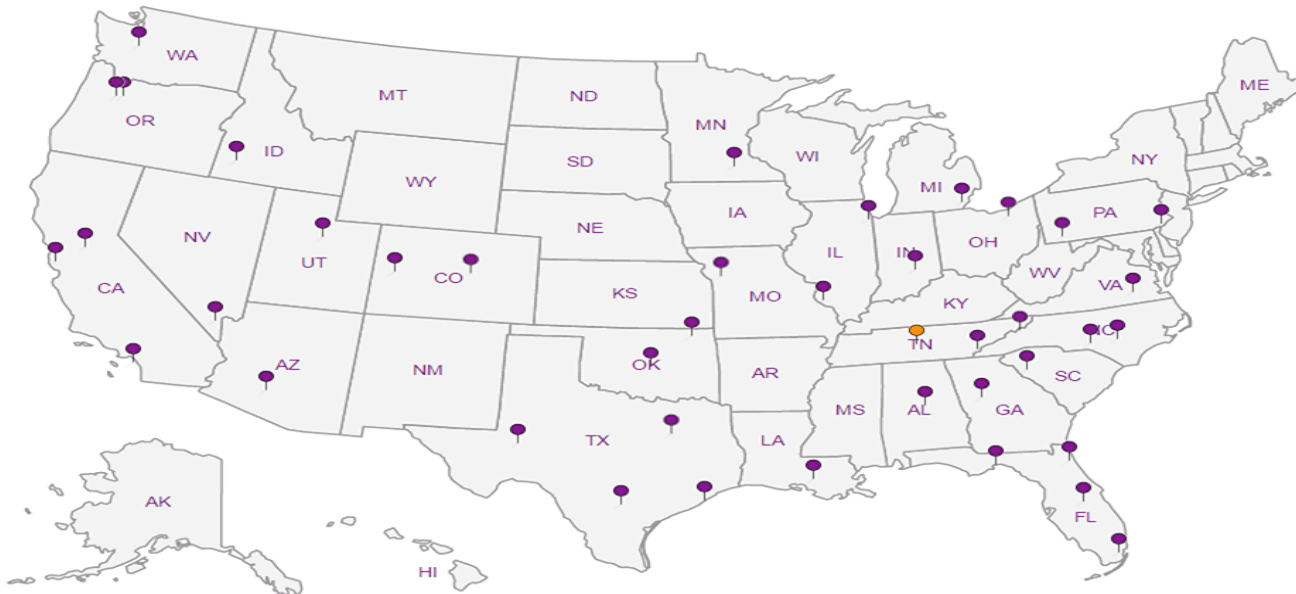
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

Company: PES Environmental, Inc. Billing Information: Attn: Accounts Payable 1215 4th Ave STE 1350, Seattle, WA 98161

Address: 1215 4th Ave STE 1350, Seattle, WA 98161

Report To: Bill Haldeman/Brian O'Neal Email To: bhdaldeman@pesenv.com; boneal@pesenv.com

Copy To: Kim Vik, Shannon McKernan, Karsten Springstead Site Collection Info/Address: 700 Dexter Ave N

ALL SHADED AREAS are for LAB USE ONLY

Container Preservative Type **

Lab Project Manager:

D064

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

Customer Project Name/Number: American Linen
1413.001.02.501E-05.601

State: WA / County/City: King/Seattle [x] PT [] MT [] CT [] ET

Phone: 206-529-3980 Site/Facility ID #: American Linen Compliance Monitoring? [x] Yes [] No

Email: mjoiner@pesenv.com

Collected By (print): Hannah Cohen Purchase Order #: PESENVSWA-ALP DW PWS ID #: DW Location Code:

Collected By (signature): Hannah Cohen Turnaround Date Required: Immediately Packed on Ice: [x] Yes [] No

Sample Disposal: [] Dispose as appropriate [] Return [] Archive: [] Hold: [] Rush: [] Same Day [] Next Day [] 2 Day [] 3 Day [] 4 Day [] 5 Day (Expedite Charges Apply) Field Filtered (if applicable): [] Yes [] No

Analysis:

Analyses

Lab Profile/Line:

NO3, SO4, Cl 125mlHDPE-NoPres	Alkalinity 125mlHDPE-NoPres	EEM RSK175LL 40mlAmb-HCl	TOC 250mlAmb-HCl or 250mlHDPE-HCl	Total Fe, Mn 6020 250mlHDPE-HNO3	VOCs 8260LLC 40mlAmb-HCl	NWTPHGX 40mlAmb-HCl
---------------------------------	-----------------------------	--------------------------	-----------------------------------	----------------------------------	--------------------------	---------------------

Lab Sample Receipt Checklist:

Custody Seals Present/Intact Y N NA

Custody Signatures Present Y N NA

Collector Signature Present Y N NA

Bottles Intact Y N NA

Correct Bottles Y N NA

Sufficient Volume Y N NA

Samples Received on Ice Y N NA

VOA - Headspace Acceptable Y N NA

USDA Regulated Soils Y N NA

Samples in Holding Time Y N NA

Residual Chlorine Present Y N NA

Cl Strips: Y N NA

Sample pH Acceptable Y N NA

pH Strips: Y N NA

Sulfide Present Y N NA

Lead Acetate Strips: Y N NA

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Composite End		Res Cl	# of Ctns
			Date	Time	Date	Time		
MW-92-110819	GW	Grab	11/8/19	800				12
MW-184-110819				910				12
MW-183-110819				1000				12
MW-181-110819				1110				12
MW-182-110819				1315				12
TB-110819	-	-		1530				20

LAB USE ONLY:
Lab Sample # / Comments:

L1159168-01
02
03
04
05
06

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 120357840188

Samples received via: FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:

Temp Blank Received: Y N NA

Therm ID#:

Cooler 1 Temp Upon Receipt: 34°C

Cooler 1 Therm Corr. Factor: -1.0°C

Cooler 1 Corrected Temp: 35°C

Comments:

Relinquished by/Company: (Signature) Hannah Cohen Date/Time: 11/8/19 1545

Received by/Company: (Signature) Date/Time:

Relinquished by/Company: (Signature) Date/Time:

Received by/Company: (Signature) Date/Time:

Relinquished by/Company: (Signature) Date/Time:

Received by/Company: (Signature) Date/Time: 11/9/19 8:45

MTJL LAB USE ONLY

Table #:

Acctnum:

Template:

Prelogin:

PM:

PB:

RAD SCREEN: <0.5 mR/hr

Trip Blank Received: Y N NA

HCL MeOH TSP Other 2

Non Conformance(s): YES / NO

Page: 1 of: 1

Cooler Receipt Form

Client: <i>Pace National TN</i>	SDG# <i>21159108</i>	
Cooler Received/Opened On: <i>11/12/19</i>	Temperature: <i>3.5^a 3.1^{oc}</i>	
Received By: <i>David Ramirez</i>		
Signature: <i>David Ramirez 1023</i>		
Receipt Check List		
COC Seal Present / Intact?	NP	Yes No
COC Signed / Accurate?		<input checked="" type="checkbox"/> <input type="checkbox"/>
Bottles arrive intact?		<input checked="" type="checkbox"/> <input type="checkbox"/> <i>NA</i>
Correct bottles used?		<input checked="" type="checkbox"/> <input type="checkbox"/>
Sufficient volume sent?		<input checked="" type="checkbox"/> <input type="checkbox"/>
If Applicable		
VOA Zero headspace?		<input checked="" type="checkbox"/> <input type="checkbox"/>
Preservation Correct / Checked?		

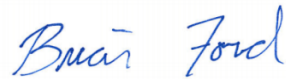
*Internal Transfer from TN
 sample Ok received on 11/14/19 @ 16.7°C.
 David Ramirez 11/14/19 0840*

PES Environmental, Inc.- WA

Sample Delivery Group: L1156530
Samples Received: 11/02/2019
Project Number: 1413.001.02.501E
Description: ALS

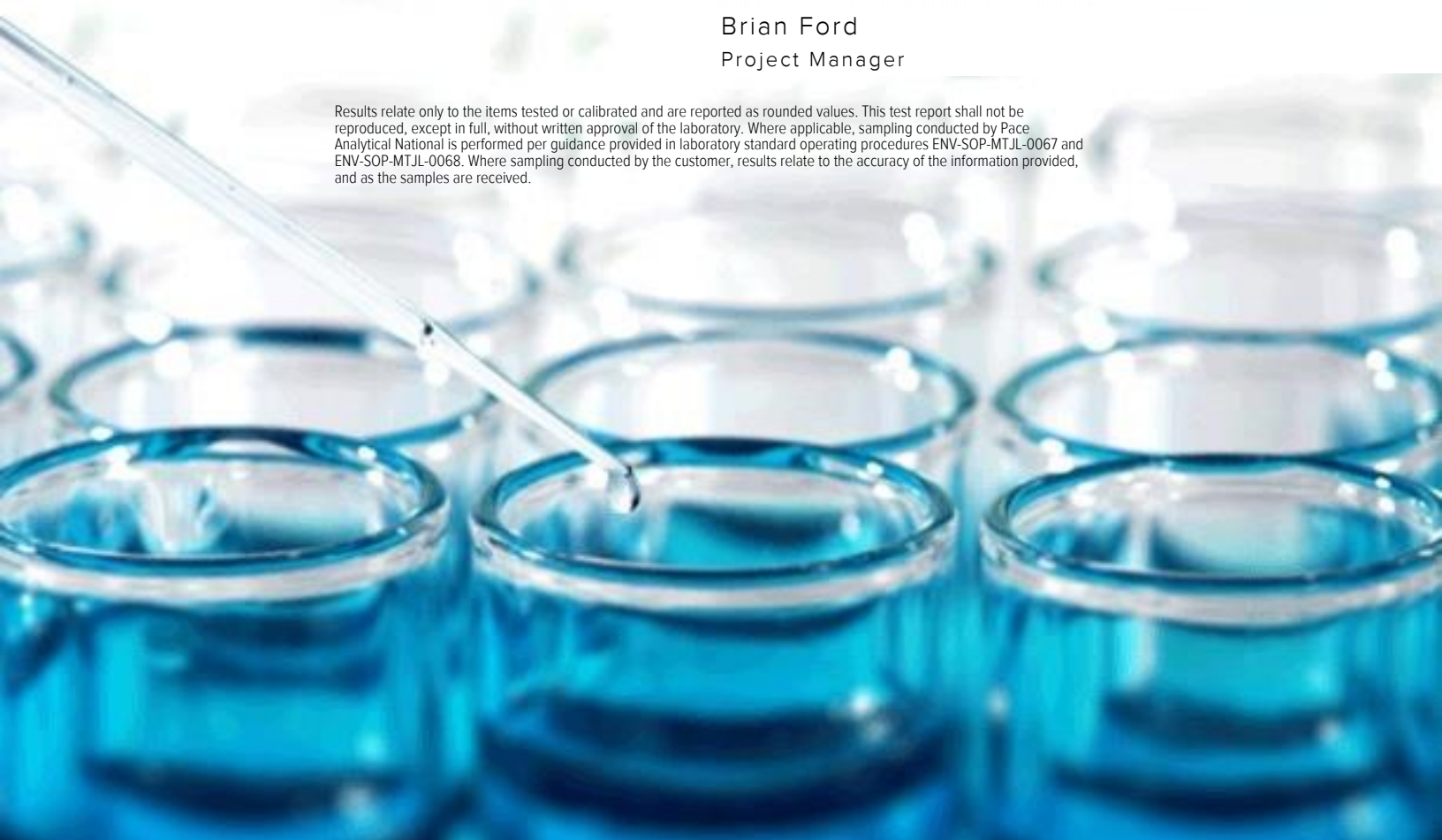
Report To: Brian O'Neal/Bill Haldeman
1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





Cp: Cover Page	1	¹Cp
Tc: Table of Contents	2	²Tc
Ss: Sample Summary	3	³Ss
Cn: Case Narrative	4	⁴Cn
Sr: Sample Results	5	⁵Sr
SV01-110119 L1156530-01	5	
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Qc: Quality Control Summary	11	⁶Qc
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Gl: Glossary of Terms	15	⁷Gl
Al: Accreditations & Locations	16	⁸Al
Sc: Sample Chain of Custody	17	⁹Sc

SAMPLE SUMMARY



SV01-110119 L1156530-01 Air

Collected by
S. McKernan
Collected date/time
11/01/19 11:18
Received date/time
11/02/19 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1375952	1	11/06/19 21:35	11/06/19 21:35	CAW	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

SV01-110119-D L1156530-02 Air

Collected by
S. McKernan
Collected date/time
11/01/19 11:18
Received date/time
11/02/19 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1375952	1	11/06/19 22:14	11/06/19 22:14	CAW	Mt. Juliet, TN

4
Cn

5
Sr

SV02-110119 L1156530-03 Air

Collected by
S. McKernan
Collected date/time
11/01/19 12:11
Received date/time
11/02/19 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1375952	1	11/06/19 22:53	11/06/19 22:53	CAW	Mt. Juliet, TN

6
Qc

7
Gl

8
Al

9
Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	11.6	27.6		1	WG1375952
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1375952
Benzene	71-43-2	78.10	0.200	0.639	0.225	0.719		1	WG1375952
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1375952
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1375952
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1375952
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1375952
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1375952
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1375952
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1375952
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1375952
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1375952
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1375952
Chloromethane	74-87-3	50.50	0.200	0.413	0.384	0.793		1	WG1375952
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1375952
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1375952
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1375952
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1375952
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1375952
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1375952
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1375952
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1375952
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1375952
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1375952
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1375952
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1375952
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1375952
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1375952
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1375952
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1375952
Ethanol	64-17-5	46.10	0.630	1.19	22.3	42.0		1	WG1375952
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1375952
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1375952
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	ND	ND		1	WG1375952
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.488	2.41		1	WG1375952
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1375952
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1375952
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1375952
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1375952
n-Hexane	110-54-3	86.20	0.200	0.705	2.24	7.90		1	WG1375952
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1375952
Methylene Chloride	75-09-2	84.90	0.200	0.694	7.18	24.9		1	WG1375952
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1375952
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1375952
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1375952
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1375952
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1375952
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1375952
2-Propanol	67-63-0	60.10	1.25	3.07	6.65	16.3		1	WG1375952
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1375952
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1375952
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1375952
Tetrachloroethylene	127-18-4	166	0.200	1.36	ND	ND		1	WG1375952
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1375952
Toluene	108-88-3	92.10	0.200	0.753	1.43	5.39		1	WG1375952
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1375952

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	3.63	19.7		1	WG1375952
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1375952
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1375952
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1375952
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1375952
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1375952
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1375952
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1375952
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1375952
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1375952
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1375952
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		95.9				WG1375952

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	8.72	20.7		1	WG1375952
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1375952
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1375952
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1375952
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1375952
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1375952
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1375952
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1375952
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1375952
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1375952
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1375952
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1375952
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1375952
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1375952
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1375952
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1375952
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1375952
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1375952
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1375952
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1375952
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1375952
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1375952
1,1-Dichloroethane	75-34-3	98	0.200	0.802	0.853	3.42		1	WG1375952
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1375952
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1375952
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1375952
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1375952
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1375952
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1375952
1,4-Dioxane	123-91-1	88.10	0.200	0.721	0.221	0.796		1	WG1375952
Ethanol	64-17-5	46.10	0.630	1.19	10.2	19.2		1	WG1375952
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1375952
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1375952
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	ND	ND		1	WG1375952
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	ND	ND		1	WG1375952
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1375952
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1375952
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1375952
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1375952
n-Hexane	110-54-3	86.20	0.200	0.705	ND	ND		1	WG1375952
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1375952
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1375952
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1375952
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1375952
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1375952
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1375952
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1375952
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1375952
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1375952
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1375952
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1375952
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1375952
Tetrachloroethylene	127-18-4	166	0.200	1.36	0.405	2.75		1	WG1375952
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1375952
Toluene	108-88-3	92.10	0.200	0.753	0.431	1.62		1	WG1375952
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1375952

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	12.6	68.5		1	WG1375952
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1375952
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1375952
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1375952
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1375952
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1375952
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1375952
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1375952
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1375952
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1375952
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1375952
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		93.5				WG1375952

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	ND	ND		1	WG1375952
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1375952
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1375952
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1375952
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1375952
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1375952
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1375952
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1375952
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1375952
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1375952
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1375952
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1375952
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1375952
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1375952
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1375952
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1375952
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1375952
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1375952
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1375952
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1375952
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1375952
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1375952
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1375952
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1375952
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1375952
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1375952
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1375952
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1375952
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1375952
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1375952
Ethanol	64-17-5	46.10	0.630	1.19	16.6	31.3		1	WG1375952
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1375952
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1375952
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.851	4.78		1	WG1375952
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	ND	ND		1	WG1375952
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1375952
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1375952
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1375952
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1375952
n-Hexane	110-54-3	86.20	0.200	0.705	0.309	1.09		1	WG1375952
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1375952
Methylene Chloride	75-09-2	84.90	0.200	0.694	1.28	4.44		1	WG1375952
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1375952
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1375952
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1375952
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1375952
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1375952
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1375952
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1375952
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1375952
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1375952
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1375952
Tetrachloroethylene	127-18-4	166	0.200	1.36	2.14	14.5		1	WG1375952
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1375952
Toluene	108-88-3	92.10	0.200	0.753	0.386	1.45		1	WG1375952
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1375952

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1375952
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1375952
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1375952
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1375952
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1375952
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1375952
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1375952
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1375952
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1375952
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1375952
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1375952
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		102				WG1375952

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3469383-3 11/06/19 10:18

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	U		0.0569	1.25
Allyl Chloride	U		0.0546	0.200
Benzene	U		0.0460	0.200
Benzyl Chloride	U		0.0598	0.200
Bromodichloromethane	U		0.0436	0.200
Bromoform	U		0.0786	0.600
Bromomethane	U		0.0609	0.200
1,3-Butadiene	U		0.0563	2.00
Carbon disulfide	U		0.0544	0.200
Carbon tetrachloride	U		0.0585	0.200
Chlorobenzene	U		0.0601	0.200
Chloroethane	U		0.0489	0.200
Chloroform	U		0.0574	0.200
Chloromethane	U		0.0544	0.200
2-Chlorotoluene	U		0.0605	0.200
Cyclohexane	U		0.0534	0.200
Dibromochloromethane	U		0.0494	0.200
1,2-Dibromoethane	U		0.0185	0.200
1,2-Dichlorobenzene	U		0.0603	0.200
1,3-Dichlorobenzene	U		0.0597	0.200
1,4-Dichlorobenzene	U		0.0557	0.200
1,2-Dichloroethane	U		0.0616	0.200
1,1-Dichloroethane	U		0.0514	0.200
1,1-Dichloroethene	U		0.0490	0.200
cis-1,2-Dichloroethene	U		0.0389	0.200
trans-1,2-Dichloroethene	U		0.0464	0.200
1,2-Dichloropropane	U		0.0599	0.200
cis-1,3-Dichloropropene	U		0.0588	0.200
trans-1,3-Dichloropropene	U		0.0435	0.200
1,4-Dioxane	U		0.0554	0.200
Ethylbenzene	U		0.0506	0.200
4-Ethyltoluene	U		0.0666	0.200
Trichlorofluoromethane	U		0.0673	0.200
Dichlorodifluoromethane	U		0.0601	0.200
1,1,2-Trichlorotrifluoroethane	U		0.0687	0.200
1,2-Dichlorotetrafluoroethane	U		0.0458	0.200
Heptane	U		0.0626	0.200
Hexachloro-1,3-butadiene	U		0.0656	0.630
n-Hexane	U		0.0457	0.200
Isopropylbenzene	U		0.0563	0.200

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3469383-3 11/06/19 10:18

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ppbv		ppbv	ppbv
Methylene Chloride	U		0.0465	0.200
Methyl Butyl Ketone	U		0.0682	1.25
2-Butanone (MEK)	U		0.0493	1.25
4-Methyl-2-pentanone (MIBK)	U		0.0650	1.25
Methyl Methacrylate	U		0.0773	0.200
MTBE	U		0.0505	0.200
Naphthalene	U		0.154	0.630
2-Propanol	U		0.0882	1.25
Propene	U		0.0932	0.400
Styrene	U		0.0465	0.200
1,1,2,2-Tetrachloroethane	U		0.0576	0.200
Tetrachloroethylene	U		0.0497	0.200
Tetrahydrofuran	U		0.0508	0.200
Toluene	U		0.0499	0.200
1,2,4-Trichlorobenzene	U		0.148	0.630
1,1,1-Trichloroethane	U		0.0665	0.200
1,1,2-Trichloroethane	U		0.0287	0.200
Trichloroethylene	U		0.0545	0.200
1,2,4-Trimethylbenzene	U		0.0483	0.200
1,3,5-Trimethylbenzene	U		0.0631	0.200
2,2,4-Trimethylpentane	U		0.0456	0.200
Vinyl chloride	U		0.0457	0.200
Vinyl Bromide	U		0.0727	0.200
Vinyl acetate	U		0.0639	0.200
m&p-Xylene	U		0.0946	0.400
o-Xylene	U		0.0633	0.200
Ethanol	U		0.0832	0.630
(S) 1,4-Bromofluorobenzene	88.8			60.0-140

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3469383-1 11/06/19 08:59 • (LCSD) R3469383-2 11/06/19 09:39

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ppbv	ppbv	ppbv	%	%	%			%	%
Ethanol	3.75	4.85	4.90	129	131	55.0-148			1.03	25
Propene	3.75	4.21	4.18	112	111	64.0-144			0.715	25
Dichlorodifluoromethane	3.75	4.26	4.24	114	113	64.0-139			0.471	25
1,2-Dichlorotetrafluoroethane	3.75	4.27	4.27	114	114	70.0-130			0.000	25
Chloromethane	3.75	4.34	4.13	116	110	70.0-130			4.96	25



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3469383-1 11/06/19 08:59 • (LCSD) R3469383-2 11/06/19 09:39

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Vinyl chloride	3.75	4.35	4.44	116	118	70.0-130			2.05	25
1,3-Butadiene	3.75	4.26	4.30	114	115	70.0-130			0.935	25
Bromomethane	3.75	4.40	4.31	117	115	70.0-130			2.07	25
Chloroethane	3.75	4.37	4.27	117	114	70.0-130			2.31	25
Trichlorofluoromethane	3.75	4.29	4.22	114	113	70.0-130			1.65	25
1,1,2-Trichlorotrifluoroethane	3.75	4.33	4.25	115	113	70.0-130			1.86	25
1,1-Dichloroethene	3.75	4.29	4.26	114	114	70.0-130			0.702	25
1,1-Dichloroethane	3.75	4.19	4.13	112	110	70.0-130			1.44	25
Acetone	3.75	4.35	4.33	116	115	70.0-130			0.461	25
2-Propanol	3.75	4.26	4.17	114	111	70.0-139			2.14	25
Carbon disulfide	3.75	4.35	4.34	116	116	70.0-130			0.230	25
Methylene Chloride	3.75	4.10	4.09	109	109	70.0-130			0.244	25
MTBE	3.75	4.19	4.21	112	112	70.0-130			0.476	25
trans-1,2-Dichloroethene	3.75	4.21	4.23	112	113	70.0-130			0.474	25
n-Hexane	3.75	4.29	4.27	114	114	70.0-130			0.467	25
Vinyl acetate	3.75	4.19	4.18	112	111	70.0-130			0.239	25
Methyl Ethyl Ketone	3.75	4.35	4.27	116	114	70.0-130			1.86	25
cis-1,2-Dichloroethene	3.75	4.32	4.25	115	113	70.0-130			1.63	25
Chloroform	3.75	4.22	4.19	113	112	70.0-130			0.713	25
Cyclohexane	3.75	4.27	4.24	114	113	70.0-130			0.705	25
1,1,1-Trichloroethane	3.75	4.23	4.15	113	111	70.0-130			1.91	25
Carbon tetrachloride	3.75	4.18	4.19	111	112	70.0-130			0.239	25
Benzene	3.75	4.27	4.28	114	114	70.0-130			0.234	25
1,2-Dichloroethane	3.75	4.25	4.16	113	111	70.0-130			2.14	25
Heptane	3.75	4.16	4.21	111	112	70.0-130			1.19	25
Trichloroethylene	3.75	4.31	4.30	115	115	70.0-130			0.232	25
1,2-Dichloropropane	3.75	4.20	4.30	112	115	70.0-130			2.35	25
1,4-Dioxane	3.75	4.29	4.28	114	114	70.0-140			0.233	25
Bromodichloromethane	3.75	4.28	4.25	114	113	70.0-130			0.703	25
cis-1,3-Dichloropropene	3.75	4.30	4.35	115	116	70.0-130			1.16	25
4-Methyl-2-pentanone (MIBK)	3.75	4.16	4.18	111	111	70.0-139			0.480	25
Toluene	3.75	4.27	4.24	114	113	70.0-130			0.705	25
trans-1,3-Dichloropropene	3.75	4.31	4.31	115	115	70.0-130			0.000	25
1,1,2-Trichloroethane	3.75	4.37	4.42	117	118	70.0-130			1.14	25
Tetrachloroethylene	3.75	4.32	4.33	115	115	70.0-130			0.231	25
Methyl Butyl Ketone	3.75	4.23	4.14	113	110	70.0-149			2.15	25
Dibromochloromethane	3.75	4.38	4.36	117	116	70.0-130			0.458	25
1,2-Dibromoethane	3.75	4.30	4.33	115	115	70.0-130			0.695	25
Chlorobenzene	3.75	4.31	4.36	115	116	70.0-130			1.15	25
Ethylbenzene	3.75	4.29	4.24	114	113	70.0-130			1.17	25

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3469383-1 11/06/19 08:59 • (LCSD) R3469383-2 11/06/19 09:39

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
m&p-Xylene	7.50	8.72	8.63	116	115	70.0-130			1.04	25
o-Xylene	3.75	4.33	4.26	115	114	70.0-130			1.63	25
Styrene	3.75	4.50	4.36	120	116	70.0-130			3.16	25
Bromoform	3.75	4.37	4.27	117	114	70.0-130			2.31	25
1,1,2,2-Tetrachloroethane	3.75	4.33	4.22	115	113	70.0-130			2.57	25
4-Ethyltoluene	3.75	4.31	4.27	115	114	70.0-130			0.932	25
1,3,5-Trimethylbenzene	3.75	4.36	4.32	116	115	70.0-130			0.922	25
1,2,4-Trimethylbenzene	3.75	4.38	4.30	117	115	70.0-130			1.84	25
1,3-Dichlorobenzene	3.75	4.35	4.18	116	111	70.0-130			3.99	25
1,4-Dichlorobenzene	3.75	4.45	4.17	119	111	70.0-130			6.50	25
Benzyl Chloride	3.75	4.09	3.99	109	106	70.0-152			2.48	25
1,2-Dichlorobenzene	3.75	4.27	4.14	114	110	70.0-130			3.09	25
1,2,4-Trichlorobenzene	3.75	4.11	4.09	110	109	70.0-160			0.488	25
Hexachloro-1,3-butadiene	3.75	4.40	4.32	117	115	70.0-151			1.83	25
Naphthalene	3.75	4.20	4.16	112	111	70.0-159			0.957	25
Allyl Chloride	3.75	4.25	4.23	113	113	70.0-130			0.472	25
2-Chlorotoluene	3.75	4.40	4.30	117	115	70.0-130			2.30	25
Methyl Methacrylate	3.75	4.29	4.26	114	114	70.0-130			0.702	25
Tetrahydrofuran	3.75	4.17	4.10	111	109	70.0-137			1.69	25
2,2,4-Trimethylpentane	3.75	4.25	4.22	113	113	70.0-130			0.708	25
Vinyl Bromide	3.75	4.42	4.34	118	116	70.0-130			1.83	25
Isopropylbenzene	3.75	4.30	4.33	115	115	70.0-130			0.695	25
<i>(S) 1,4-Bromofluorobenzene</i>				100	99.7	60.0-140				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

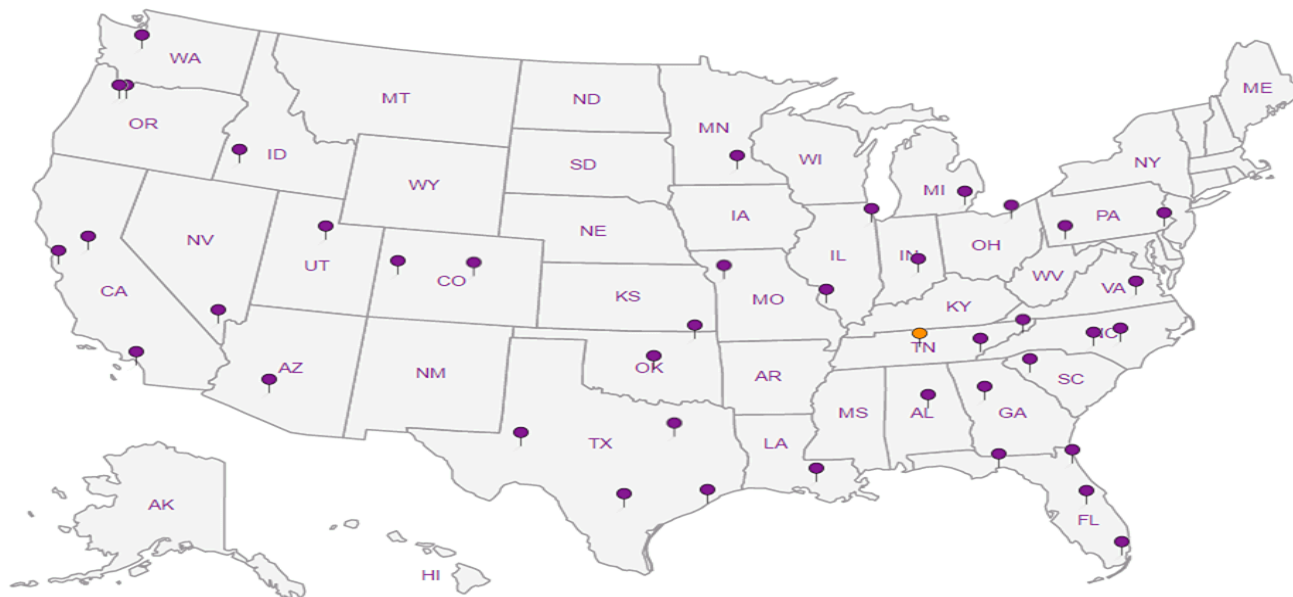
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

PES Environmental, Inc.- WA

1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Billing Information:

Attn: Accounts Payable
1215 Fourth Ave., Ste. 1350
Seattle, WA 98161

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 1



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



Report to:
Brian O'Neal/Bill Haldeman

Email To: boneal@pesenv.com;
bhaldeman@pesenv.com;

Project Description: **ALS**

City/State Collected: **SEATTLE, WA**

Please Circle:
PT MT CT ET

Phone: 206-529-3980
Fax: 206-529-3985

Client Project #

1413.001.02.501E

Lab Project #
PESENVSWA-ALP

Collected by (print):
S. MCKERNAN

Site/Facility ID #

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)

Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Quote #

Date Results Needed

Immediately Packed on Ice N Y

No.
of
Cntrs

TO-15 Summa

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Analysis / Container / Preservative							Remarks	Sample # (lab only)	
SV01-110119	GRAB	Air	NA	11/01/19	1118	1	X									-01
SV01-110119-D	↓	Air	↓	↓	1118	1	X									02
SV02-110119	↓	Air	↓	↓	1211	1	X									03
		Air														
		Air														

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Sample Receipt Checklist

COC Seal Present/Intact:	<input checked="" type="checkbox"/> NP	<input type="checkbox"/> Y	<input type="checkbox"/> N
COC Signed/Accurate:	<input checked="" type="checkbox"/>	<input type="checkbox"/> Y	<input type="checkbox"/> N
Bottles arrive intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/> Y	<input type="checkbox"/> N
Correct bottles used:	<input checked="" type="checkbox"/>	<input type="checkbox"/> Y	<input type="checkbox"/> N
Sufficient volume sent:	<input checked="" type="checkbox"/>	<input type="checkbox"/> Y	<input type="checkbox"/> N
If Applicable			
VOA Zero Headspace:	<input type="checkbox"/>	<input type="checkbox"/> Y	<input type="checkbox"/> N
Preservation Correct/Checked:	<input type="checkbox"/>	<input type="checkbox"/> Y	<input type="checkbox"/> N
RAD Screen <0.5 mR/hr:	<input checked="" type="checkbox"/>	<input type="checkbox"/> Y	<input type="checkbox"/> N

Samples returned via:
 UPS FedEx Courier

Tracking #

Relinquished by: (Signature) 	Date: 13 11/1/19	Time: 1330	Received by: (Signature)	Trip Blank Received: Yes (No) HCL/MeOH TBR	Bottles Received: 3	If preservation required by Login: Date/Time	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: Am5 °C			
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) 	Date: 11-02	Time: 0915	Hold:	Condition: NCF / OK

MEMORANDUM

TO: Project File **DATE:** November 27, 2019
FROM: Jessie Compeau
SUBJECT: Laboratory Data Validation Review
PROJECT: American Linen Data Validation
PROJECT #: 1413.001.02.501E
TASK: EIM Data Validation Level EPA2A for October 2019 – Groundwater Samples
LAB: Pace Sample Delivery Groups (SDGs): L1146788, L1147264, L1147791, and L1148422

Seventeen (17) groundwater samples including one (1) field duplicate sample and three (3) trip blanks were collected as part of the Remedial Investigation (RI) sampling event at the Former American Linen Supply Site, in Seattle, Washington, October 2-3, and 7-9, 2019. The samples were shipped and delivered to Pace Lab Sciences (Pace) of Mount Juliet, TN for laboratory analysis. Selected samples were analyzed for the following:

- Volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method 8260C;
- VOCs (dissolved gases – methane, ethane, and ethene) by EPA SOP RSK 175;
- Alkalinity by Method 2320 B-2011;
- Anions (chloride, nitrate, and sulfate) by USEPA Method 9056A;
- Total Organic Carbon (TOC) by USEPA Method 9060A; and
- Metals (iron and manganese) by USEPA Method 6020B.

The RI sampling was conducted during the month of October and results are reported in multiple SDGs from Pace. Pace SDGs are reviewed in groups of approximately four per each data validation report. Group 1 analytical results are reported in SDGs L1146788, L1147264, L1147791 and L1148422. The quality assurance review of the laboratory data associated with Group 1 is summarized below.

DATA QUALIFICATIONS

Guidelines established by USEPA for a limited data validation review of analytical data along with Pace control limit criteria were used to validate the data. The comments presented in this memorandum refer to the laboratory's performance in meeting the quality control criteria outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2017) and USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA, 2017). Following Guidelines, non-project-specific laboratory duplicates and matrix spike results were not evaluated as part of this data validation.

DATA VALIDATION

Completeness

All samples were collected and analyzed as requested with the following discussions:

- SDG L1146788: Review of the chain of custody (COC) shows that TOC was not requested though it was analyzed on all samples. On October 7, 2019 PES contacted Pace by email to confirm the analysis request for TOC on all samples.
- SDG L1146788: Sample collected from monitoring well MW-316 was collected over a two-day period. Majority of sample (MW-316-100219 or Pace SDG L1146788-01) was collected on October 2, 2019 and additional volume was collected on October 3, 2019 for nitrate analysis (MW-316-100219 or Pace SDG L1146788-05).
- SDG L1146788: Review of the COC shows Trip Blank is listed in the remarks portion of the COC. No action was taken other than to note this.
- SDG L1147264: Notes on the COC indicate that containers were not provided for TOC analyses however TOC results are reported for all associated samples. On October 8, 2019 Pace, via email communication, indicated that the laboratory was switching TOC containers to 250 mL polyethylene instead of a 250 mL amber glass bottle. Review of EPA Method 9060A indicates that sampling and storage of samples in amber glass bottles is preferable however sampling and storage in plastic bottles is permissible if the containers do not contribute contaminating organics to the samples. Additionally, the method indicates that sample containers should not be exposed to sunlight and should be appropriately preserved.
- SDG L1147264: COC shows date received as 10/8 instead of 10/8/19. The COC was relinquished on 10/7/19 and sample acknowledgment/courier tracking data may be used to support receipt date of 10/8/2019. Pace's standard policy is to include the day, month, and year and indicated that the abbreviated date format was inadvertent.
- SDG L1147791: COC shows date received as 10/9 instead of 10/9/19. The COC was relinquished on 10/8/19 and sample acknowledgement/courier tracking data may be used to support receipt date of 10/9/2019. Pace's standard policy is to include the day, month, and year and indicated that the abbreviated date format was inadvertent.
- SDG L1148422: COC signature block is not legible since the lower portion of the page is cut-off. Pace rescanned an acceptable copy of the COC for PES's records.

Sample Collection and Preservation

Samples were collected in laboratory-supplied sample containers preserved as appropriate for the individual analyses conducted. The samples were packed on ice in coolers and delivered by courier to the analytical laboratory. The laboratory reported that the coolers were received at a cooler temperature less than the recommended temperature preservation of 6°C. Samples were

received in good condition. No data were qualified based upon the sample collection and preservation information.

Holding Times

USEPA Method 8260C:

All samples were analyzed for VOCs within the EPA recommended holding time of fourteen days for preserved waters from the date of collection. All holding time criteria are met.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

All samples were analyzed within the WA State recommended holding time of fourteen days for preserved waters from the date of sample collection. All holding time criteria are met.

USEPA Method 6020B:

All samples were analyzed within the USEPA recommended holding time for iron and manganese of 180 days for preserved waters from the date of sample collection. All holding time criteria are met.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

All samples were analyzed within the USEPA recommended holding time for alkalinity (14 days), chloride (28 days), sulfate (28 days), and nitrate (48 hours), and TOC (28 days) for preserved waters from the date of sample collection. All holding time criteria are met with the following exceptions:

- SDG L1146788: Nitrate analysis for samples MW-324-100219, MW-328-100219, and MW-327-100219 were analyzed past the 48-hour holding time. **Nitrate results are estimated and qualified (UJ/J) due to holding time exceedance.**

Initial and Continuing Calibration

Calibration data for this project are not required for this deliverable however PACE's notes indicate the following:

- SDGs L1146788 and L1147264 - *USEPA Method 8260C*: Continuing calibration verification (CCV) issues were noted by Pace for several compounds associated with the trip blanks. The compounds are qualified by the laboratory "J0" to indicate that percent difference CCV is outside of laboratory acceptance criteria. No action is taken other than to note this.
- SDGs L1146788 and L1147264 - *USEPA Method 8260C*: Continuing calibration verification (CCV) issues were noted by Pace for acetone associated with analytical batches in each SDG. These compounds are qualified by the laboratory "J0" to indicate that percent difference CCV is outside of laboratory acceptance criteria. Associated sample results with laboratory qualified (J0) results are estimated and qualified (J/UJ) however trip blank contamination qualifiers supersede these qualifiers. Refer to Trip Blank section of this report for additional details.

Method Blank Results

USEPA Method 8260C:

Laboratory method blanks were included with the analytical batches per method requirement. The target analytes were not detected in the method blanks at or above the reporting detection limits (RDLs).

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

Laboratory method blanks were included with the analytical batches per method requirement. The target analytes (dissolved gases) are not detected in the method blanks at or above the RDLs.

USEPA Method 6020B and General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

Laboratory method blanks were included with the analytical batches per method requirement. The target analytes were detected in the method blanks below the RDLs. Per Guidance, no action is taken for blank detections less than the RDL when associated sample detections are greater than the RDL. General chemistry and metal blank detections are shown below:

SDG	Batch	Method	Analyte	Method Blank Result	Qualifier	RDL	Units	Associated Result(s) Qualified
L1146788	WG1362246	SM2320B	Alkalinity as CaCO ₃ , Total	3920	J	20000	ug/L	NO
L1146788	WG1357983	9056A	Chloride	52.6	J	1000	ug/L	NO
L1146788	WG1361291	9060A	TOC	726	J	1000	ug/L	NO
L1146788	WG1358528	6020B	Manganese	1.51	J	5.00	ug/L	NO
L1147264	WG1362246	SM2320B	Alkalinity as CaCO ₃ , Total	3920	J	20000	ug/L	NO
L1147264	WG1361291	9060A	TOC	726	J	1000	ug/L	NO
L1147264	WG1358528	6020B	Manganese	1.03	J	5.00	ug/L	NO
L1147791	WG1362380	SM2320B	Alkalinity as CaCO ₃ , Total	3660	J	20000	ug/L	NO
L1147791	WG1359667	9056A	Nitrate	26.7	J	100	ug/L	NO
L1147791	WG1361408	9060A	TOC	268	J	1000	ug/L	NO
L1147791	WG1362294	9060A	TOC	662	J	1000	ug/L	NO
L1148422	WG1363488	SM2320B	Alkalinity as CaCO ₃ , Total	3770	J	20000	ug/L	NO
L1148422	WG1360711	9056A	Chloride	78.6	J	1000	ug/L	NO
L1148422	WG1362106	9060A	TOC	222	J	1000	ug/L	YES
L1148422	WG1362075	6020B	Manganese	0.308	J	5.00	ug/L	NO

The following blank was detected below the RDL:

- SDG 1148422: Sample MW-323-100919 TOC result was detected below the RDL and at a low level in the associated blank. **TOC result in sample MW-323-100919 is qualified (U) as not detected due to blank contamination.**

Trip Blank Results

USEPA Method 8260C:

Three trip blanks were collected and submitted for VOC analysis. The target analytes were not detected in the trip blanks at or above the reporting detection limits (RDLs) with the following exceptions:

- SDG L1146788 – Analytical batch WG1362918: A low level of acetone and is detected in the trip blank. **Associated acetone detections, below the RDL, are qualified as not detected (U).**
- SDG L1147264 – Analytical batch WG1362918: A low level of acetone and is detected in the trip blank. **Associated acetone detections, below the RDL, are qualified as not detected (U).**
- SDG L1147791: Analytical batch WG1364657: A low level of acetone and is detected in the trip blank. **Associated acetone detections, below the RDL, are qualified as not detected (U).**

Field, Rinsate, or Equipment Blank Results

All Analytical Methods:

Equipment blanks were not collected.

Field Duplicate Analyses

Field duplicate pairs were submitted and analyzed. Field duplicate sample pair is as follows:

- SDG L1146788: Samples MW-329-100319 and MW-915-100319.

Target analyte results are comparable and within a relative percent difference (RPD) of 30% (\pm 1x RDL for groundwater results <5X the RDL) for the field duplicate pair.

Laboratory Duplicate Analyses

USEPA Method 8260C:

Laboratory duplicate samples were not analyzed. Refer to laboratory control sample/sample duplicate (LCS/LCSD) or matrix spike/matrix spike duplicate (MS/MSD) results for precision data.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

Laboratory duplicate sample analyses were performed on client and non-client samples within the analytical batches. The primary/duplicate RPDs for dissolved gas analyses are within the laboratory control limit of 20%.

USEPA Method 6020B:

Laboratory duplicate samples were not analyzed. Refer to LCS/LCSD or MS/MSD results for precision data.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

Laboratory duplicate sample analyses were performed on client samples and/or on non-client samples. The primary/duplicate RPDs for general chemistry parameters are within the laboratory control limits.

Surrogate Recoveries

USEPA Method 8260C:

The surrogate recovery results for the samples, laboratory control samples, matrix spike samples, trip blanks, and the method blanks are within the laboratory surrogate control limits for all the analyses.

Laboratory Control Samples

USEPA Method 8260C:

Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) or laboratory control sample (LCS) were analyzed by USEPA Method 8260C method. The LCS % Rs or LCS/LCSD %Rs and RPDs for the all target compounds are within the laboratory control criteria for waters with the following discussions:

- SDGs L1147791 and L1148422 - Analytical batches WG1364657. An LCSD was not analyzed. Refer to the field duplicate data associated with SDG L1146788 for precision data.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

The LCS/LCSD %Rs and RPDs for the target compound (dissolved gases) are within the laboratory control criteria for waters.

USEPA Method 6020B:

The LCS/LCSD %Rs and RPDs for the target compound (iron and manganese) are within the laboratory control criteria for waters.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

The LCS Rs for general chemistry parameters are within the laboratory control criteria for waters.

Matrix Spike/Matrix Spike Duplicates

USEPA Method 8260C:

Matrix spike/matrix spike duplicate (MS/MSD) analyses were performed on client and non-client samples. In cases where MS/MSD spike analyses are not performed refer to LCS/LCSD for accuracy and precision data. The MS/MSD %Rs and RPDs for all target compounds are within the laboratory control criteria for waters.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

MS/MSD analyses were not performed. Refer to LCS/LCSD and laboratory duplicate results for accuracy and precision data.

USEPA Method 6020B:

MS/MSD analyses were performed on client and non-client samples within the analytical batches. The MS/MSD % Rs and RPD were acceptable and within laboratory control limit criteria for water samples.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

MS/MSD analyses were performed on client and/or non-client samples within the analytical batches. In cases where MS/MSD spike analyses are not performed refer to LCS/LCSD or laboratory duplicate data for accuracy and precision data. The MS/MSD % Rs and RPDs are acceptable and within laboratory control limit criteria for water samples with the following exception:

- SDG L1146788 - Analytical batch WG1361291: The MS/MSDs were performed on a client and on a non-client sample. On the non-client sample results for TOC are qualified (E) by the laboratory to indicate that the spiked analyte concentration exceeded the upper calibration range. No action was taken other than to note that client sample MW-329-100319 matrix spike results are within criteria.

Other Quality Control Issues

No laboratory quality control issues were identified in the laboratory report with the following discussions:

- Multiple SDGs: Selected sample narratives for alkalinity results indicate that several sample containers had some headspace and exposure to air may have impacted the reported results. No action was taken other than to note this.
- Electronic data deliverables (EDDs) for these SDGs were provided by the laboratory and data validator qualifiers were entered. In some cases, different chemical synonyms are used between the EDD and the hardcopy however associated Chemical Abstracts Service (CAS) numbers are provided in the EDD to confirm chemical identifications.

Compound Identification and Quantitation Limits

Results of the analyses were reported based on laboratory RDLs for all compounds. RDLs for selected compounds are elevated due to method-required dilutions. No action is taken other than to note this.

Data Assessment

The laboratory data reported for this project were reviewed based on the criteria outlined in:

- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2017); and
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA, 2017).

Data qualifiers are assigned and laboratory report pages with qualifiers are attached. All data, including qualified data, are judged to be acceptable for their intended use.

MEMORANDUM

TO: Project File **DATE:** December 2, 2019
FROM: Jessie Compeau
SUBJECT: Laboratory Data Validation Review
PROJECT: American Linen Data Validation
PROJECT #: 1413.001.02.501E
TASK: EIM Data Validation Level EPA2A for October 2019 – Groundwater Samples
LAB: Pace Sample Delivery Groups (SDGs): L1148900, L1149387, L1149851, and L1150336

Thirty-six (36) groundwater samples (including two field duplicates), one (1) equipment blank, and four (4) trip blanks were collected as part of the Remedial Investigation (RI) sampling event at the Former American Linen Supply Site, in Seattle, Washington, October 10, 11, 14, and 15, 2019. The samples were shipped and delivered to Pace Lab Sciences (Pace) of Mount Juliet, TN for laboratory analysis. Selected samples were analyzed for the following:

- Volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method 8260C;
- Total petroleum hydrocarbons as gasoline (TPH-Gx) by NWTPH-Gx per analytical method stipulated by Washington State Department of Ecology;
- VOCs (dissolved gases – methane, ethane, and ethene) by EPA SOP RSK 175;
- Alkalinity by Method 2320 B-2011;
- Anions (chloride, nitrate, and sulfate) by USEPA Method 9056A;
- Total Organic Carbon (TOC) by USEPA Method 9060A; and
- Metals (iron and manganese) by USEPA Method 6020B.

The RI sampling was conducted during the month of October and results are reported in multiple SDGs from Pace. Pace SDGs are reviewed in groups of approximately 2-4 per each data validation report. Group 2 analytical results are reported in SDGs L1148900, L1149387, L1149851, and L1150336. The quality assurance review of the laboratory data associated with Group 2 is summarized below.

DATA QUALIFICATIONS

Guidelines established by USEPA for a limited data validation review of analytical data along with Pace control limit criteria were used to validate the data. The comments presented in this memorandum refer to the laboratory's performance in meeting the quality control criteria outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2017) and USEPA Contract Laboratory

Program National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA, 2017). Following Guidelines, non-project-specific laboratory duplicates and matrix spike results were not evaluated as part of this data validation.

DATA VALIDATION

Completeness

All samples were collected and analyzed as requested with the following discussions:

- SDG L1148900: Review of the chain of custody (COC) shows that sample MW108-101019 was reported as MW-108-101019.
- SDGs L1148900 and L1150336: Dates of sample collection are listed on the first and last row of the laboratory provided COCs only. Sample collection dates may be confirmed using sample identification and field notes. Date of collection should be indicated on the COC for each sample via drop arrow or date per sample.

Sample Collection and Preservation

Samples were collected in laboratory-supplied sample containers preserved as appropriate for the individual analyses conducted. The samples were packed on ice in coolers and delivered by courier to the analytical laboratory. The laboratory reported that the coolers were received at a cooler temperature less than the recommended temperature preservation of 6°C. Samples were received in good condition. No data were qualified based upon the sample collection and preservation information.

Holding Times

USEPA Method 8260C:

All samples were analyzed for VOCs within the EPA recommended holding time of fourteen days for preserved waters from the date of collection. All holding time criteria are met.

NWTPH-Gx Method:

All samples were analyzed within the WA State recommended holding time of fourteen days for preserved waters from the date of sample collection. All holding time criteria are met.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

All samples were analyzed within the WA State recommended holding time of fourteen days for preserved waters from the date of sample collection. All holding time criteria are met.

USEPA Method 6020B:

All samples were analyzed within the USEPA recommended holding time for iron and manganese of 180 days for preserved waters from the date of sample collection. All holding time criteria are met.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

All samples were analyzed within the USEPA recommended holding time for alkalinity (14 days), chloride (28 days), sulfate (28 days), and nitrate (48 hours), and TOC (28 days) for preserved waters from the date of sample collection. All holding time criteria are met.

Initial and Continuing Calibration

Calibration data for this project are not required for this deliverable however PACE's notes indicate the following:

- SDGs L1148900, L1149387, L1149851, and L1150336 - *USEPA Method 8260C*: Continuing calibration verification (CCV) issues were noted by Pace for compounds associated with the trip blanks. The compounds are qualified by the laboratory "J0" to indicate that percent difference CCV is outside of laboratory acceptance criteria. No action is taken other than to note this.
- SDGs L1148900, L1149387, L1149851, and L1150336 - *USEPA Method 8260C*: Continuing calibration verification (CCV) issues were noted by Pace for multiple compounds associated with analytical batches in each SDG. These compounds are qualified by the laboratory "J0" to indicate that percent difference CCV is outside of laboratory acceptance criteria. Associated sample results with laboratory qualified (J0) results are estimated and qualified (J/UJ) however in some cases blank contamination qualifiers may supersede these qualifiers. Refer to Method Blank and/or Trip Blank sections of this report for additional details.

Method Blank Results

USEPA Method 8260C:

Laboratory method blanks were included with the analytical batches per method requirement. The target analytes were not detected in the method blanks at or above the reporting detection limits (RDLs) with the following exceptions:

- SDG L1148900 – Analytical batch WG1366289: A low level of naphthalene and is detected in the method blank. **Sample MW-108-101019 naphthalene detection is below the RDL and qualified as not detected (U).**
- SDG L1148900 – Analytical batch WG1366370: Low levels of hexachloro-1,3-butadiene, iodomethane, naphthalene, 1,2,3-trichlorobenzene, and 1,2,4-trichlorobenzene are detected in the method blank. No action is taken for these compounds as they are not detected in associated with one exception; naphthalene. **Naphthalene detection in sample MW-8-101019 is below the RDL and qualified as not detected (U).**
- SDG L1149851 – Analytical batch WG1368672: Low levels of tetrachloroethene and trichloroethene are detected in the method blank. No action is taken for as these compounds are not detected in the associated trip blank sample TB-101419.
- SDG L1150336 – Analytical batch WG1368527: A low level of hexachloro-1,3-butadiene, naphthalene, and 1,2,3-trichlorobenzene are detected in the method blank. No action is taken for these compounds as they are not detected in the associated samples.

- SDG L1150336 – Analytical batch WG1369955: A low level of hexachloro-1,3-butadiene is detected in the method blank. No action is taken since this compound is not detected in the associated samples.

NWTPH-Gx Method:

Laboratory method blanks were included with the analytical batches per method requirement. The target analyte (gasoline) was not detected in the method blanks at or above the RDLs with the following exceptions:

- SDG L1149851– Analytical batch WG1367521: A low level of gasoline is detected in the method blank. **Associated gasoline detection in sample MW-161-101419 is below the RDL and qualified as not detected (U).**

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

Laboratory method blanks were included with the analytical batches per method requirement. The target analytes (dissolved gases) are not detected in the method blanks at or above the RDLs.

USEPA Method 6020B and General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

Laboratory method blanks were included with the analytical batches per method requirement. The target analytes were detected in the method blanks below the RDLs. Per Guidance, no action is taken for blank detections less than the RDL when associated sample detections are greater than the RDL. General chemistry and metal blank detections are shown below:

SDG	Batch	Method	Analyte	Method Blank Result	Qualifier	RDL	Units	Associated Result(s) Qualified
L1148900	WG1364209	SM2320B	Alkalinity as CaCO ₃ , Total	5440	J	20000	ug/L	NO
L1148900	WG1364211	SM2320B	Alkalinity as CaCO ₃ , Total	5510	J	20000	ug/L	NO
L1148900	WG1361291	9060A	TOC	662	J	1000	ug/L	NO
L1148900	WG1363727	6020B	Manganese	0.691	J	5.00	ug/L	NO
L1149387	WG1365100	SM2320B	Alkalinity as CaCO ₃ , Total	4330	J	20000	ug/L	NO
L1149387	WG1361957	9056A	Chloride	79.3	J	1000	ug/L	NO
L1149387	WG1361957	9056A	Sulfate	1390	J	5000	ug/L	NO
L1149387	WG1364227	9060A	TOC	416	J	1000	ug/L	NO
L1149387	WG1364591	6020B	Manganese	1.01	J	5.00	ug/L	NO
L1149851	WG1365104	SM2320B	Alkalinity as CaCO ₃ , Total	3710	J	20000	ug/L	NO
L1147791	WG1363090	9056A	Chloride	61.6	J	1000	ug/L	NO
L1147791	WG1363090	9056A	Sulfate	107	J	5000	ug/L	NO
L1147791	WG1364227	9060A	TOC	416	J	1000	ug/L	NO
L1147791	WG1364260	9060A	TOC	422	J	1000	ug/L	NO
L1147791	WG1364629	6020B	Manganese	0.540	J	5.00	ug/L	NO
L1147791	WG1362294	9060A	TOC	662	J	1000	ug/L	NO
L1150336	WG1366027	SM2320B	Alkalinity as CaCO ₃ , Total	3910	J	20000	ug/L	NO
L1150336	WG1366029	SM2320B	Alkalinity as CaCO ₃ , Total	4460	J	20000	ug/L	NO
L1150336	WG1363847	9056A	Sulfate	86.7	J	5000	ug/L	NO
L1150336	WG1365601	9060A	TOC	581	J	1000	ug/L	NO
L1150336	WG1364631	6020B	Manganese	0.261	J	5.00	ug/L	NO

Trip Blank Results

USEPA Method 8260C and NWTPH-Gx:

Four trip blanks were collected and submitted for analysis. The target analytes were not detected in the trip blanks at or above the reporting detection limits (RDLs) with the following exceptions:

- SDG L1149851 – Analytical batch WG1369459: A low level of acetone and is detected in the trip blank. **Acetone is detected below the RDL in sample MW-111-101419 and is qualified as not detected (U).**
- SDG L1150336 – Analytical batch WG1368527: Low levels of carbon disulfide, trans-1,2-dichloroethene, and naphthalene are detected in the trip blank. **Carbon disulfide is detected below the RDL in sample MW-107-101519 and is qualified as not detected (U).** No action is taken for compounds detected above the RDL.

Field, Rinsate, or Equipment Blank Results

All Analytical Methods:

One equipment blank (EQ-101119 from SDG L1149387) was collected and analyzed for VOCs, gasoline, dissolved gases (methane, ethane, and ethene), metals (iron and manganese), wet chemistry parameters (alkalinity, chloride, nitrate, sulfate, and TOC). Review of the equipment blank results are as follows:

- SDG L1149387: An equipment blank sample (EQ-101119) was collected on October 11, 2019 from the bladder pump associated with samples MW124-101119 and MW-307-101119. The target analytes were not detected in the equipment blank at or above the RDLs with the following exceptions:
 - Low levels of chloroform, alkalinity, chloride, TOC, iron, and manganese are detected in the equipment blank. No action was taken on this basis since associated detections are either above the RDL or are not detected.
 - Methane is detected in the equipment blank and associated samples as shown below:

Sample ID	Methane (0.678 ug/L RDL)
EQ-101119	24.2
MW124-101119	12.3
MW-307-101119	26.6

- SDG L1149387: Methane qualifiers are assigned as follows:
 - **Sample MW-307-101119 methane detection is slightly greater than the equipment blank concentration and is estimated with high bias (J+).**
 - **Sample MW124-101119 methane detection is less than the equipment blank concentration and qualified as not detected (U).**

Commented [JC1]: PES – please review historical results for input since this result may also be J+.

Field Duplicate Analyses

Field duplicate pairs were submitted and analyzed. Field duplicate sample pair is as follows:

- SDG L1149387: Samples MW-128-101119 and MW-916-101119; and
- SDG L1150336: Samples MW-126-101519 and MW-917-101519.

Target analyte results are comparable and within a relative percent difference (RPD) of 30% (\pm 1x RDL for groundwater results <5X the RDL) for the field duplicate pair with the following exceptions:

- SDG L1149387: **Samples MW-128-101119 and MW-916-101119 sulfate, ethane, ethene, and VOC compound vinyl chloride RPD results are greater than 30% and qualified as estimated (J/UJ).**

Laboratory Duplicate Analyses

USEPA Method 8260C:

Laboratory duplicate samples were not analyzed. Refer to laboratory control sample/sample duplicate (LCS/LCSD) or matrix spike/matrix spike duplicate (MS/MSD) results for precision data.

NWTPH-Gx Method:

A laboratory duplicate sample was not analyzed. Refer to LCS/LCSD or MS/MSDs results for precision data.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

Laboratory duplicate sample analyses were performed on client and non-client samples within the analytical batches. The primary/duplicate RPDs for dissolved gas analyses are within the laboratory control limit of 20%.

USEPA Method 6020B:

Laboratory duplicate samples were not analyzed. Refer to LCS/LCSD or MS/MSD results for precision data.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

Laboratory duplicate sample analyses were performed on client samples and/or on non-client samples. The primary/duplicate RPDs for general chemistry parameters are within the laboratory control limits with the following discussion:

- SDG L1149387: Anion (chloride, sulfate and nitrate) laboratory duplicate was performed on the equipment blank with elevated RPDs on chloride and nitrate. No action is taken since the results are less than 5X the RDL and absolute differences are <1X the RDL.
- SDG L1149851: Sulfate laboratory duplicate was performed on a non-client sample within the analytical batch. RPD result is qualified by the laboratory to indicate that the sample result exceeds the upper limit of the calibration curve. No action is taken other

than to note that the laboratory performed more than one laboratory duplicate and precision results are acceptable.

Surrogate Recoveries

USEPA Method 8260C:

The surrogate recovery results for the samples, laboratory control samples, matrix spike samples, trip blanks, and the method blanks are within the laboratory surrogate control limits for all the analyses.

NWTPH-Gx Method:

The surrogate recovery results for the samples, laboratory control samples, matrix spike samples, trip blanks, equipment blank, and the method blanks are within the laboratory surrogate control limits for all analyses.

Laboratory Control Samples

USEPA Method 8260C:

Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) or laboratory control sample (LCS) were analyzed by USEPA Method 8260C method. The LCS % Rs or LCS/LCSD % Rs and RPDs for the all target compounds are within the laboratory control criteria for waters with the following discussions:

- SDG L1148900 - Analytical batch WG1366370. LCS hexachloro-1,3-butadiene recovery is above laboratory acceptance criteria and laboratory qualified (J4). No action is taken on this basis since hexachloro-1,3-butadiene was not detected in sample MW-8-101019.
- SDG L1148900 - LCSDs were not analyzed. Refer to the matrix spike data or field duplicate data for precision data.
- SDG L1149851 - Analytical batch WG1368672. LCS vinyl acetate recovery is above laboratory acceptance criteria and laboratory qualified (J4). No action is taken on this basis vinyl acetate was not detected in the associated trip blank.
- SDG L1150336 - Analytical batch WG1368527. LCS 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,3-dichloropropene and 1,1,2-trichloroethane recoveries are below laboratory acceptance criteria and laboratory qualified (J4). No action is taken on this basis for 1,4-dichlorobenzene since recovery is 78.8% and just below the control limit criteria of 79 – 120%. **All associated 1,3-dichlorobenzene, 1,3-dichloropropene, and 1,1,2-trichloroethane results are estimated and qualified (UJ/J).** Refer to initial and continuing calibration section for additional information.

NWTPH-Gx Method:

The LCS % Rs for the target compound (gasoline) are within the laboratory control criteria for waters.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

The LCS/LCSD % Rs and RPDs for the target compound (dissolved gases) are within the laboratory control criteria for waters.

USEPA Method 6020B:

The LCS/LCSD % Rs and RPDs for the target compound (iron and manganese) are within the laboratory control criteria for waters.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

The LCS % Rs for general chemistry parameters are within the laboratory control criteria for waters.

Matrix Spike/Matrix Spike Duplicates

USEPA Method 8260C:

Matrix spike/matrix spike duplicate (MS/MSD) analyses were performed on sample MW-8-101019 (SDG L1148900). The MS/MSD %Rs and RPDs for the all target compounds are within the laboratory control criteria for waters. In cases where matrix spike analyses were not performed refer to LCS results and field duplicate samples for accuracy and precision data.

NWTPH-Gx Method:

MS/MSD analyses were not performed. Refer to LCS results and field duplicate samples for accuracy and precision data.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

MS/MSD analyses were not performed. Refer to LCS/LCSD and laboratory duplicate results for accuracy and precision data.

- SDG L1149851: MS analysis was performed on a non-client sample. MS non-client sample results for methane is qualified (E) by the laboratory to indicate that the spiked analyte concentration exceeded the upper calibration range. Refer to LCS/LCSD and laboratory duplicate results for accuracy and precision data.
- SDG L1150336: MS/MSD analyses was performed on a non-client sample. MS non-client sample results for methane is qualified (V) by the laboratory to indicate that the sample amount is greater than 4X the spike amount. In addition, ethene result is laboratory qualified (J5) due to matrix interference. Refer to LCS/LCSD and laboratory duplicate results for accuracy and precision data.

USEPA Method 6020B:

MS/MSD analyses were performed on client and non-client samples within the analytical batches. The MS/MSD % Rs and RPD were acceptable and within laboratory control limit criteria for water samples.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

MS/MSD analyses were performed on client and/or non-client samples within the analytical batches. In cases where MS/MSD spike analyses are not performed refer to LCS/LCSD or laboratory duplicate data for accuracy and precision data. The MS/MSD % Rs and RPDs are

acceptable and within laboratory control limit criteria for water samples with the following exceptions:

- SDGs L1148900 and L1149851: The MS and MS/MSD analyses were performed on two non-client samples. MS/MSD non-client sample results for chloride are qualified (EV) by the laboratory to indicate that the spiked analyte concentration exceeded the upper calibration range and sample amount was greater than 4X the spike amount. Refer to LCS and laboratory duplicate results for accuracy and precision data.
- SDG L1149851: MS analysis was performed on a non-client sample. MS non-client sample results for nitrate is qualified (E) by the laboratory to indicate that the spiked analyte concentration exceeded the upper calibration range. Refer to LCS and laboratory duplicate results for accuracy and precision data.
- SDG L1150336: The MS/MSD analyses were performed on a non-client sample. MS/MSD non-client sample results for chloride are qualified (E) by the laboratory to indicate that the spiked analyte concentration exceeded the upper calibration range. Refer to LCS and laboratory duplicate results for accuracy and precision data.

Other Quality Control Issues

No laboratory quality control issues were identified in the laboratory report with the following discussions:

- Multiple SDGs: Selected sample narratives for alkalinity results indicate that several sample containers had some headspace and exposure to air may have impacted the reported results. No action was taken other than to note this.
- Electronic data deliverables (EDDs) for these SDGs were provided by the laboratory and data validator qualifiers were entered. In some cases, different chemical synonyms are used between the EDD and the hardcopy however associated Chemical Abstracts Service (CAS) numbers are provided in the EDD to confirm chemical identifications.

Compound Identification and Quantitation Limits

Results of the analyses were reported based on laboratory RDLs for all compounds. RDLs for selected compounds are elevated due to method-required dilutions. No action is taken other than to note this.

Data Assessment

The laboratory data reported for this project were reviewed based on the criteria outlined in:

- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2017); and
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA, 2017).

Data qualifiers are assigned and laboratory report pages with qualifiers are attached. All data, including qualified data, are judged to be acceptable for their intended use.

MEMORANDUM

TO: Project File **DATE:** December 9, 2019

FROM: Jessie Compeau

SUBJECT: Laboratory Data Validation Review

PROJECT: American Linen Data Validation

PROJECT #: 1413.001.02.501E

TASK: EIM Data Validation Level EPA2A for October 2019 – Groundwater Samples

LAB: Pace Sample Delivery Groups (SDGs): L1150936, L1151401, L1151886, and L1152333

Twenty-one (21) groundwater samples (including one field duplicate), one (1) equipment blank, and four (4) trip blanks were collected as part of the Remedial Investigation (RI) sampling event at the Former American Linen Supply Site, in Seattle, Washington, October 16-18, and 21, 2019. The samples were shipped and delivered to Pace Lab Sciences (Pace) of Mount Juliet, TN for laboratory analysis. Selected samples were analyzed for the following:

- Volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method 8260C;
- Total petroleum hydrocarbons as gasoline (TPH-Gx) by NWTPH-Gx per analytical method stipulated by Washington State Department of Ecology;
- VOCs (dissolved gases – methane, ethane, and ethene) by EPA SOP RSK 175;
- Alkalinity by Method 2320 B-2011;
- Anions (chloride, nitrate, and sulfate) by USEPA Method 9056A;
- Total Organic Carbon (TOC) by USEPA Method 9060A; and
- Metals (iron and manganese) by USEPA Method 6020B.

The RI sampling was conducted during the month of October and results are reported in multiple SDGs from Pace. Pace SDGs are reviewed in groups of approximately 2-4 per each data validation report. Group 3 analytical results are reported in SDGs L1150936, L1151401, L1151886, and L1152333. The quality assurance review of the laboratory data associated with Group 3 is summarized below.

DATA QUALIFICATIONS

Guidelines established by USEPA for a limited data validation review of analytical data along with Pace control limit criteria were used to validate the data. The comments presented in this memorandum refer to the laboratory's performance in meeting the quality control criteria outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2017) and USEPA Contract Laboratory

Program National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA, 2017). Following Guidelines, non-project-specific laboratory duplicates and matrix spike results were not evaluated as part of this data validation.

DATA VALIDATION

Completeness

All samples were collected and analyzed as requested.

Sample Collection and Preservation

Samples were collected in laboratory-supplied sample containers preserved as appropriate for the individual analyses conducted. The samples were packed on ice in coolers and delivered by courier to the analytical laboratory. The laboratory reported that the coolers were received at a cooler temperature less than the recommended temperature preservation of 6°C. Samples were received in good condition. No data were qualified based upon the sample collection and preservation information.

Holding Times

USEPA Method 8260C:

All samples were analyzed for VOCs within the EPA recommended holding time of fourteen days for preserved waters from the date of collection. All holding time criteria are met.

NWTPH-Gx Method:

All samples were analyzed within the WA State recommended holding time of fourteen days for preserved waters from the date of sample collection. All holding time criteria are met.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

All samples were analyzed within the WA State recommended holding time of fourteen days for preserved waters from the date of sample collection. All holding time criteria are met.

USEPA Method 6020B:

All samples were analyzed within the USEPA recommended holding time for iron and manganese of 180 days for preserved waters from the date of sample collection. All holding time criteria are met.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

All samples were analyzed within the USEPA recommended holding time for alkalinity (14 days), chloride (28 days), sulfate (28 days), and nitrate (48 hours), and TOC (28 days) for preserved waters from the date of sample collection. All holding time criteria are met.

Initial and Continuing Calibration

Calibration data for this project are not required for this deliverable however Pace's notes indicate the following:

- SDGs L1150936, L1151401, L1151886, and L1152333 - *USEPA Method 8260C*: Continuing calibration verification (CCV) issues were noted by Pace for compounds associated with the trip blanks. The compounds are qualified by the laboratory “J0” to indicate that percent difference CCV is outside of laboratory acceptance criteria. No action is taken other than to note this.
- SDGs L1150936, L1151401, L1151886, and L1152333 - *USEPA Method 8260C*: Continuing calibration verification (CCV) issues were noted by Pace for multiple compounds associated with analytical batches in each SDG. These compounds are qualified by the laboratory “J0” to indicate that percent difference CCV is outside of laboratory acceptance criteria. Associated sample results with laboratory qualified (J0) results are estimated and qualified (J/UJ) however in some cases blank contamination qualifiers may supersede these qualifiers. Refer to Method Blank and/or Trip Blank sections of this report for additional details.

Method Blank Results

USEPA Method 8260C:

Laboratory method blanks were included with the analytical batches per method requirement. The target analytes were not detected in the method blanks at or above the reporting detection limits (RDLs) with the following exceptions:

- SDGs L1150936 and L1151401 – Analytical batch WG1369955: A low level of hexachloro-1,3-butadiene is detected in the method blank. No action is taken since this compound is not detected in the associated samples.
- SDGs L1150936 and L1151886 – Analytical batch WG1370189: Low levels of naphthalene and 1,2,3-trichlorobenzene are detected in the method blank. No action is taken since this compound is not detected in the associated samples.
- SDG L1151401 – Analytical batch WG1370146: Low levels of acetone, naphthalene and 1,2,3-trichlorobenzene are detected in the method blank. For sample MW-918-101719 no action is taken for acetone since analytical batch WG1369955 is associated with the acetone detection in this sample. No action is required for sample MW-120-101719 since acetone was not detected in sample. No action is taken for naphthalene and 1,2,3-trichlorobenzene compounds as these are not detected in the associated samples.

NWTPH-Gx Method:

Laboratory method blanks were included with the analytical batches per method requirement. The target analyte (gasoline) was not detected in the method blanks at or above the RDLs with the following exceptions:

- SDG L1151401– Analytical batch WG1367716: A low level of gasoline is detected in the method blank. **Associated gasoline detection in sample MW-9-101719 is below the RDL and qualified as not detected (U).**

- SDG L1151401– Analytical batch WG1369652: A low level of gasoline is detected in the method blank. No action is taken since this compound is not detected in sample MW-120-101719.
- SDG L1152333– Analytical batch WG1373020: A low level of gasoline is detected in the method blank. **Associated gasoline detection in sample MW-112-102119 is below the RDL and qualified as not detected (U).**

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

Laboratory method blanks were included with the analytical batches per method requirement. The target analytes (dissolved gases) are not detected in the method blanks at or above the RDLs.

USEPA Method 6020B and General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

Laboratory method blanks were included with the analytical batches per method requirement. The target analytes were detected in the method blanks below the RDLs. Per Guidance, no action is taken for blank detections less than the RDL when associated sample detections are greater than the RDL. General chemistry and metal blank detections are shown below:

SDG	Batch	Method	Analyte	Method Blank Result	Qualifier	RDL	Units	Associated Result(s) Qualified
L1150936	WG1366946	SM2320B	Alkalinity as CaCO ₃ , Total	3840	J	20000	ug/L	NO
L1150936	WG1364616	9056A	Chloride	112	J	1000	ug/L	NO
L1150936	WG1364616	9056A	Sulfate	80.2	J	5000	ug/L	NO
L1150936	WG1365383	9060A	TOC	666	J	1000	ug/L	NO
L1151401	WG1367736	SM2320B	Alkalinity as CaCO ₃ , Total	4070	J	20000	ug/L	NO
L1151401	WG1367168	9060A	TOC	655	J	1000	ug/L	NO
L1151401	WG1366327	6020B	Manganese	1.67	J	5.00	ug/L	NO
L1151886	WG1368322	9060A	TOC	375	J	1000	ug/L	NO
L1151886	WG1366331	6020B	Manganese	0.390	J	5.00	ug/L	NO
L1152333	WG1368783	9060A	TOC	277	J	1000	ug/L	NO
L1152333	WG1370126	9060A	TOC	434	J	1000	ug/L	NO
L1152333	WG1368592	6020B	Manganese	0.346	J	5.00	ug/L	NO

Trip Blank Results

USEPA Method 8260C and NWTPH-Gx:

Four trip blanks were collected and submitted for analysis. The target analytes were not detected in the trip blanks at or above the reporting detection limits (RDLs) with the following exceptions:

- SDG L1150936 – Analytical batch WG1370189: Low levels of acetone and trans-1,2-dichloroethene are detected in the trip blank. **Acetone is detected below the RDL in samples MW-155-101619, MW-142-101619, and MW-143-101619. Acetone detections are qualified as not detected (U). trans-1,2-Dichloroethene is detected below the RDL in samples MW-155-101619 and MW-142-101619. These detections are qualified as not detected (U).**

- SDG L1151401 – Analytical batch WG1369955: Low levels of acetone and carbon disulfide are detected in the trip blank. **Acetone is detected below the RDL in samples MW-918-101719, MW-156-101719, MW-160-101719, and MW-127-101719 and these results are qualified as not detected (U).** No action is required for carbon disulfide as it was not detected in the associated samples.

Field, Rinsate, or Equipment Blank Results

All Analytical Methods:

One equipment blank (EQ-101619 from SDG L1150936) was collected and analyzed for VOCs, gasoline, dissolved gases (methane, ethane, and ethene), metals (iron and manganese), wet chemistry parameters (alkalinity, chloride, nitrate, sulfate, and TOC). Review of the equipment blank results are as follows:

- SDG L1150936: An equipment blank sample (EQ-101619) was collected on October 16, 2019 from the bladder pump associated with all samples in SDG L1150936. The target analytes were not detected in the equipment blank at or above the RDLs with the following exceptions:
 - Low levels of alkalinity, chloride, sulfate, TOC, iron, and manganese are detected in the equipment blank. No action was taken on this basis since associated detections are either above the RDL or are not detected.
 - Low levels of acetone and chloroform are detected in the equipment blank. **Acetone is detected below the RDL in samples MW-155-101619, MW-142-101619, and MW-143-101619 are qualified as not detected (U) due to blank contamination.** No action was taken for chloroform since it was not detected in the associated samples.

Field Duplicate Analyses

Field duplicate pairs were submitted and analyzed. Field duplicate sample pair is as follows:

- SDG L1151401: Samples MW120-101719 and MW-918-101719

Target analyte results are comparable and within a relative percent difference (RPD) of 30% (\pm 1x RDL for groundwater results <5X the RDL) for the field duplicate pair with the following exceptions:

- **SDG L1151401: Samples MW120-101719 and MW-918-101719 methane, and 1,2-dichloropropane RPD results are greater than 30% and qualified as estimated (J/UJ).**

Laboratory Duplicate Analyses

USEPA Method 8260C:

Laboratory duplicate samples were not analyzed. Refer to laboratory control sample/sample duplicate (LCS/LCSD) or matrix spike/matrix spike duplicate (MS/MSD) results for precision data.

NWTPH-Gx Method:

Laboratory duplicate samples were not analyzed. Refer to laboratory control sample/sample duplicate (LCS/LCSD) or matrix spike/matrix spike duplicate (MS/MSD) results for precision data.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

Laboratory duplicate sample analyses were performed on client and non-client samples within the analytical batches. The primary/duplicate RPDs for dissolved gas analyses are within the laboratory control limit of 20%.

USEPA Method 6020B:

Laboratory duplicate samples were not analyzed. Refer to LCS/LCSD or MS/MSD results for precision data.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

Laboratory duplicate sample analyses were performed on client samples and/or on non-client samples. The primary/duplicate RPDs for general chemistry parameters are within the laboratory control limits with the following discussions:

- SDG L1150936: Chloride laboratory duplicate was performed on a non-client sample within the analytical batch. RPD result is qualified (E) by the laboratory to indicate that the sample result exceeds the upper limit of the calibration curve. No action is taken other than to note that the laboratory performed more than one laboratory duplicate and precision results are acceptable.
- SDG L1151886: Chloride and sulfate laboratory duplicate analyses were performed on a non-client sample within the analytical batch. RPD result is qualified (E) by the laboratory to indicate that the sample result exceeds the upper limit of the calibration curve. No action is taken other than to note that the laboratory performed more than one laboratory duplicate and precision results are acceptable.
- SDG L1152333: Sulfate duplicate analysis was performed on a non-client sample with poor RPD result. No action is taken since the other batch QC laboratory duplicate result is within criteria.

Surrogate Recoveries

USEPA Method 8260C:

The surrogate recovery results for the samples, laboratory control samples, matrix spike samples, trip blanks, equipment blank, and the method blanks are within the laboratory surrogate control limits for all the analyses.

NWTPH-Gx Method:

The surrogate recovery results for the samples, laboratory control samples, matrix spike samples, trip blanks, equipment blank, and the method blanks are within the laboratory surrogate control limits for all analyses.

Laboratory Control Samples

USEPA Method 8260C:

Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) or laboratory control sample (LCS) were analyzed by USEPA Method 8260C method. The LCS % Rs or LCS/LCSD % Rs and RPDs for the all target compounds are within the laboratory control criteria for waters with the following discussion:

- SDG L1152333 - Analytical batch WG1371177. LCS % recoveries for acetone, acrylonitrile, bromodichloromethane, and 1,1,1-trichloroethane recovery are above laboratory acceptance criteria and laboratory qualified (J4). Acetone and acrylonitrile LCS results are within recovery criteria and are incorrectly qualified (J4) by Pace. No action is taken other than to line out these qualifiers (J4) on the Form 1s and remove laboratory qualifications from the EDD results. No action is taken for bromodichloromethane, and 1,1,1-trichloroethane since these compounds are not detected in the associated samples.

NWTPH-Gx Method:

The LCS or LCS/LCSD % Rs and RPDs for the target compound (gasoline) are within the laboratory control criteria for waters.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

The LCS/LCSD % Rs and RPDs for the target compound (dissolved gases) are within the laboratory control criteria for waters.

USEPA Method 6020B:

The LCS/LCSD % Rs and RPDs for the target compound (iron and manganese) are within the laboratory control criteria for waters.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

The LCS % Rs for general chemistry parameters are within the laboratory control criteria for waters.

Matrix Spike/Matrix Spike Duplicates

USEPA Method 8260C:

Matrix spike/matrix spike duplicate (MS/MSD) analyses were not performed. Refer to LCS results and field duplicate samples for accuracy and precision data.

NWTPH-Gx Method:

MS/MSD analyses were performed on a non-client sample. In cases where matrix spike analyses were not performed refer to LCS results and field duplicate samples for accuracy and precision data. The MS/MSD %Rs and RPDs for the all target compounds are within the laboratory control criteria for waters with the following discussion:

- SDG L1150936: Spike was performed on a non-client sample. MS/MSD RPD is qualified (J3) because it exceeded QC criteria. No action is taken on this basis.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

MS/MSD analyses were performed on non-client samples. In cases where matrix spike analyses were not performed refer to LCS results and field duplicate samples for accuracy and precision data. The MS/MSD %Rs and RPDs for the all target compounds are within the laboratory control criteria for waters with the following discussions:

- SDG L1150936: MS/MSD analysis was performed on a non-client sample. MS/MSD non-client sample results for methane are qualified (V) by the laboratory to indicate that the sample concentration was far greater than the spike concentration. Refer to LCS/LCSD and laboratory duplicate results for accuracy and precision data.
- SDG L1151886: MS/MSD analyses was performed on a non-client sample. MS non-client sample results for methane are qualified (V) by the laboratory to indicate that the sample amount is greater than 4X the spike amount. In addition, ethene result is laboratory qualified (J5) due to matrix interference. Refer to LCS/LCSD and laboratory duplicate results for accuracy and precision data.

USEPA Method 6020B:

MS/MSD analyses were performed on client and non-client samples within the analytical batches. The MS/MSD % Rs and RPD were acceptable and within laboratory control limit criteria for water samples.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

MS/MSD analyses were performed on client and/or non-client samples within the analytical batches. In cases where MS/MSD spike analyses are not performed refer to LCS/LCSD or laboratory duplicate data for accuracy and precision data. The MS/MSD % Rs and RPDs are acceptable and within laboratory control limit criteria for water samples with the following exceptions:

- SDG L1150936: The MS/MSD analyses were performed on client sample MW-155-101619. MS/MSD non-client sample results for sulfate are qualified (E) by the laboratory to indicate that the spiked analyte concentration exceeded the upper calibration range. No action is taken other than to note this. Refer to LCS and laboratory duplicate results for accuracy and precision data.
- SDG L1150936: MS analysis was performed on a non-client sample. MS non-client sample result for chloride is qualified (E) by the laboratory to indicate that the spiked analyte concentration exceeded the upper calibration range. Refer to LCS and laboratory duplicate results for accuracy and precision data.
- SDG L1151886: MS/MSD non-client sample results for chloride and sulfate are qualified (EV) by the laboratory to indicate that the spiked analyte concentrations exceeded the upper calibration range and sample amounts are greater than 4X the spike amount. Refer to LCS and laboratory duplicate results for accuracy and precision data.

Other Quality Control Issues

No laboratory quality control issues were identified in the laboratory report with the following discussions:

- Multiple SDGs: Selected sample narratives for alkalinity results indicate that several sample containers had some headspace and exposure to air may have impacted the reported results. No action was taken other than to note this.
- Electronic data deliverables (EDDs) for these SDGs were provided by the laboratory and data validator qualifiers were entered. In some cases, different chemical synonyms are used between the EDD and the hardcopy however associated Chemical Abstracts Service (CAS) numbers are provided in the EDD to confirm chemical identifications.

Compound Identification and Quantitation Limits

Results of the analyses were reported based on laboratory RDLs for all compounds. RDLs for selected compounds are elevated due to method-required dilutions. No action is taken other than to note this with the following discussion:

- SDG L1151886: Sample W-MW-02-101819 NWTPH-Gx reporting limit is elevated due to a foamy sample matrix and necessary dilution (10X).

Data Assessment

The laboratory data reported for this project were reviewed based on the criteria outlined in:

- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2017); and
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA, 2017).

Data qualifiers are assigned and laboratory report pages with qualifiers are attached. All data, including qualified data, are judged to be acceptable for their intended use.

MEMORANDUM

TO: Project File **DATE:** December 9, 2019
FROM: Jessie Compeau
SUBJECT: Laboratory Data Validation Review
PROJECT: American Linen Data Validation
PROJECT #: 1413.001.02.501E
TASK: EIM Data Validation Level EPA2A for October 2019 – Groundwater Samples
LAB: Pace Sample Delivery Groups (SDGs): L1152340 and L1152823

Thirteen (13) groundwater samples (including two field duplicates), one (1) equipment blank, and two (4) trip blanks were collected as part of the Remedial Investigation (RI) sampling event at the Former American Linen Supply Site, in Seattle, Washington, October 21-22, 2019. The samples were shipped and delivered to Pace Lab Sciences (Pace) of Mount Juliet, TN for laboratory analysis. Selected samples were analyzed for the following:

- Volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method 8260C;
- Total petroleum hydrocarbons as gasoline (TPH-Gx) by NWTPH-Gx per analytical method stipulated by Washington State Department of Ecology;
- VOCs (dissolved gases – methane, ethane, and ethene) by EPA SOP RSK 175;
- Alkalinity by Method 2320 B-2011;
- Anions (chloride, nitrate, and sulfate) by USEPA Method 9056A;
- Total Organic Carbon (TOC) by USEPA Method 9060A; and
- Metals (iron and manganese) by USEPA Method 6020B.

The RI sampling was conducted during the month of October and results are reported in multiple SDGs from Pace. Pace SDGs are reviewed in groups of approximately 2-4 per each data validation report. Group 4 analytical results are reported in SDGs L1152340 and L1152823. The quality assurance review of the laboratory data associated with Group 4 is summarized below.

DATA QUALIFICATIONS

Guidelines established by USEPA for a limited data validation review of analytical data along with Pace control limit criteria were used to validate the data. The comments presented in this memorandum refer to the laboratory's performance in meeting the quality control criteria outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2017) and USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review

(USEPA, 2017). Following Guidelines, non-project-specific laboratory duplicates and matrix spike results were not evaluated as part of this data validation.

DATA VALIDATION

Completeness

All samples were collected and analyzed as requested with the following exceptions:

- SDG L1152823: Per PES, the trip blank could not be analyzed for USEPA Method 8260 due to container breakage. This information is not included in Pace's sample receiving notes. No action is taken other than to note that this has a limited to no impact to this sampling event.
- SDG L1152823: Sample MW-116-202219 volume was not available for VOC or NWTPH-Gx analysis. Chain of custody documentation indicates that all five vials were received empty. Sample MW-116 Sample MW-116 was resampled on October 31st and is included in SDG L1156109.

Sample Collection and Preservation

Samples were collected in laboratory-supplied sample containers preserved as appropriate for the individual analyses conducted. The samples were packed on ice in coolers and delivered by courier to the analytical laboratory. The laboratory reported that the coolers were received at a cooler temperature less than the recommended temperature preservation of 6°C. Samples were received in good condition except for issues mentioned in the Completeness section. No data were qualified based upon the sample collection and preservation information.

Holding Times

USEPA Method 8260C:

All samples were analyzed for VOCs within the EPA recommended holding time of fourteen days for preserved waters from the date of collection. All holding time criteria are met.

NWTPH-Gx Method:

All samples were analyzed within the WA State recommended holding time of fourteen days for preserved waters from the date of sample collection. All holding time criteria are met.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

All samples were analyzed within the WA State recommended holding time of fourteen days for preserved waters from the date of sample collection. All holding time criteria are met.

USEPA Method 6020B:

All samples were analyzed within the USEPA recommended holding time for iron and manganese of 180 days for preserved waters from the date of sample collection. All holding time criteria are met.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

All samples were analyzed within the USEPA recommended holding time for alkalinity (14 days), chloride (28 days), sulfate (28 days), and nitrate (48 hours), and TOC (28 days) for preserved waters from the date of sample collection. All holding time criteria are met.

Initial and Continuing Calibration

Calibration data for this project are not required for this deliverable however Pace's notes indicate the following:

- SDGs L1152340 and L1152823- *USEPA Method 8260C*: Continuing calibration verification (CCV) issues were noted by Pace for compounds associated with the trip blanks. The compounds are qualified by the laboratory "J0" to indicate that percent difference CCV is outside of laboratory acceptance criteria. No action is taken other than to note this.
- SDGs L1152340 and L1152823 - *USEPA Method 8260C*: Continuing calibration verification (CCV) issues were noted by Pace for multiple compounds associated with analytical batches in each SDG. These compounds are qualified by the laboratory "J0" to indicate that percent difference CCV is outside of laboratory acceptance criteria. Associated sample results with laboratory qualified (J0) results are estimated and qualified (J/UJ) however in some cases blank contamination qualifiers may supersede these qualifiers. Refer to Method Blank and/or Trip Blank sections of this report for additional details.

Method Blank Results

USEPA Method 8260C:

Laboratory method blanks were included with the analytical batches per method requirement. The target analytes were not detected in the method blanks at or above the reporting detection limits (RDLs) with the following exceptions:

- SDGs L1152340 and L1152823 – Analytical batch WG1371769: A low level of cis-1,2-dichloroethene is detected in the method blank. No action is taken since this compound is detected greater than the RDL in all associated samples.

NWTPH-Gx Method:

Laboratory method blanks were included with the analytical batches per method requirement. The target analyte (gasoline) was not detected in the method blanks at or above the RDLs with the following exceptions:

- SDG L1152340 – Analytical batch WG1371615: Gasoline is detected slightly above the RDL in the method blank and slightly below the RDL in the trip blank. **Associated gasoline detections in sample MW-302-102119, MW-304-102119, MW-303-102119, and R-MW5-102119 are below the RDL and are qualified as not detected (U).**
- SDG L1152340 – Analytical batch WG1373020: Gasoline is detected slightly below the RDL in the method and trip blanks. **Associated gasoline detection in sample MW-138-102119 is below the RDL and qualified as not detected (U).**

- SDG L1152823 – Analytical batch WG1371615: Gasoline is detected slightly above the RDL in the method blank and slightly below the RDL in both the equipment and trip blanks. **Associated gasoline detections in samples MW-105-102219 and MW-919-102219 are below the RDL and qualified as not detected (U).**
- SDG L1152823 – Analytical batch WG1373020: Gasoline is detected slightly below the RDL in the method and trip blanks. **Associated gasoline detections in samples MW-105-102219 and MW-919-102219 are below the RDL and qualified as not detected (U).**

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

Laboratory method blanks were included with the analytical batches per method requirement. The target analytes (dissolved gases) are not detected in the method blanks at or above the RDLs.

USEPA Method 6020B and General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

Laboratory method blanks were included with the analytical batches per method requirement. The target analytes were detected in the method blanks below the RDLs. Per Guidance, no action is taken for blank detections less than the RDL when associated sample detections are greater than the RDL. General chemistry and metal blank detections are shown below:

SDG	Batch	Method	Analyte	Method Blank Result	Qualifier	RDL	Units	Associated Result(s) Qualified
L1152340	WG1370125	9060A	TOC	304	J	1000	ug/L	NO
L1152340	WG1368592	6020B	Manganese	0.346	J	5.00	ug/L	NO
L1152823	WG1370126	9060A	TOC	434	J	1000	ug/L	NO
L1152823	WG1368595	6020B	Manganese	0.427	J	5.00	ug/L	NO

Trip Blank Results

USEPA Method 8260C and NWTPH-Gx:

Two trip blanks were collected and submitted for analysis. As mentioned earlier trip blank associated with SDG L1152823 was analyzed for NWTPH-Gx only. The target analytes were not detected in the trip blanks at or above the reporting detection limits (RDLs) with the following exceptions:

- SDG L1152340 – Analytical batch WG1371615: Gasoline is detected slightly above the RDL in the method blank and slightly below the RDL in the trip blank. **Associated gasoline detections in samples MW-302-102119, MW-304-102119, MW-303-102119, and R-MW5-102119 are below the RDL and are qualified as not detected (U).**
- SDG L1152823 – Analytical batch WG1371615: Gasoline is detected slightly above the RDL in the method blank and slightly below the RDL in both the equipment and trip blanks. **Associated gasoline detections in samples MW-105-102219 and MW-919-102219 is below the RDL and qualified as not detected (U).**

Field, Rinsate, or Equipment Blank Results

All Analytical Methods:

One equipment blank (EQ-102219 from SDG L1152823) was collected and analyzed for VOCs, gasoline, dissolved gases (methane, ethane, and ethene), metals (iron and manganese), wet chemistry parameters (alkalinity, chloride, nitrate, sulfate, and TOC). Review of the equipment blank results are as follows:

- SDG L1152823: An equipment blank sample (EQ-102219) was collected on October 22, 2019 from the bladder pump associated with samples BB-8-102219 and MW-105-102219, and their associated field duplicate samples (MW-918-102219 and MW-919-102219). The target analytes were not detected in the equipment blank at or above the RDLs with the following exceptions:
 - Low levels of alkalinity, chloride, sulfate, TOC, iron, and manganese are detected in the equipment blank. No action was taken on this basis since associated detections are either above the RDL or are not detected.
 - Low levels of acetone and chloroform are detected in the equipment blank. **Acetone is detected below the RDL in samples BB-8-102219, MW-918-102219, MW-105-102219, and MW-919-102219. Acetone detections are qualified as not detected (U) due to blank contamination.** No action was taken for chloroform since it was not detected in the associated samples.
 - Methane was detected at 32.7 µg/L and well above the RDL (0.678 µg/L) in the equipment blank. Methane was detected in samples BB-8-102219, MW-105-102219, and MW-919-102219. No action is taken is taken for samples MW-105-102219, and MW-919-102219 since methane detections are far greater than the methane detection in the equipment blank. **Sample BB-8-102219 methane result is estimated and qualified (J+) because it was detected at 74.8 µg/L, may have been impacted by the blank contamination, and was not detected in the associated field duplicate sample (MW-918-102219).**

Field Duplicate Analyses

Field duplicate pairs were submitted and analyzed. Field duplicate sample pair is as follows:

- SDG L1152823: Samples BB-8-102219 and MW-918-102219; and
- SDG L1152823: Samples MW-105-102219 and MW-919-102219

Target analyte results are comparable and within a relative percent difference (RPD) of 30% (\pm 1x RDL for groundwater results <5X the RDL) for the field duplicate pair with the following exceptions:

- **SDG L1152823: Samples BB-8-102219 and MW-918-102219 methane RPD results are greater than 30% and qualified as estimated (J+/UJ).**

Laboratory Duplicate Analyses

USEPA Method 8260C:

Laboratory duplicate samples were not analyzed. Refer to laboratory control sample/sample duplicate (LCS/LCSD) or matrix spike/matrix spike duplicate (MS/MSD) results for precision data.

NWTPH-Gx Method:

Laboratory duplicate samples were not analyzed. Refer to laboratory control sample/sample duplicate (LCS/LCSD) or matrix spike/matrix spike duplicate (MS/MSD) results for precision data.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

Laboratory duplicate sample analyses were performed on client and non-client samples within the analytical batches. The primary/duplicate RPDs for dissolved gas analyses are within the laboratory control limit of 20%.

USEPA Method 6020B:

Laboratory duplicate samples were not analyzed. Refer to LCS/LCSD or MS/MSD results for precision data.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

Laboratory duplicate sample analyses were performed on client samples and/or on non-client samples. The primary/duplicate RPDs for general chemistry parameters are within the laboratory control limits with the following discussions:

- SDG L1152340: Sulfate duplicate analysis was performed on a non-client sample with poor RPD result. No action is taken since the other batch QC laboratory duplicate result is within criteria.

Surrogate Recoveries

USEPA Method 8260C:

The surrogate recovery results for the samples, laboratory control samples, matrix spike samples, trip blanks, equipment blank, and the method blanks are within the laboratory surrogate control limits for all the analyses with the following exceptions:

- SDG L1152823 – Analytical Batch WG1371769: Sample MW-113-102219 surrogate (4-bromofluorobenzene) recovery is elevated and above laboratory control limit criteria. **Sample MW-113-102219 cis-1,2-dichloroethene result is estimated (J) due to high surrogate recovery.** No action was taken for tetrachloroethene as it is not detected in sample MW-113-102219.
- SDG L1152823 – Analytical Batch WG1371769: Sample BB-8-102219 surrogate (4-bromofluorobenzene) recovery is below laboratory control limit criteria. **Sample MW-113-102219 cis-1,2-dichloroethene and tetrachloroethene results are estimated (J) due to low surrogate recovery.**

NWTPH-Gx Method:

The surrogate recovery results for the samples, laboratory control samples, matrix spike samples, trip blanks, equipment blank, and the method blanks are within the laboratory surrogate control limits for all analyses.

Laboratory Control Samples

USEPA Method 8260C:

Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) or laboratory control sample (LCS) were analyzed by USEPA Method 8260C method. The LCS % Rs or LCS/LCSD % Rs and RPDs for the all target compounds are within the laboratory control criteria for waters with the following discussion:

- SDGs L1152340 and L1152823 - Analytical batch WG1371177. LCS % recoveries for acetone, acrylonitrile, bromodichloromethane, and 1,1,1-trichloroethane recovery are above laboratory acceptance criteria and laboratory qualified (J4). Acetone and acrylonitrile LCS results are within recovery criteria and are incorrectly qualified (J4) by Pace. No action is taken other than to line out these qualifiers (J4) on the Form 1s and remove laboratory qualifications from the EDD results. No action is taken for bromodichloromethane, and 1,1,1-trichloroethane since these compounds are not detected in the associated samples.
- SDG L1152823 - Analytical batch WG1373274. LCSD % recoveries for bromobenzene and 2-chlorotoluene are slightly below laboratory acceptance criteria and laboratory qualified (J4). No action is taken with associated sample (MW-919-102219) and equipment blank (EQ-102219) since LCSD recoveries are just below control limit criteria and LCS results are within criteria.

NWTPH-Gx Method:

The LCS % Rs for the target compound (gasoline) are within the laboratory control criteria for waters.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

The LCS/LCSD % Rs and RPDs for the target compound (dissolved gases) are within the laboratory control criteria for waters.

USEPA Method 6020B:

The LCS/LCSD % Rs and RPDs for the target compound (iron and manganese) are within the laboratory control criteria for waters.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

The LCS % Rs for general chemistry parameters are within the laboratory control criteria for waters.

Matrix Spike/Matrix Spike Duplicates

USEPA Method 8260C:

Matrix spike/matrix spike duplicate (MS/MSD) analyses were not performed. Refer to LCS results and field duplicate samples for accuracy and precision data.

NWTPH-Gx Method:

MS/MSD analyses were not performed. Refer to LCS results and field duplicate samples for accuracy and precision data.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

MS/MSD analyses were not performed. Refer to LCS results and field duplicate samples for accuracy and precision data.

USEPA Method 6020B:

MS/MSD analyses were performed on client and non-client samples within the analytical batches. The MS/MSD % Rs and RPD were acceptable and within laboratory control limit criteria for water samples.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

MS/MSD analyses were performed on client and/or non-client samples within the analytical batches. In cases where MS/MSD spike analyses are not performed refer to LCS/LCSD or laboratory duplicate data for accuracy and precision data. The MS/MSD % Rs and RPDs are acceptable and within laboratory control limit criteria for water samples.

Other Quality Control Issues

No laboratory quality control issues were identified in the laboratory report with the following discussions:

- Multiple SDGs: Selected sample narratives for alkalinity results indicate that several sample containers had some headspace and exposure to air may have impacted the reported results. No action was taken other than to note this.
- Electronic data deliverables (EDDs) for these SDGs were provided by the laboratory and data validator qualifiers were entered. In some cases, different chemical synonyms are used between the EDD and the hardcopy however associated Chemical Abstracts Service (CAS) numbers are provided in the EDD to confirm chemical identifications.

Compound Identification and Quantitation Limits

Results of the analyses were reported based on laboratory RDLs for all compounds. RDLs for selected compounds are elevated due to method-required dilutions. No action is taken other than to note this with the following discussion:

- SDG L1152823: Sample MW-113-102219 VOC reporting limits for certain targets are elevated due elevated target compounds and dilutions.

Data Assessment

The laboratory data reported for this project were reviewed based on the criteria outlined in:

- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2017); and
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA, 2017).

Data qualifiers are assigned and laboratory report pages with qualifiers are attached. All data, including qualified data, are judged to be acceptable for their intended use.

MEMORANDUM

TO: Project File **DATE:** December 20, 2019

FROM: Jessie Compeau

SUBJECT: Laboratory Data Validation Review

PROJECT: American Linen Data Validation

PROJECT #: 1413.001.02.501E

TASK: EIM Data Validation Level EPA2A for October and November 2019 – Groundwater Samples

LAB: Pace Sample Delivery Groups (SDGs): L1155658, L1156109, L1156445, L1158143, and L1161106

Eight (8) groundwater samples (including one field duplicate) were collected as part of the Remedial Investigation (RI) sampling event at the Former American Linen Supply Site, in Seattle, Washington, October 30-31, November 6 and 14, 2019. The samples were shipped and delivered to Pace Lab Sciences (Pace) of Mount Juliet, TN for laboratory analysis. Selected samples were analyzed for the following:

- Volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method 8260C;
- Total petroleum hydrocarbons as gasoline (TPH-Gx) by NWTPH-Gx per analytical method stipulated by Washington State Department of Ecology;
- VOCs (dissolved gases – methane, ethane, and ethene) by EPA SOP RSK 175;
- Alkalinity by Method 2320 B-2011;
- Anions (chloride, nitrate, and sulfate) by USEPA Method 9056A;
- Total Organic Carbon (TOC) by USEPA Method 9060A; and
- Metals (iron and manganese) by USEPA Method 6020B.

The RI sampling was conducted mostly during the month of October with a few samples collected in November 2019. Results are reported in multiple SDGs from Pace. Pace SDGs are reviewed in groups of approximately 2-4 per each data validation report. Group 5 analytical results are reported in SDGs L1155658, L1156109, L1156445, L1158143, and L1161106. The quality assurance review of the laboratory data associated with Group 5 is summarized below.

DATA QUALIFICATIONS

Guidelines established by USEPA for a limited data validation review of analytical data along with Pace control limit criteria were used to validate the data. The comments presented in this memorandum refer to the laboratory's performance in meeting the quality control criteria outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2017) and USEPA Contract Laboratory

Program National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA, 2017). Following Guidelines, non-project-specific laboratory duplicates and matrix spike results were not evaluated as part of this data validation.

DATA VALIDATION

Completeness

All samples were collected and analyzed as requested with the following exceptions:

- SDG L1155658: The lower portion of the COC showing the courier bill of lading number is not legible since the lower portion of the page is cut-off. Pace rescanned an acceptable copy of the COC for PES's records.
- SDG L1156109: COC shows date received as 11/1 instead of 11/1/19. The COC was relinquished on 10/31/19 and sample acknowledgment/courier tracking data may be used to support receipt date of 11/1/2019. Pace's standard policy is to include the day, month, and year and indicated that the abbreviated date format was inadvertent. Lower portion of the COC signature block is not legible since the lower portion of the page is cut-off. Pace rescanned an acceptable copy of the COC for PES's records.

Sample Collection and Preservation

Samples were collected in laboratory-supplied sample containers preserved as appropriate for the individual analyses conducted. The samples were packed on ice in coolers and delivered by courier to the analytical laboratory. The laboratory reported that the coolers were received at a cooler temperature less than the recommended temperature preservation of 6°C. Samples were received in good condition except for issues mentioned in the Completeness section. No data were qualified based upon the sample collection and preservation information.

Holding Times

USEPA Method 8260C:

All samples were analyzed for VOCs within the EPA recommended holding time of fourteen days for preserved waters from the date of collection. All holding time criteria are met.

NWTPH-Gx Method:

All samples were analyzed within the WA State recommended holding time of fourteen days for preserved waters from the date of sample collection. All holding time criteria are met.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

All samples were analyzed within the WA State recommended holding time of fourteen days for preserved waters from the date of sample collection. All holding time criteria are met.

USEPA Method 6020B:

All samples were analyzed within the USEPA recommended holding time for iron and manganese of 180 days for preserved waters from the date of sample collection. All holding time criteria are met.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

All samples were analyzed within the USEPA recommended holding time for alkalinity (14 days), chloride (28 days), sulfate (28 days), and nitrate (48 hours), and TOC (28 days) for preserved waters from the date of sample collection. All holding time criteria are met.

Initial and Continuing Calibration

Calibration data for this project are not required for this deliverable however Pace’s notes indicate the following:

- Multiple SDGs - *USEPA Method 8260C*: Continuing calibration verification (CCV) issues were noted by Pace for multiple compounds associated with analytical batches in each SDG. These compounds are qualified by the laboratory “J0” to indicate that percent difference CCV is outside of laboratory acceptance criteria. **Associated sample results with laboratory qualified (J0) results are estimated and qualified (J/UJ).**

Method Blank Results

USEPA Method 8260C:

Laboratory method blanks were included with the analytical batches per method requirement. The target analytes were not detected in the method blanks at or above the reporting detection limits (RDLs) with the following exceptions:

- SDGs L1158143 – Analytical batch WG1381516: A low level of acetone is detected in the method blank. **Associated acetone detection in sample FMW-137-110619 is below the RDL and qualified as not detected (U).**

NWTPH-Gx Method:

Laboratory method blanks were included with the analytical batches per method requirement. The target analyte (gasoline) was not detected in the method blanks at or above the RDLs.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

Laboratory method blanks were included with the analytical batches per method requirement. The target analytes (dissolved gases) are not detected in the method blanks at or above the RDLs.

USEPA Method 6020B and General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

Laboratory method blanks were included with the analytical batches per method requirement. The target analytes were detected in the method blanks below the RDLs. Per Guidance, no action is taken for blank detections less than the RDL when associated sample detections are greater than the RDL. General chemistry and metal blank detections are shown below:

SDG	Batch	Method	Analyte	Method Blank Result	Qualifier	RDL	Units	Associated Result(s) Qualified
L1155658	WG1376309	SM2320B	Alkalinity as CaCO ₃ , Total	3080	J	20000	µg/L	NO
L1155658	WG1372794	9056A	Chloride	53.1	J	1000	µg/L	NO
L1155658	WG1373549	9056A	Sulfate	90.9	J	1000	µg/L	NO
L1155658	WG1374098	9060A	TOC	387	J	5.00	µg/L	NO

L1155658	WG1373700	6020B	Manganese	0.609	J	5.00	µg/L	NO
L1156109	WG1376333	SM2320B	Alkalinity as CaCO ₃ , Total	3390	J	20000	µg/L	NO
L1156109	WG1373549	9056A	Chloride	83.7	J	1000	µg/L	NO
L1156109	WG1373549	9056A	Sulfate	90.9	J	5000	µg/L	NO
L1156109	WG1375433	9060A	TOC	345	J	1000	µg/L	NO
L1156445	WG1376629	SM2320B	Alkalinity as CaCO ₃ , Total	3970	J	20000	µg/L	NO
L1156445	WG1375433	9060A	TOC	345	J	1000	µg/L	NO
L1156445	WG1375892	6020B	Manganese	0.432	J	5.00	µg/L	NO
L1158143	WG1379400	SM2320B	Alkalinity as CaCO ₃ , Total	4200	J	20000	µg/L	NO
L1158143	WG1376795	9056A	Chloride	131	J	1000	µg/L	NO
L1158143	WG1376795	9056A	Nitrate	30.1	J	100	µg/L	YES
L1158143	WG1376795	9056A	Sulfate	221	J	5000	µg/L	NO
L1158143	WG1378047	9060A	TOC	296	J	1000	µg/L	NO
L1158143	WG1377945	6020B	Manganese	0.736	J	5.00	µg/L	NO
L1161106	WG1384195	SM2320B	Alkalinity as CaCO ₃ , Total	8120	J	20000	µg/L	NO
L1161106	WG1382360	9060A	TOC	242	J	1000	µg/L	NO
L1161106	WG1381630	6020B	Manganese	0.438	J	5.00	µg/L	NO

Target analytes were detected in method blanks at low levels with no impact to the associated samples with the following exception:

- SDGs L1158143 – Analytical batch WG1376795: A low level of nitrate is detected in the method blank. **Sample FMW-137-110619 nitrate detection is below the RDL and qualified as not detected (U).**

Trip Blank Results

USEPA Method 8260C and NWTPH-Gx:

Trip blanks were not collected.

Field, Rinsate, or Equipment Blank Results

All Analytical Methods:

Field, rinsate, and equipment blanks were not collected.

Field Duplicate Analyses

Field duplicate pairs were submitted and analyzed. Field duplicate sample pair is as follows:

- SDG L1155658: FMW-141-103019 and MW-920-103019

Target analyte results are comparable and within a relative percent difference (RPD) of 30% (\pm 1x RDL for groundwater results <5X the RDL) for the field duplicate pair with the following exceptions:

- SDG L1155658: **Samples FMW-141-103019 and MW-920-103019 RPD results for chloride, ethene, VOC compounds (1,1-dichloroethene, cis-1,2-dichloroethene,**

trans-1,2-dichloroethene, and trichloroethene) are greater than 30% and qualified as estimated (J/UJ).

Laboratory Duplicate Analyses

USEPA Method 8260C:

Laboratory duplicate samples were not analyzed. Refer to laboratory control sample/sample duplicate (LCS/LCSD) or matrix spike/matrix spike duplicate (MS/MSD) results for precision data.

NWTPH-Gx Method:

Laboratory duplicate samples were not analyzed. Precision data is not provided. No action is taken other than to note this.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

Laboratory duplicate sample analyses were performed on client and non-client samples within the analytical batches. The primary/duplicate RPDs for dissolved gas analyses are within the laboratory control limit of 20%.

USEPA Method 6020B:

Laboratory duplicate samples were not analyzed. Refer to LCS/LCSD or MS/MSD results for precision data.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

Laboratory duplicate sample analyses were performed on client samples and/or on non-client samples. The primary/duplicate RPDs for general chemistry parameters are within the laboratory control RPD limits or $\pm 1x$ RDL for groundwater results $<5X$ the RDL.

Surrogate Recoveries

USEPA Method 8260C:

The surrogate recovery results for the samples, laboratory control samples, matrix spike samples, and the method blanks are within the laboratory surrogate control limits for all the analyses.

NWTPH-Gx Method:

The surrogate recovery results for the samples, laboratory control samples, matrix spike samples, and the method blanks are within the laboratory surrogate control limits for all analyses.

Laboratory Control Samples

USEPA Method 8260C:

Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) or laboratory control sample (LCS) were analyzed by USEPA Method 8260C method. The LCS % Rs or LCS/LCSD % Rs and RPDs for the all target compounds are within the laboratory control criteria for waters with the following discussion:

- SDG L1156109 - Analytical batch WG1377899: LCS % recoveries for acetone and acrylonitrile recovery are above laboratory acceptance criteria and laboratory qualified

(J4). Acetone was detected above the MDL and below the RDL and is already qualified due to calibration issues. Additional qualification is not required. No action is needed for acrylonitrile as it is not detected in the associated.

- SDG L1156109 - Analytical batch WG1377899: LCS % recoveries for n-butylbenzene and 1,1,2-trichlorotrifluoroethane are below acceptance criteria. No action is taken on this basis for n-butylbenzene since recovery is 72.8% and slightly below the laboratory acceptance limit (73.0-125%). n-Butylbenzene is already qualified due to calibration issues. Additional qualification is not required. **LCS % recovery for 1,1,2-trichlorotrifluoroethane is below criteria and all associated samples are estimated (UJ).**
- SDG L1156445 - Analytical batch WG1378314. LCS % recoveries for carbon tetrachloride and trichloroethane recovery are above laboratory acceptance criteria and laboratory qualified (J4). No action is needed since neither of these compounds were detected in the associated sample.

NWTPH-Gx Method:

The LCS % Rs for the target compound (gasoline) are within the laboratory control criteria for waters.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

The LCS/LCSD % Rs and RPDs for the target compound (dissolved gases) are within the laboratory control criteria for waters.

USEPA Method 6020B:

The LCS/LCSD % Rs and RPDs for the target compound (iron and manganese) are within the laboratory control criteria for waters.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

The LCS % Rs for general chemistry parameters are within the laboratory control criteria for waters.

Matrix Spike/Matrix Spike Duplicates

USEPA Method 8260C:

Matrix spike/matrix spike duplicate (MS/MSD) analyses were performed on a non-client sample associated with SDG L1155658. The MS/MSD % Rs were acceptable but multiple RPDs are above control limit criteria and laboratory qualified (J3) due to wide recoveries. Refer to LCS results and field duplicate sample for accuracy and precision data.

NWTPH-Gx Method:

MS/MSD analyses were not performed. Refer to LCS results. No measure of precision was provided. No action was taken other than to note this.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

MS/MSD analyses were not performed. Refer to LCS results and field duplicate sample for accuracy and precision data.

USEPA Method 6020B:

MS/MSD analyses were performed on non-client samples within the analytical batches. The MS/MSD % Rs and RPD were acceptable and within laboratory control limit criteria for water samples with the following discussion:

- SDG L1156109: Matrix spike analysis was performed on a non-client sample and spike results are laboratory qualified (V) to indicate that the sample concentration is greater than 4X the spike amount. No action is taken in this case since the spike was performed on a non-client sample. Refer to LCS/LCSD results for accuracy and precision data.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

MS or MS/MSD analyses were performed on client and/or non-client samples within the analytical batches. In cases where MS/MSD spike analyses are not performed refer to LCS/LCSD or laboratory duplicate data for accuracy and precision data. The MS/MSD % Rs and RPDs are acceptable and within laboratory control limit criteria for water samples.

Other Quality Control Issues

No laboratory quality control issues were identified in the laboratory report with the following discussions:

- Multiple SDGs: Selected sample narratives for alkalinity results indicate that several sample containers had some headspace and exposure to air may have impacted the reported results. No action was taken other than to note this.
- Electronic data deliverables (EDDs) for these SDGs were provided by the laboratory and data validator qualifiers were entered. In some cases, different chemical synonyms are used between the EDD and the hardcopy however associated Chemical Abstracts Service (CAS) numbers are provided in the EDD to confirm chemical identifications.

Compound Identification and Quantitation Limits

Results of the analyses were reported based on laboratory RDLs for all compounds. RDLs for selected compounds are elevated due to method-required dilutions. No action is taken other than to note this.

Data Assessment

The laboratory data reported for this project were reviewed based on the criteria outlined in:

- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2017); and
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA, 2017).

Data qualifiers are assigned and laboratory report pages with qualifiers are attached. All data, including qualified data, are judged to be acceptable for their intended use.



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	384000		2710	20000	1	10/13/2019 15:01	WG1362246

Sample Narrative:

L1146788-01 WG1362246: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	16900		51.9	1000	1	10/05/2019 16:50	WG1357983
Sulfate	41800		77.4	5000	1	10/05/2019 16:50	WG1357983

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	3780	<u>B</u>	102	1000	1	10/11/2019 13:15	WG1361291

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	2580		75.0	500	5	10/09/2019 10:59	WG1358528
Manganese	328		1.25	25.0	5	10/09/2019 10:59	WG1358528

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	143		0.287	0.678	1	10/10/2019 14:27	WG1360431
Ethane	U		0.296	1.29	1	10/10/2019 14:27	WG1360431
Ethene	U		0.422	1.27	1	10/10/2019 14:27	WG1360431

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	2.73	<u>U</u> <u>JJO</u>	1.05	25.0	1	10/15/2019 02:55	WG1362918
Acrylonitrile	U		0.873	5.00	1	10/15/2019 02:55	WG1362918
Benzene	U		0.0896	0.500	1	10/15/2019 02:55	WG1362918
Bromobenzene	U		0.133	0.500	1	10/15/2019 02:55	WG1362918
Bromodichloromethane	U		0.0800	0.500	1	10/15/2019 02:55	WG1362918
Bromochloromethane	U		0.145	0.500	1	10/15/2019 02:55	WG1362918
Bromoform	U		0.186	0.500	1	10/15/2019 02:55	WG1362918
Bromomethane	U		0.157	2.50	1	10/15/2019 02:55	WG1362918
n-Butylbenzene	U		0.143	0.500	1	10/15/2019 02:55	WG1362918
sec-Butylbenzene	U		0.134	0.500	1	10/15/2019 02:55	WG1362918
tert-Butylbenzene	U		0.183	0.500	1	10/15/2019 02:55	WG1362918
Carbon disulfide	0.485	<u>J</u>	0.101	0.500	1	10/15/2019 02:55	WG1362918
Carbon tetrachloride	U		0.159	0.500	1	10/15/2019 02:55	WG1362918
Chlorobenzene	U		0.140	0.500	1	10/15/2019 02:55	WG1362918
Chlorodibromomethane	U		0.128	0.500	1	10/15/2019 02:55	WG1362918
Chloroethane	U		0.141	2.50	1	10/15/2019 02:55	WG1362918
Chloroform	U		0.0860	0.500	1	10/15/2019 02:55	WG1362918
Chloromethane	U		0.153	1.25	1	10/15/2019 02:55	WG1362918
2-Chlorotoluene	U		0.111	0.500	1	10/15/2019 02:55	WG1362918
4-Chlorotoluene	U		0.0972	0.500	1	10/15/2019 02:55	WG1362918
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/15/2019 02:55	WG1362918

JC 11/25/19

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromoethane	U		0.193	0.500	1	10/15/2019 02:55	WG1362918
Dibromomethane	U		0.117	0.500	1	10/15/2019 02:55	WG1362918
1,2-Dichlorobenzene	U		0.101	0.500	1	10/15/2019 02:55	WG1362918
1,3-Dichlorobenzene	U		0.130	0.500	1	10/15/2019 02:55	WG1362918
1,4-Dichlorobenzene	U		0.121	0.500	1	10/15/2019 02:55	WG1362918
Dichlorodifluoromethane	U		0.127	2.50	1	10/15/2019 02:55	WG1362918
1,1-Dichloroethane	U		0.114	0.500	1	10/15/2019 02:55	WG1362918
1,2-Dichloroethane	U		0.108	0.500	1	10/15/2019 02:55	WG1362918
1,1-Dichloroethene	U		0.188	0.500	1	10/15/2019 02:55	WG1362918
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/15/2019 02:55	WG1362918
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/15/2019 02:55	WG1362918
1,2-Dichloropropane	U		0.190	0.500	1	10/15/2019 02:55	WG1362918
1,1-Dichloropropene	U		0.128	0.500	1	10/15/2019 02:55	WG1362918
1,3-Dichloropropane	U		0.147	1.00	1	10/15/2019 02:55	WG1362918
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/15/2019 02:55	WG1362918
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/15/2019 02:55	WG1362918
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/15/2019 02:55	WG1362918
2,2-Dichloropropane	U		0.0929	0.500	1	10/15/2019 02:55	WG1362918
Di-isopropyl ether	U		0.0924	0.500	1	10/15/2019 02:55	WG1362918
Ethylbenzene	U		0.158	0.500	1	10/15/2019 02:55	WG1362918
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/15/2019 02:55	WG1362918
2-Hexanone	U		0.757	5.00	1	10/15/2019 02:55	WG1362918
n-Hexane	U		0.305	5.00	1	10/15/2019 02:55	WG1362918
Iodomethane	U		0.377	10.0	1	10/15/2019 02:55	WG1362918
Isopropylbenzene	U		0.126	0.500	1	10/15/2019 02:55	WG1362918
p-Isopropyltoluene	U		0.138	0.500	1	10/15/2019 02:55	WG1362918
2-Butanone (MEK)	U		1.28	5.00	1	10/15/2019 02:55	WG1362918
Methylene Chloride	U		1.07	2.50	1	10/15/2019 02:55	WG1362918
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/15/2019 02:55	WG1362918
Methyl tert-butyl ether	U		0.102	0.500	1	10/15/2019 02:55	WG1362918
Naphthalene	U		0.174	2.50	1	10/15/2019 02:55	WG1362918
n-Propylbenzene	U		0.162	0.500	1	10/15/2019 02:55	WG1362918
Styrene	U		0.117	0.500	1	10/15/2019 02:55	WG1362918
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/15/2019 02:55	WG1362918
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/15/2019 02:55	WG1362918
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/15/2019 02:55	WG1362918
Tetrachloroethene	U		0.199	0.500	1	10/15/2019 02:55	WG1362918
Toluene	0.570		0.412	0.500	1	10/15/2019 02:55	WG1362918
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/15/2019 02:55	WG1362918
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/15/2019 02:55	WG1362918
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/15/2019 02:55	WG1362918
1,1,2-Trichloroethane	U		0.186	0.500	1	10/15/2019 02:55	WG1362918
Trichloroethene	U		0.153	0.500	1	10/15/2019 02:55	WG1362918
Trichlorofluoromethane	U		0.130	2.50	1	10/15/2019 02:55	WG1362918
1,2,3-Trichloropropane	U		0.247	2.50	1	10/15/2019 02:55	WG1362918
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/15/2019 02:55	WG1362918
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/15/2019 02:55	WG1362918
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/15/2019 02:55	WG1362918
Vinyl acetate	U		0.645	5.00	1	10/15/2019 02:55	WG1362918
Vinyl chloride	U		0.118	0.500	1	10/15/2019 02:55	WG1362918
Xylenes, Total	U		0.316	1.50	1	10/15/2019 02:55	WG1362918
(S) Toluene-d8	102			80.0-120		10/15/2019 02:55	WG1362918
(S) 4-Bromofluorobenzene	102			77.0-126		10/15/2019 02:55	WG1362918
(S) 1,2-Dichloroethane-d4	109			70.0-130		10/15/2019 02:55	WG1362918

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 11/25/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	587000		2710	20000	1	10/13/2019 15:08	WG1362246

Sample Narrative:

L1146788-02 WG1362246: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	20100		51.9	1000	1	10/05/2019 18:29	WG1357983
Nitrate	U UJ	T8	22.7	100	1	10/05/2019 18:29	WG1357983
Sulfate	93100		77.4	5000	1	10/05/2019 18:29	WG1357983

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	13100		102	1000	1	10/11/2019 13:39	WG1361291

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	5740		75.0	500	5	10/09/2019 11:02	WG1358528
Manganese	374		1.25	25.0	5	10/09/2019 11:02	WG1358528

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	3340		0.287	0.678	1	10/10/2019 14:31	WG1360431
Ethane	13.4		0.296	1.29	1	10/10/2019 14:31	WG1360431
Ethene	22.4		0.422	1.27	1	10/10/2019 14:31	WG1360431

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
	ug/l		ug/l	ug/l		date / time		
Acetone	6.39	U	J JO	1.05	25.0	1	10/15/2019 03:16	WG1362918
Acrylonitrile	U		0.873	5.00	1	10/15/2019 03:16	WG1362918	
Benzene	0.401		J	0.0896	0.500	1	10/15/2019 03:16	WG1362918
Bromobenzene	U		0.133	0.500	1	10/15/2019 03:16	WG1362918	
Bromodichloromethane	U		0.0800	0.500	1	10/15/2019 03:16	WG1362918	
Bromochloromethane	U		0.145	0.500	1	10/15/2019 03:16	WG1362918	
Bromoform	U		0.186	0.500	1	10/15/2019 03:16	WG1362918	
Bromomethane	U		0.157	2.50	1	10/15/2019 03:16	WG1362918	
n-Butylbenzene	U		0.143	0.500	1	10/15/2019 03:16	WG1362918	
sec-Butylbenzene	U		0.134	0.500	1	10/15/2019 03:16	WG1362918	
tert-Butylbenzene	U		0.183	0.500	1	10/15/2019 03:16	WG1362918	
Carbon disulfide	5.63		0.101	0.500	1	10/15/2019 03:16	WG1362918	
Carbon tetrachloride	U		0.159	0.500	1	10/15/2019 03:16	WG1362918	
Chlorobenzene	U		0.140	0.500	1	10/15/2019 03:16	WG1362918	
Chlorodibromomethane	U		0.128	0.500	1	10/15/2019 03:16	WG1362918	
Chloroethane	U		0.141	2.50	1	10/15/2019 03:16	WG1362918	
Chloroform	U		0.0860	0.500	1	10/15/2019 03:16	WG1362918	
Chloromethane	U		0.153	1.25	1	10/15/2019 03:16	WG1362918	
2-Chlorotoluene	U		0.111	0.500	1	10/15/2019 03:16	WG1362918	
4-Chlorotoluene	U		0.0972	0.500	1	10/15/2019 03:16	WG1362918	

JC 11/25/19

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/15/2019 03:16	WG1362918
1,2-Dibromoethane	U		0.193	0.500	1	10/15/2019 03:16	WG1362918
Dibromomethane	U		0.117	0.500	1	10/15/2019 03:16	WG1362918
1,2-Dichlorobenzene	U		0.101	0.500	1	10/15/2019 03:16	WG1362918
1,3-Dichlorobenzene	U		0.130	0.500	1	10/15/2019 03:16	WG1362918
1,4-Dichlorobenzene	U		0.121	0.500	1	10/15/2019 03:16	WG1362918
Dichlorodifluoromethane	U		0.127	2.50	1	10/15/2019 03:16	WG1362918
1,1-Dichloroethane	U		0.114	0.500	1	10/15/2019 03:16	WG1362918
1,2-Dichloroethane	U		0.108	0.500	1	10/15/2019 03:16	WG1362918
1,1-Dichloroethene	1.53		0.188	0.500	1	10/15/2019 03:16	WG1362918
cis-1,2-Dichloroethene	1550		4.67	25.0	50	10/15/2019 16:28	WG1363245
trans-1,2-Dichloroethene	3.21		0.152	0.500	1	10/15/2019 03:16	WG1362918
1,2-Dichloropropane	U		0.190	0.500	1	10/15/2019 03:16	WG1362918
1,1-Dichloropropene	U		0.128	0.500	1	10/15/2019 03:16	WG1362918
1,3-Dichloropropane	U		0.147	1.00	1	10/15/2019 03:16	WG1362918
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/15/2019 03:16	WG1362918
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/15/2019 03:16	WG1362918
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/15/2019 03:16	WG1362918
2,2-Dichloropropane	U		0.0929	0.500	1	10/15/2019 03:16	WG1362918
Di-isopropyl ether	U		0.0924	0.500	1	10/15/2019 03:16	WG1362918
Ethylbenzene	U		0.158	0.500	1	10/15/2019 03:16	WG1362918
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/15/2019 03:16	WG1362918
2-Hexanone	U		0.757	5.00	1	10/15/2019 03:16	WG1362918
n-Hexane	U		0.305	5.00	1	10/15/2019 03:16	WG1362918
Iodomethane	U		0.377	10.0	1	10/15/2019 03:16	WG1362918
Isopropylbenzene	U		0.126	0.500	1	10/15/2019 03:16	WG1362918
p-Isopropyltoluene	U		0.138	0.500	1	10/15/2019 03:16	WG1362918
2-Butanone (MEK)	U		1.28	5.00	1	10/15/2019 03:16	WG1362918
Methylene Chloride	U		1.07	2.50	1	10/15/2019 03:16	WG1362918
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/15/2019 03:16	WG1362918
Methyl tert-butyl ether	U		0.102	0.500	1	10/15/2019 03:16	WG1362918
Naphthalene	U		0.174	2.50	1	10/15/2019 03:16	WG1362918
n-Propylbenzene	U		0.162	0.500	1	10/15/2019 03:16	WG1362918
Styrene	U		0.117	0.500	1	10/15/2019 03:16	WG1362918
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/15/2019 03:16	WG1362918
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/15/2019 03:16	WG1362918
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/15/2019 03:16	WG1362918
Tetrachloroethene	U		0.199	0.500	1	10/15/2019 03:16	WG1362918
Toluene	5.45		0.412	0.500	1	10/15/2019 03:16	WG1362918
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/15/2019 03:16	WG1362918
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/15/2019 03:16	WG1362918
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/15/2019 03:16	WG1362918
1,1,2-Trichloroethane	U		0.186	0.500	1	10/15/2019 03:16	WG1362918
Trichloroethene	0.642		0.153	0.500	1	10/15/2019 03:16	WG1362918
Trichlorofluoromethane	U		0.130	2.50	1	10/15/2019 03:16	WG1362918
1,2,3-Trichloropropane	U		0.247	2.50	1	10/15/2019 03:16	WG1362918
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/15/2019 03:16	WG1362918
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/15/2019 03:16	WG1362918
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/15/2019 03:16	WG1362918
Vinyl acetate	U		0.645	5.00	1	10/15/2019 03:16	WG1362918
Vinyl chloride	61.9		0.118	0.500	1	10/15/2019 03:16	WG1362918
Xylenes, Total	U		0.316	1.50	1	10/15/2019 03:16	WG1362918
(S) Toluene-d8	101			80.0-120		10/15/2019 03:16	WG1362918
(S) Toluene-d8	94.7			80.0-120		10/15/2019 16:28	WG1363245
(S) 4-Bromofluorobenzene	104			77.0-126		10/15/2019 03:16	WG1362918
(S) 4-Bromofluorobenzene	91.6			77.0-126		10/15/2019 16:28	WG1363245

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 11/25/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	105			70.0-130		10/15/2019 03:16	WG1362918
(S) 1,2-Dichloroethane-d4	84.0			70.0-130		10/15/2019 16:28	WG1363245

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 11/25/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	683000		2710	20000	1	10/13/2019 15:16	WG1362246

Sample Narrative:

L1146788-03 WG1362246: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	17700		51.9	1000	1	10/05/2019 18:45	WG1357983
Nitrate	U	UJ T8	22.7	100	1	10/05/2019 18:45	WG1357983
Sulfate	787	J	77.4	5000	1	10/05/2019 18:45	WG1357983

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	8750		102	1000	1	10/11/2019 14:02	WG1361291

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	20300		150	1000	10	10/09/2019 11:06	WG1358528
Manganese	755		2.50	50.0	10	10/09/2019 11:06	WG1358528

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	23700		2.87	6.78	10	10/11/2019 09:50	WG1361193
Ethane	U		0.296	1.29	1	10/10/2019 14:33	WG1360431
Ethene	36.8		0.422	1.27	1	10/10/2019 14:33	WG1360431

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
	ug/l		ug/l	ug/l		date / time		
Acetone	2.16	U	J JO	1.05	25.0	1	10/15/2019 03:36	WG1362918
Acrylonitrile	U		0.873	5.00	1	10/15/2019 03:36	WG1362918	
Benzene	17.0		0.0896	0.500	1	10/15/2019 03:36	WG1362918	
Bromobenzene	U		0.133	0.500	1	10/15/2019 03:36	WG1362918	
Bromodichloromethane	U		0.0800	0.500	1	10/15/2019 03:36	WG1362918	
Bromochloromethane	U		0.145	0.500	1	10/15/2019 03:36	WG1362918	
Bromoform	U		0.186	0.500	1	10/15/2019 03:36	WG1362918	
Bromomethane	U		0.157	2.50	1	10/15/2019 03:36	WG1362918	
n-Butylbenzene	U		0.143	0.500	1	10/15/2019 03:36	WG1362918	
sec-Butylbenzene	U		0.134	0.500	1	10/15/2019 03:36	WG1362918	
tert-Butylbenzene	U		0.183	0.500	1	10/15/2019 03:36	WG1362918	
Carbon disulfide	U		0.101	0.500	1	10/15/2019 03:36	WG1362918	
Carbon tetrachloride	U		0.159	0.500	1	10/15/2019 03:36	WG1362918	
Chlorobenzene	U		0.140	0.500	1	10/15/2019 03:36	WG1362918	
Chlorodibromomethane	U		0.128	0.500	1	10/15/2019 03:36	WG1362918	
Chloroethane	U		0.141	2.50	1	10/15/2019 03:36	WG1362918	
Chloroform	U		0.0860	0.500	1	10/15/2019 03:36	WG1362918	
Chloromethane	U		0.153	1.25	1	10/15/2019 03:36	WG1362918	
2-Chlorotoluene	U		0.111	0.500	1	10/15/2019 03:36	WG1362918	
4-Chlorotoluene	U		0.0972	0.500	1	10/15/2019 03:36	WG1362918	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 11/25/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/15/2019 03:36	WG1362918
1,2-Dibromoethane	U		0.193	0.500	1	10/15/2019 03:36	WG1362918
Dibromomethane	U		0.117	0.500	1	10/15/2019 03:36	WG1362918
1,2-Dichlorobenzene	U		0.101	0.500	1	10/15/2019 03:36	WG1362918
1,3-Dichlorobenzene	U		0.130	0.500	1	10/15/2019 03:36	WG1362918
1,4-Dichlorobenzene	U		0.121	0.500	1	10/15/2019 03:36	WG1362918
Dichlorodifluoromethane	U		0.127	2.50	1	10/15/2019 03:36	WG1362918
1,1-Dichloroethane	U		0.114	0.500	1	10/15/2019 03:36	WG1362918
1,2-Dichloroethane	U		0.108	0.500	1	10/15/2019 03:36	WG1362918
1,1-Dichloroethene	U		0.188	0.500	1	10/15/2019 03:36	WG1362918
cis-1,2-Dichloroethene	1.26		0.0933	0.500	1	10/15/2019 16:48	WG1363245
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/15/2019 03:36	WG1362918
1,2-Dichloropropane	U		0.190	0.500	1	10/15/2019 03:36	WG1362918
1,1-Dichloropropene	U		0.128	0.500	1	10/15/2019 03:36	WG1362918
1,3-Dichloropropane	U		0.147	1.00	1	10/15/2019 03:36	WG1362918
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/15/2019 03:36	WG1362918
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/15/2019 03:36	WG1362918
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/15/2019 03:36	WG1362918
2,2-Dichloropropane	U		0.0929	0.500	1	10/15/2019 03:36	WG1362918
Di-isopropyl ether	U		0.0924	0.500	1	10/15/2019 03:36	WG1362918
Ethylbenzene	U		0.158	0.500	1	10/15/2019 03:36	WG1362918
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/15/2019 03:36	WG1362918
2-Hexanone	U		0.757	5.00	1	10/15/2019 03:36	WG1362918
n-Hexane	U		0.305	5.00	1	10/15/2019 03:36	WG1362918
Iodomethane	U		0.377	10.0	1	10/15/2019 03:36	WG1362918
Isopropylbenzene	U		0.126	0.500	1	10/15/2019 03:36	WG1362918
p-Isopropyltoluene	U		0.138	0.500	1	10/15/2019 03:36	WG1362918
2-Butanone (MEK)	U		1.28	5.00	1	10/15/2019 03:36	WG1362918
Methylene Chloride	U		1.07	2.50	1	10/15/2019 03:36	WG1362918
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/15/2019 03:36	WG1362918
Methyl tert-butyl ether	U		0.102	0.500	1	10/15/2019 03:36	WG1362918
Naphthalene	U		0.174	2.50	1	10/15/2019 03:36	WG1362918
n-Propylbenzene	U		0.162	0.500	1	10/15/2019 03:36	WG1362918
Styrene	U		0.117	0.500	1	10/15/2019 03:36	WG1362918
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/15/2019 03:36	WG1362918
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/15/2019 03:36	WG1362918
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/15/2019 03:36	WG1362918
Tetrachloroethene	U		0.199	0.500	1	10/15/2019 03:36	WG1362918
Toluene	0.535		0.412	0.500	1	10/15/2019 03:36	WG1362918
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/15/2019 03:36	WG1362918
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/15/2019 03:36	WG1362918
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/15/2019 03:36	WG1362918
1,1,2-Trichloroethane	U		0.186	0.500	1	10/15/2019 03:36	WG1362918
Trichloroethene	U		0.153	0.500	1	10/15/2019 03:36	WG1362918
Trichlorofluoromethane	U		0.130	2.50	1	10/15/2019 03:36	WG1362918
1,2,3-Trichloropropane	U		0.247	2.50	1	10/15/2019 03:36	WG1362918
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/15/2019 03:36	WG1362918
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/15/2019 03:36	WG1362918
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/15/2019 03:36	WG1362918
Vinyl acetate	U		0.645	5.00	1	10/15/2019 03:36	WG1362918
Vinyl chloride	23.3		0.118	0.500	1	10/15/2019 03:36	WG1362918
Xylenes, Total	U		0.316	1.50	1	10/15/2019 03:36	WG1362918
(S) Toluene-d8	103			80.0-120		10/15/2019 03:36	WG1362918
(S) Toluene-d8	92.1			80.0-120		10/15/2019 16:48	WG1363245
(S) 4-Bromofluorobenzene	106			77.0-126		10/15/2019 03:36	WG1362918
(S) 4-Bromofluorobenzene	92.3			77.0-126		10/15/2019 16:48	WG1363245

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

JC 11/25/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	109			70.0-130		10/15/2019 03:36	WG1362918
(S) 1,2-Dichloroethane-d4	81.8			70.0-130		10/15/2019 16:48	WG1363245

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 11/25/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	272000		2710	20000	1	10/13/2019 15:24	WG1362246

Sample Narrative:

L1146788-04 WG1362246: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	18400		51.9	1000	1	10/05/2019 19:01	WG1357983
Nitrate	U	UJ T8	22.7	100	1	10/05/2019 19:01	WG1357983
Sulfate	U		77.4	5000	1	10/05/2019 19:01	WG1357983

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	4410	B	102	1000	1	10/11/2019 14:25	WG1361291

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	12400		150	1000	10	10/09/2019 11:09	WG1358528
Manganese	822		2.50	50.0	10	10/09/2019 11:09	WG1358528

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	18500		2.87	6.78	10	10/11/2019 09:56	WG1361193
Ethane	U		0.296	1.29	1	10/10/2019 14:37	WG1360431
Ethene	U		0.422	1.27	1	10/10/2019 14:37	WG1360431

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	2.99	U JJO	1.05	25.0	1	10/15/2019 03:57	WG1362918
Acrylonitrile	U		0.873	5.00	1	10/15/2019 03:57	WG1362918
Benzene	U		0.0896	0.500	1	10/15/2019 03:57	WG1362918
Bromobenzene	U		0.133	0.500	1	10/15/2019 03:57	WG1362918
Bromodichloromethane	U		0.0800	0.500	1	10/15/2019 03:57	WG1362918
Bromochloromethane	U		0.145	0.500	1	10/15/2019 03:57	WG1362918
Bromoform	U		0.186	0.500	1	10/15/2019 03:57	WG1362918
Bromomethane	U		0.157	2.50	1	10/15/2019 03:57	WG1362918
n-Butylbenzene	U		0.143	0.500	1	10/15/2019 03:57	WG1362918
sec-Butylbenzene	U		0.134	0.500	1	10/15/2019 03:57	WG1362918
tert-Butylbenzene	U		0.183	0.500	1	10/15/2019 03:57	WG1362918
Carbon disulfide	U		0.101	0.500	1	10/15/2019 03:57	WG1362918
Carbon tetrachloride	U		0.159	0.500	1	10/15/2019 03:57	WG1362918
Chlorobenzene	U		0.140	0.500	1	10/15/2019 03:57	WG1362918
Chlorodibromomethane	U		0.128	0.500	1	10/15/2019 03:57	WG1362918
Chloroethane	U		0.141	2.50	1	10/15/2019 03:57	WG1362918
Chloroform	U		0.0860	0.500	1	10/15/2019 03:57	WG1362918
Chloromethane	U		0.153	1.25	1	10/15/2019 03:57	WG1362918
2-Chlorotoluene	U		0.111	0.500	1	10/15/2019 03:57	WG1362918
4-Chlorotoluene	U		0.0972	0.500	1	10/15/2019 03:57	WG1362918

JC 11/25/19

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/15/2019 03:57	WG1362918
1,2-Dibromoethane	U		0.193	0.500	1	10/15/2019 03:57	WG1362918
Dibromomethane	U		0.117	0.500	1	10/15/2019 03:57	WG1362918
1,2-Dichlorobenzene	U		0.101	0.500	1	10/15/2019 03:57	WG1362918
1,3-Dichlorobenzene	U		0.130	0.500	1	10/15/2019 03:57	WG1362918
1,4-Dichlorobenzene	U		0.121	0.500	1	10/15/2019 03:57	WG1362918
Dichlorodifluoromethane	U		0.127	2.50	1	10/15/2019 03:57	WG1362918
1,1-Dichloroethane	U		0.114	0.500	1	10/15/2019 03:57	WG1362918
1,2-Dichloroethane	U		0.108	0.500	1	10/15/2019 03:57	WG1362918
1,1-Dichloroethene	U		0.188	0.500	1	10/15/2019 03:57	WG1362918
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/15/2019 17:07	WG1363245
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/15/2019 03:57	WG1362918
1,2-Dichloropropane	U		0.190	0.500	1	10/15/2019 03:57	WG1362918
1,1-Dichloropropene	U		0.128	0.500	1	10/15/2019 03:57	WG1362918
1,3-Dichloropropane	U		0.147	1.00	1	10/15/2019 03:57	WG1362918
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/15/2019 03:57	WG1362918
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/15/2019 03:57	WG1362918
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/15/2019 03:57	WG1362918
2,2-Dichloropropane	U		0.0929	0.500	1	10/15/2019 03:57	WG1362918
Di-isopropyl ether	U		0.0924	0.500	1	10/15/2019 03:57	WG1362918
Ethylbenzene	U		0.158	0.500	1	10/15/2019 03:57	WG1362918
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/15/2019 03:57	WG1362918
2-Hexanone	U		0.757	5.00	1	10/15/2019 03:57	WG1362918
n-Hexane	U		0.305	5.00	1	10/15/2019 03:57	WG1362918
Iodomethane	U		0.377	10.0	1	10/15/2019 03:57	WG1362918
Isopropylbenzene	U		0.126	0.500	1	10/15/2019 03:57	WG1362918
p-Isopropyltoluene	U		0.138	0.500	1	10/15/2019 03:57	WG1362918
2-Butanone (MEK)	U		1.28	5.00	1	10/15/2019 03:57	WG1362918
Methylene Chloride	U		1.07	2.50	1	10/15/2019 03:57	WG1362918
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/15/2019 03:57	WG1362918
Methyl tert-butyl ether	U		0.102	0.500	1	10/15/2019 03:57	WG1362918
Naphthalene	U		0.174	2.50	1	10/15/2019 03:57	WG1362918
n-Propylbenzene	U		0.162	0.500	1	10/15/2019 03:57	WG1362918
Styrene	U		0.117	0.500	1	10/15/2019 03:57	WG1362918
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/15/2019 03:57	WG1362918
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/15/2019 03:57	WG1362918
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/15/2019 03:57	WG1362918
Tetrachloroethene	U		0.199	0.500	1	10/15/2019 03:57	WG1362918
Toluene	U		0.412	0.500	1	10/15/2019 03:57	WG1362918
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/15/2019 03:57	WG1362918
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/15/2019 03:57	WG1362918
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/15/2019 03:57	WG1362918
1,1,2-Trichloroethane	U		0.186	0.500	1	10/15/2019 03:57	WG1362918
Trichloroethene	U		0.153	0.500	1	10/15/2019 03:57	WG1362918
Trichlorofluoromethane	U		0.130	2.50	1	10/15/2019 03:57	WG1362918
1,2,3-Trichloropropane	U		0.247	2.50	1	10/15/2019 03:57	WG1362918
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/15/2019 03:57	WG1362918
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/15/2019 03:57	WG1362918
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/15/2019 03:57	WG1362918
Vinyl acetate	U		0.645	5.00	1	10/15/2019 03:57	WG1362918
Vinyl chloride	U		0.118	0.500	1	10/15/2019 03:57	WG1362918
Xylenes, Total	U		0.316	1.50	1	10/15/2019 03:57	WG1362918
(S) Toluene-d8	100			80.0-120		10/15/2019 03:57	WG1362918
(S) Toluene-d8	95.3			80.0-120		10/15/2019 17:07	WG1363245
(S) 4-Bromofluorobenzene	103			77.0-126		10/15/2019 03:57	WG1362918
(S) 4-Bromofluorobenzene	95.1			77.0-126		10/15/2019 17:07	WG1363245

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 11/25/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	108			70.0-130		10/15/2019 03:57	WG1362918
(S) 1,2-Dichloroethane-d4	85.4			70.0-130		10/15/2019 17:07	WG1363245

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

JC 11/25/19



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Nitrate	U UJ	<u>T8</u>	22.7	100	1	10/05/2019 19:18	WG1357983

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	325000		2710	20000	1	10/13/2019 15:30	WG1362246

Sample Narrative:

L1146788-06 WG1362246: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	11700		51.9	1000	1	10/05/2019 19:34	WG1357983
Nitrate	U	UJ T8	22.7	100	1	10/05/2019 19:34	WG1357983
Sulfate	35000		77.4	5000	1	10/05/2019 19:34	WG1357983

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	3020	B	102	1000	1	10/11/2019 15:14	WG1361291

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	850		15.0	100	1	10/09/2019 00:25	WG1358528
Manganese	306		1.25	25.0	5	10/09/2019 11:13	WG1358528

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	124		0.287	0.678	1	10/10/2019 14:40	WG1360431
Ethane	U		0.296	1.29	1	10/10/2019 14:40	WG1360431
Ethene	U		0.422	1.27	1	10/10/2019 14:40	WG1360431

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
	ug/l		ug/l	ug/l		date / time		
Acetone	3.36	U	J JO	1.05	25.0	1	10/15/2019 04:18	WG1362918
Acrylonitrile	U		0.873	5.00	1	10/15/2019 04:18	WG1362918	
Benzene	U		0.0896	0.500	1	10/15/2019 04:18	WG1362918	
Bromobenzene	U		0.133	0.500	1	10/15/2019 04:18	WG1362918	
Bromodichloromethane	U		0.0800	0.500	1	10/15/2019 04:18	WG1362918	
Bromochloromethane	U		0.145	0.500	1	10/15/2019 04:18	WG1362918	
Bromoform	U		0.186	0.500	1	10/15/2019 04:18	WG1362918	
Bromomethane	U		0.157	2.50	1	10/15/2019 04:18	WG1362918	
n-Butylbenzene	U		0.143	0.500	1	10/15/2019 04:18	WG1362918	
sec-Butylbenzene	U		0.134	0.500	1	10/15/2019 04:18	WG1362918	
tert-Butylbenzene	U		0.183	0.500	1	10/15/2019 04:18	WG1362918	
Carbon disulfide	U		0.101	0.500	1	10/15/2019 04:18	WG1362918	
Carbon tetrachloride	U		0.159	0.500	1	10/15/2019 04:18	WG1362918	
Chlorobenzene	U		0.140	0.500	1	10/15/2019 04:18	WG1362918	
Chlorodibromomethane	U		0.128	0.500	1	10/15/2019 04:18	WG1362918	
Chloroethane	U		0.141	2.50	1	10/15/2019 04:18	WG1362918	
Chloroform	U		0.0860	0.500	1	10/15/2019 04:18	WG1362918	
Chloromethane	U		0.153	1.25	1	10/15/2019 04:18	WG1362918	
2-Chlorotoluene	U		0.111	0.500	1	10/15/2019 04:18	WG1362918	
4-Chlorotoluene	U		0.0972	0.500	1	10/15/2019 04:18	WG1362918	

JC 11/25/19

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/15/2019 04:18	WG1362918
1,2-Dibromoethane	U		0.193	0.500	1	10/15/2019 04:18	WG1362918
Dibromomethane	U		0.117	0.500	1	10/15/2019 04:18	WG1362918
1,2-Dichlorobenzene	U		0.101	0.500	1	10/15/2019 04:18	WG1362918
1,3-Dichlorobenzene	U		0.130	0.500	1	10/15/2019 04:18	WG1362918
1,4-Dichlorobenzene	U		0.121	0.500	1	10/15/2019 04:18	WG1362918
Dichlorodifluoromethane	U		0.127	2.50	1	10/15/2019 04:18	WG1362918
1,1-Dichloroethane	U		0.114	0.500	1	10/15/2019 04:18	WG1362918
1,2-Dichloroethane	U		0.108	0.500	1	10/15/2019 04:18	WG1362918
1,1-Dichloroethene	U		0.188	0.500	1	10/15/2019 04:18	WG1362918
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/15/2019 17:27	WG1363245
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/15/2019 04:18	WG1362918
1,2-Dichloropropane	U		0.190	0.500	1	10/15/2019 04:18	WG1362918
1,1-Dichloropropene	U		0.128	0.500	1	10/15/2019 04:18	WG1362918
1,3-Dichloropropane	U		0.147	1.00	1	10/15/2019 04:18	WG1362918
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/15/2019 04:18	WG1362918
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/15/2019 04:18	WG1362918
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/15/2019 04:18	WG1362918
2,2-Dichloropropane	U		0.0929	0.500	1	10/15/2019 04:18	WG1362918
Di-isopropyl ether	U		0.0924	0.500	1	10/15/2019 04:18	WG1362918
Ethylbenzene	U		0.158	0.500	1	10/15/2019 04:18	WG1362918
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/15/2019 04:18	WG1362918
2-Hexanone	U		0.757	5.00	1	10/15/2019 04:18	WG1362918
n-Hexane	U		0.305	5.00	1	10/15/2019 04:18	WG1362918
Iodomethane	U		0.377	10.0	1	10/15/2019 04:18	WG1362918
Isopropylbenzene	U		0.126	0.500	1	10/15/2019 04:18	WG1362918
p-Isopropyltoluene	U		0.138	0.500	1	10/15/2019 04:18	WG1362918
2-Butanone (MEK)	U		1.28	5.00	1	10/15/2019 04:18	WG1362918
Methylene Chloride	U		1.07	2.50	1	10/15/2019 04:18	WG1362918
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/15/2019 04:18	WG1362918
Methyl tert-butyl ether	U		0.102	0.500	1	10/15/2019 04:18	WG1362918
Naphthalene	U		0.174	2.50	1	10/15/2019 04:18	WG1362918
n-Propylbenzene	U		0.162	0.500	1	10/15/2019 04:18	WG1362918
Styrene	U		0.117	0.500	1	10/15/2019 04:18	WG1362918
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/15/2019 04:18	WG1362918
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/15/2019 04:18	WG1362918
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/15/2019 04:18	WG1362918
Tetrachloroethene	U		0.199	0.500	1	10/15/2019 04:18	WG1362918
Toluene	U		0.412	0.500	1	10/15/2019 04:18	WG1362918
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/15/2019 04:18	WG1362918
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/15/2019 04:18	WG1362918
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/15/2019 04:18	WG1362918
1,1,2-Trichloroethane	U		0.186	0.500	1	10/15/2019 04:18	WG1362918
Trichloroethene	U		0.153	0.500	1	10/15/2019 04:18	WG1362918
Trichlorofluoromethane	U		0.130	2.50	1	10/15/2019 04:18	WG1362918
1,2,3-Trichloropropane	U		0.247	2.50	1	10/15/2019 04:18	WG1362918
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/15/2019 04:18	WG1362918
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/15/2019 04:18	WG1362918
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/15/2019 04:18	WG1362918
Vinyl acetate	U		0.645	5.00	1	10/15/2019 04:18	WG1362918
Vinyl chloride	U		0.118	0.500	1	10/15/2019 04:18	WG1362918
Xylenes, Total	U		0.316	1.50	1	10/15/2019 04:18	WG1362918
(S) Toluene-d8	101			80.0-120		10/15/2019 04:18	WG1362918
(S) Toluene-d8	95.9			80.0-120		10/15/2019 17:27	WG1363245
(S) 4-Bromofluorobenzene	103			77.0-126		10/15/2019 04:18	WG1362918
(S) 4-Bromofluorobenzene	94.3			77.0-126		10/15/2019 17:27	WG1363245

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 11/25/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	109			70.0-130		10/15/2019 04:18	WG1362918
(S) 1,2-Dichloroethane-d4	83.9			70.0-130		10/15/2019 17:27	WG1363245

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 11/25/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	589000		2710	20000	1	10/13/2019 15:38	WG1362246

Sample Narrative:

L1146788-07 WG1362246: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	56100		51.9	1000	1	10/05/2019 19:51	WG1357983
Nitrate	U	UJ T8	22.7	100	1	10/05/2019 19:51	WG1357983
Sulfate	11400		77.4	5000	1	10/05/2019 19:51	WG1357983

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	5050	B	102	1000	1	10/11/2019 15:37	WG1361291

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	8060		300	2000	20	10/09/2019 11:17	WG1358528
Manganese	2260		5.00	100	20	10/09/2019 11:17	WG1358528

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	716		0.287	0.678	1	10/10/2019 14:44	WG1360431
Ethane	23.4		0.296	1.29	1	10/10/2019 14:44	WG1360431
Ethene	U		0.422	1.27	1	10/10/2019 14:44	WG1360431

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
	ug/l		ug/l	ug/l		date / time		
Acetone	3.08	U	J JO	1.05	25.0	1	10/15/2019 04:39	WG1362918
Acrylonitrile	U		0.873	5.00	1	10/15/2019 04:39	WG1362918	
Benzene	0.215		J	0.0896	0.500	1	10/15/2019 04:39	WG1362918
Bromobenzene	U		0.133	0.500	1	10/15/2019 04:39	WG1362918	
Bromodichloromethane	U		0.0800	0.500	1	10/15/2019 04:39	WG1362918	
Bromochloromethane	U		0.145	0.500	1	10/15/2019 04:39	WG1362918	
Bromoform	U		0.186	0.500	1	10/15/2019 04:39	WG1362918	
Bromomethane	U		0.157	2.50	1	10/15/2019 04:39	WG1362918	
n-Butylbenzene	U		0.143	0.500	1	10/15/2019 04:39	WG1362918	
sec-Butylbenzene	U		0.134	0.500	1	10/15/2019 04:39	WG1362918	
tert-Butylbenzene	U		0.183	0.500	1	10/15/2019 04:39	WG1362918	
Carbon disulfide	U		0.101	0.500	1	10/15/2019 04:39	WG1362918	
Carbon tetrachloride	U		0.159	0.500	1	10/15/2019 04:39	WG1362918	
Chlorobenzene	U		0.140	0.500	1	10/15/2019 04:39	WG1362918	
Chlorodibromomethane	U		0.128	0.500	1	10/15/2019 04:39	WG1362918	
Chloroethane	U		0.141	2.50	1	10/15/2019 04:39	WG1362918	
Chloroform	U		0.0860	0.500	1	10/15/2019 04:39	WG1362918	
Chloromethane	U		0.153	1.25	1	10/15/2019 04:39	WG1362918	
2-Chlorotoluene	U		0.111	0.500	1	10/15/2019 04:39	WG1362918	
4-Chlorotoluene	U		0.0972	0.500	1	10/15/2019 04:39	WG1362918	

JC 11/25/19

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Collected date/time: 10/03/19 10:10

L1146788

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/15/2019 04:39	WG1362918
1,2-Dibromoethane	U		0.193	0.500	1	10/15/2019 04:39	WG1362918
Dibromomethane	U		0.117	0.500	1	10/15/2019 04:39	WG1362918
1,2-Dichlorobenzene	U		0.101	0.500	1	10/15/2019 04:39	WG1362918
1,3-Dichlorobenzene	U		0.130	0.500	1	10/15/2019 04:39	WG1362918
1,4-Dichlorobenzene	U		0.121	0.500	1	10/15/2019 04:39	WG1362918
Dichlorodifluoromethane	U		0.127	2.50	1	10/15/2019 04:39	WG1362918
1,1-Dichloroethane	U		0.114	0.500	1	10/15/2019 04:39	WG1362918
1,2-Dichloroethane	U		0.108	0.500	1	10/15/2019 04:39	WG1362918
1,1-Dichloroethene	U		0.188	0.500	1	10/15/2019 04:39	WG1362918
cis-1,2-Dichloroethene	9.26		0.0933	0.500	1	10/15/2019 04:39	WG1362918
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/15/2019 04:39	WG1362918
1,2-Dichloropropane	U		0.190	0.500	1	10/15/2019 04:39	WG1362918
1,1-Dichloropropene	U		0.128	0.500	1	10/15/2019 04:39	WG1362918
1,3-Dichloropropane	U		0.147	1.00	1	10/15/2019 04:39	WG1362918
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/15/2019 04:39	WG1362918
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/15/2019 04:39	WG1362918
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/15/2019 04:39	WG1362918
2,2-Dichloropropane	U		0.0929	0.500	1	10/15/2019 04:39	WG1362918
Di-isopropyl ether	U		0.0924	0.500	1	10/15/2019 04:39	WG1362918
Ethylbenzene	U		0.158	0.500	1	10/15/2019 04:39	WG1362918
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/15/2019 04:39	WG1362918
2-Hexanone	U		0.757	5.00	1	10/15/2019 04:39	WG1362918
n-Hexane	U		0.305	5.00	1	10/15/2019 04:39	WG1362918
Iodomethane	U		0.377	10.0	1	10/15/2019 04:39	WG1362918
Isopropylbenzene	U		0.126	0.500	1	10/15/2019 04:39	WG1362918
p-Isopropyltoluene	U		0.138	0.500	1	10/15/2019 04:39	WG1362918
2-Butanone (MEK)	U		1.28	5.00	1	10/15/2019 04:39	WG1362918
Methylene Chloride	U		1.07	2.50	1	10/15/2019 04:39	WG1362918
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/15/2019 04:39	WG1362918
Methyl tert-butyl ether	U		0.102	0.500	1	10/15/2019 04:39	WG1362918
Naphthalene	U		0.174	2.50	1	10/15/2019 04:39	WG1362918
n-Propylbenzene	U		0.162	0.500	1	10/15/2019 04:39	WG1362918
Styrene	U		0.117	0.500	1	10/15/2019 04:39	WG1362918
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/15/2019 04:39	WG1362918
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/15/2019 04:39	WG1362918
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/15/2019 04:39	WG1362918
Tetrachloroethene	U		0.199	0.500	1	10/15/2019 04:39	WG1362918
Toluene	U		0.412	0.500	1	10/15/2019 04:39	WG1362918
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/15/2019 04:39	WG1362918
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/15/2019 04:39	WG1362918
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/15/2019 04:39	WG1362918
1,1,2-Trichloroethane	U		0.186	0.500	1	10/15/2019 04:39	WG1362918
Trichloroethene	U		0.153	0.500	1	10/15/2019 04:39	WG1362918
Trichlorofluoromethane	U		0.130	2.50	1	10/15/2019 04:39	WG1362918
1,2,3-Trichloropropane	U		0.247	2.50	1	10/15/2019 04:39	WG1362918
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/15/2019 04:39	WG1362918
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/15/2019 04:39	WG1362918
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/15/2019 04:39	WG1362918
Vinyl acetate	U		0.645	5.00	1	10/15/2019 04:39	WG1362918
Vinyl chloride	29.2		0.118	0.500	1	10/15/2019 04:39	WG1362918
Xylenes, Total	U		0.316	1.50	1	10/15/2019 04:39	WG1362918
(S) Toluene-d8	102			80.0-120		10/15/2019 04:39	WG1362918
(S) 4-Bromofluorobenzene	104			77.0-126		10/15/2019 04:39	WG1362918
(S) 1,2-Dichloroethane-d4	109			70.0-130		10/15/2019 04:39	WG1362918

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 11/25/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	235000		2710	20000	1	10/13/2019 15:53	WG1362246

Sample Narrative:

L1146788-08 WG1362246: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	21500		51.9	1000	1	10/05/2019 20:07	WG1357983
Nitrate	788	J T8	22.7	100	1	10/05/2019 20:07	WG1357983
Sulfate	112000		387	25000	5	10/07/2019 10:06	WG1357983

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	3280	B	102	1000	1	10/11/2019 17:36	WG1361291

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	701		15.0	100	1	10/09/2019 00:43	WG1358528
Manganese	865		1.25	25.0	5	10/09/2019 11:20	WG1358528

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	31.7		0.287	0.678	1	10/10/2019 14:46	WG1360431
Ethane	U		0.296	1.29	1	10/10/2019 14:46	WG1360431
Ethene	U		0.422	1.27	1	10/10/2019 14:46	WG1360431

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.57	U JJO	1.05	25.0	1	10/15/2019 04:59	WG1362918
Acrylonitrile	U		0.873	5.00	1	10/15/2019 04:59	WG1362918
Benzene	U		0.0896	0.500	1	10/15/2019 04:59	WG1362918
Bromobenzene	U		0.133	0.500	1	10/15/2019 04:59	WG1362918
Bromodichloromethane	U		0.0800	0.500	1	10/15/2019 04:59	WG1362918
Bromochloromethane	U		0.145	0.500	1	10/15/2019 04:59	WG1362918
Bromoform	U		0.186	0.500	1	10/15/2019 04:59	WG1362918
Bromomethane	U		0.157	2.50	1	10/15/2019 04:59	WG1362918
n-Butylbenzene	U		0.143	0.500	1	10/15/2019 04:59	WG1362918
sec-Butylbenzene	U		0.134	0.500	1	10/15/2019 04:59	WG1362918
tert-Butylbenzene	U		0.183	0.500	1	10/15/2019 04:59	WG1362918
Carbon disulfide	U		0.101	0.500	1	10/15/2019 04:59	WG1362918
Carbon tetrachloride	U		0.159	0.500	1	10/15/2019 04:59	WG1362918
Chlorobenzene	U		0.140	0.500	1	10/15/2019 04:59	WG1362918
Chlorodibromomethane	U		0.128	0.500	1	10/15/2019 04:59	WG1362918
Chloroethane	U		0.141	2.50	1	10/15/2019 04:59	WG1362918
Chloroform	U		0.0860	0.500	1	10/15/2019 04:59	WG1362918
Chloromethane	U		0.153	1.25	1	10/15/2019 04:59	WG1362918
2-Chlorotoluene	U		0.111	0.500	1	10/15/2019 04:59	WG1362918
4-Chlorotoluene	U		0.0972	0.500	1	10/15/2019 04:59	WG1362918

JC 11/25/19

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/15/2019 04:59	WG1362918
1,2-Dibromoethane	U		0.193	0.500	1	10/15/2019 04:59	WG1362918
Dibromomethane	U		0.117	0.500	1	10/15/2019 04:59	WG1362918
1,2-Dichlorobenzene	U		0.101	0.500	1	10/15/2019 04:59	WG1362918
1,3-Dichlorobenzene	U		0.130	0.500	1	10/15/2019 04:59	WG1362918
1,4-Dichlorobenzene	U		0.121	0.500	1	10/15/2019 04:59	WG1362918
Dichlorodifluoromethane	U		0.127	2.50	1	10/15/2019 04:59	WG1362918
1,1-Dichloroethane	U		0.114	0.500	1	10/15/2019 04:59	WG1362918
1,2-Dichloroethane	U		0.108	0.500	1	10/15/2019 04:59	WG1362918
1,1-Dichloroethene	U		0.188	0.500	1	10/15/2019 04:59	WG1362918
cis-1,2-Dichloroethene	0.607		0.0933	0.500	1	10/15/2019 04:59	WG1362918
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/15/2019 04:59	WG1362918
1,2-Dichloropropane	U		0.190	0.500	1	10/15/2019 04:59	WG1362918
1,1-Dichloropropene	U		0.128	0.500	1	10/15/2019 04:59	WG1362918
1,3-Dichloropropane	U		0.147	1.00	1	10/15/2019 04:59	WG1362918
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/15/2019 04:59	WG1362918
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/15/2019 04:59	WG1362918
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/15/2019 04:59	WG1362918
2,2-Dichloropropane	U		0.0929	0.500	1	10/15/2019 04:59	WG1362918
Di-isopropyl ether	U		0.0924	0.500	1	10/15/2019 04:59	WG1362918
Ethylbenzene	U		0.158	0.500	1	10/15/2019 04:59	WG1362918
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/15/2019 04:59	WG1362918
2-Hexanone	U		0.757	5.00	1	10/15/2019 04:59	WG1362918
n-Hexane	U		0.305	5.00	1	10/15/2019 04:59	WG1362918
Iodomethane	U		0.377	10.0	1	10/15/2019 04:59	WG1362918
Isopropylbenzene	U		0.126	0.500	1	10/15/2019 04:59	WG1362918
p-Isopropyltoluene	U		0.138	0.500	1	10/15/2019 04:59	WG1362918
2-Butanone (MEK)	U		1.28	5.00	1	10/15/2019 04:59	WG1362918
Methylene Chloride	U		1.07	2.50	1	10/15/2019 04:59	WG1362918
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/15/2019 04:59	WG1362918
Methyl tert-butyl ether	U		0.102	0.500	1	10/15/2019 04:59	WG1362918
Naphthalene	U		0.174	2.50	1	10/15/2019 04:59	WG1362918
n-Propylbenzene	U		0.162	0.500	1	10/15/2019 04:59	WG1362918
Styrene	U		0.117	0.500	1	10/15/2019 04:59	WG1362918
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/15/2019 04:59	WG1362918
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/15/2019 04:59	WG1362918
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/15/2019 04:59	WG1362918
Tetrachloroethene	U		0.199	0.500	1	10/15/2019 04:59	WG1362918
Toluene	U		0.412	0.500	1	10/15/2019 04:59	WG1362918
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/15/2019 04:59	WG1362918
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/15/2019 04:59	WG1362918
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/15/2019 04:59	WG1362918
1,1,2-Trichloroethane	U		0.186	0.500	1	10/15/2019 04:59	WG1362918
Trichloroethene	U		0.153	0.500	1	10/15/2019 04:59	WG1362918
Trichlorofluoromethane	U		0.130	2.50	1	10/15/2019 04:59	WG1362918
1,2,3-Trichloropropane	U		0.247	2.50	1	10/15/2019 04:59	WG1362918
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/15/2019 04:59	WG1362918
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/15/2019 04:59	WG1362918
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/15/2019 04:59	WG1362918
Vinyl acetate	U		0.645	5.00	1	10/15/2019 04:59	WG1362918
Vinyl chloride	U		0.118	0.500	1	10/15/2019 04:59	WG1362918
Xylenes, Total	U		0.316	1.50	1	10/15/2019 04:59	WG1362918
(S) Toluene-d8	102			80.0-120		10/15/2019 04:59	WG1362918
(S) 4-Bromofluorobenzene	103			77.0-126		10/15/2019 04:59	WG1362918
(S) 1,2-Dichloroethane-d4	110			70.0-130		10/15/2019 04:59	WG1362918

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 11/25/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	209000		2710	20000	1	10/13/2019 16:00	WG1362246

Sample Narrative:

L1146788-09 WG1362246: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	17100		51.9	1000	1	10/05/2019 20:56	WG1357983
Nitrate	U	UJ T8	22.7	100	1	10/05/2019 20:56	WG1357983
Sulfate	89700		77.4	5000	1	10/05/2019 20:56	WG1357983

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	12900		102	1000	1	10/11/2019 17:55	WG1361291

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	2630		75.0	500	5	10/09/2019 11:24	WG1358528
Manganese	347		1.25	25.0	5	10/09/2019 11:24	WG1358528

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	99.4		0.287	0.678	1	10/10/2019 14:49	WG1360431
Ethane	25.0		0.296	1.29	1	10/10/2019 14:49	WG1360431
Ethene	8.23		0.422	1.27	1	10/10/2019 14:49	WG1360431

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	4.34	U JJO	1.05	25.0	1	10/15/2019 05:20	WG1362918
Acrylonitrile	U		0.873	5.00	1	10/15/2019 05:20	WG1362918
Benzene	U		0.0896	0.500	1	10/15/2019 05:20	WG1362918
Bromobenzene	U		0.133	0.500	1	10/15/2019 05:20	WG1362918
Bromodichloromethane	U		0.0800	0.500	1	10/15/2019 05:20	WG1362918
Bromochloromethane	U		0.145	0.500	1	10/15/2019 05:20	WG1362918
Bromoform	U		0.186	0.500	1	10/15/2019 05:20	WG1362918
Bromomethane	U		0.157	2.50	1	10/15/2019 05:20	WG1362918
n-Butylbenzene	U		0.143	0.500	1	10/15/2019 05:20	WG1362918
sec-Butylbenzene	U		0.134	0.500	1	10/15/2019 05:20	WG1362918
tert-Butylbenzene	U		0.183	0.500	1	10/15/2019 05:20	WG1362918
Carbon disulfide	4.09		0.101	0.500	1	10/15/2019 05:20	WG1362918
Carbon tetrachloride	U		0.159	0.500	1	10/15/2019 05:20	WG1362918
Chlorobenzene	U		0.140	0.500	1	10/15/2019 05:20	WG1362918
Chlorodibromomethane	U		0.128	0.500	1	10/15/2019 05:20	WG1362918
Chloroethane	U		0.141	2.50	1	10/15/2019 05:20	WG1362918
Chloroform	U		0.0860	0.500	1	10/15/2019 05:20	WG1362918
Chloromethane	U		0.153	1.25	1	10/15/2019 05:20	WG1362918
2-Chlorotoluene	U		0.111	0.500	1	10/15/2019 05:20	WG1362918
4-Chlorotoluene	U		0.0972	0.500	1	10/15/2019 05:20	WG1362918

JC 11/25/19

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/15/2019 05:20	WG1362918
1,2-Dibromoethane	U		0.193	0.500	1	10/15/2019 05:20	WG1362918
Dibromomethane	U		0.117	0.500	1	10/15/2019 05:20	WG1362918
1,2-Dichlorobenzene	U		0.101	0.500	1	10/15/2019 05:20	WG1362918
1,3-Dichlorobenzene	U		0.130	0.500	1	10/15/2019 05:20	WG1362918
1,4-Dichlorobenzene	U		0.121	0.500	1	10/15/2019 05:20	WG1362918
Dichlorodifluoromethane	U		0.127	2.50	1	10/15/2019 05:20	WG1362918
1,1-Dichloroethane	U		0.114	0.500	1	10/15/2019 05:20	WG1362918
1,2-Dichloroethane	U		0.108	0.500	1	10/15/2019 05:20	WG1362918
1,1-Dichloroethene	U		0.188	0.500	1	10/15/2019 05:20	WG1362918
cis-1,2-Dichloroethene	6.87		0.0933	0.500	1	10/15/2019 05:20	WG1362918
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/15/2019 05:20	WG1362918
1,2-Dichloropropane	U		0.190	0.500	1	10/15/2019 05:20	WG1362918
1,1-Dichloropropene	U		0.128	0.500	1	10/15/2019 05:20	WG1362918
1,3-Dichloropropane	U		0.147	1.00	1	10/15/2019 05:20	WG1362918
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/15/2019 05:20	WG1362918
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/15/2019 05:20	WG1362918
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/15/2019 05:20	WG1362918
2,2-Dichloropropane	U		0.0929	0.500	1	10/15/2019 05:20	WG1362918
Di-isopropyl ether	U		0.0924	0.500	1	10/15/2019 05:20	WG1362918
Ethylbenzene	U		0.158	0.500	1	10/15/2019 05:20	WG1362918
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/15/2019 05:20	WG1362918
2-Hexanone	U		0.757	5.00	1	10/15/2019 05:20	WG1362918
n-Hexane	U		0.305	5.00	1	10/15/2019 05:20	WG1362918
Iodomethane	U		0.377	10.0	1	10/15/2019 05:20	WG1362918
Isopropylbenzene	U		0.126	0.500	1	10/15/2019 05:20	WG1362918
p-Isopropyltoluene	U		0.138	0.500	1	10/15/2019 05:20	WG1362918
2-Butanone (MEK)	U		1.28	5.00	1	10/15/2019 05:20	WG1362918
Methylene Chloride	U		1.07	2.50	1	10/15/2019 05:20	WG1362918
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/15/2019 05:20	WG1362918
Methyl tert-butyl ether	U		0.102	0.500	1	10/15/2019 05:20	WG1362918
Naphthalene	U		0.174	2.50	1	10/15/2019 05:20	WG1362918
n-Propylbenzene	U		0.162	0.500	1	10/15/2019 05:20	WG1362918
Styrene	U		0.117	0.500	1	10/15/2019 05:20	WG1362918
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/15/2019 05:20	WG1362918
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/15/2019 05:20	WG1362918
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/15/2019 05:20	WG1362918
Tetrachloroethene	0.769		0.199	0.500	1	10/15/2019 05:20	WG1362918
Toluene	1.31		0.412	0.500	1	10/15/2019 05:20	WG1362918
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/15/2019 05:20	WG1362918
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/15/2019 05:20	WG1362918
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/15/2019 05:20	WG1362918
1,1,2-Trichloroethane	U		0.186	0.500	1	10/15/2019 05:20	WG1362918
Trichloroethene	0.297	U	0.153	0.500	1	10/15/2019 05:20	WG1362918
Trichlorofluoromethane	U		0.130	2.50	1	10/15/2019 05:20	WG1362918
1,2,3-Trichloropropane	U		0.247	2.50	1	10/15/2019 05:20	WG1362918
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/15/2019 05:20	WG1362918
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/15/2019 05:20	WG1362918
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/15/2019 05:20	WG1362918
Vinyl acetate	U		0.645	5.00	1	10/15/2019 05:20	WG1362918
Vinyl chloride	U		0.118	0.500	1	10/15/2019 05:20	WG1362918
Xylenes, Total	U		0.316	1.50	1	10/15/2019 05:20	WG1362918
(S) Toluene-d8	103			80.0-120		10/15/2019 05:20	WG1362918
(S) 4-Bromofluorobenzene	103			77.0-126		10/15/2019 05:20	WG1362918
(S) 1,2-Dichloroethane-d4	109			70.0-130		10/15/2019 05:20	WG1362918

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 11/25/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	581000		2710	20000	1	10/13/2019 16:07	WG1362246

Sample Narrative:

L1146788-10 WG1362246: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	56100		51.9	1000	1	10/05/2019 14:53	WG1357983
Nitrate	U UJ	T8	22.7	100	1	10/05/2019 14:53	WG1357983
Sulfate	11400		77.4	5000	1	10/05/2019 14:53	WG1357983

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	4820	B	102	1000	1	10/11/2019 18:16	WG1361291

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	7710		300	2000	20	10/09/2019 11:28	WG1358528
Manganese	2210		5.00	100	20	10/09/2019 11:28	WG1358528

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	591		0.287	0.678	1	10/10/2019 14:51	WG1360431
Ethane	19.9		0.296	1.29	1	10/10/2019 14:51	WG1360431
Ethene	U		0.422	1.27	1	10/10/2019 14:51	WG1360431

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
	ug/l		ug/l	ug/l		date / time		
Acetone	3.15	U	J JO	1.05	25.0	1	10/15/2019 05:41	WG1362918
Acrylonitrile	U		0.873	5.00	1	10/15/2019 05:41	WG1362918	
Benzene	0.206		J	0.0896	0.500	1	10/15/2019 05:41	WG1362918
Bromobenzene	U		0.133	0.500	1	10/15/2019 05:41	WG1362918	
Bromodichloromethane	U		0.0800	0.500	1	10/15/2019 05:41	WG1362918	
Bromochloromethane	U		0.145	0.500	1	10/15/2019 05:41	WG1362918	
Bromoform	U		0.186	0.500	1	10/15/2019 05:41	WG1362918	
Bromomethane	U		0.157	2.50	1	10/15/2019 05:41	WG1362918	
n-Butylbenzene	U		0.143	0.500	1	10/15/2019 05:41	WG1362918	
sec-Butylbenzene	U		0.134	0.500	1	10/15/2019 05:41	WG1362918	
tert-Butylbenzene	U		0.183	0.500	1	10/15/2019 05:41	WG1362918	
Carbon disulfide	U		0.101	0.500	1	10/15/2019 05:41	WG1362918	
Carbon tetrachloride	U		0.159	0.500	1	10/15/2019 05:41	WG1362918	
Chlorobenzene	U		0.140	0.500	1	10/15/2019 05:41	WG1362918	
Chlorodibromomethane	U		0.128	0.500	1	10/15/2019 05:41	WG1362918	
Chloroethane	U		0.141	2.50	1	10/15/2019 05:41	WG1362918	
Chloroform	U		0.0860	0.500	1	10/15/2019 05:41	WG1362918	
Chloromethane	U		0.153	1.25	1	10/15/2019 05:41	WG1362918	
2-Chlorotoluene	U		0.111	0.500	1	10/15/2019 05:41	WG1362918	
4-Chlorotoluene	U		0.0972	0.500	1	10/15/2019 05:41	WG1362918	

JC 11/25/19

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/15/2019 05:41	WG1362918
1,2-Dibromoethane	U		0.193	0.500	1	10/15/2019 05:41	WG1362918
Dibromomethane	U		0.117	0.500	1	10/15/2019 05:41	WG1362918
1,2-Dichlorobenzene	U		0.101	0.500	1	10/15/2019 05:41	WG1362918
1,3-Dichlorobenzene	U		0.130	0.500	1	10/15/2019 05:41	WG1362918
1,4-Dichlorobenzene	U		0.121	0.500	1	10/15/2019 05:41	WG1362918
Dichlorodifluoromethane	U		0.127	2.50	1	10/15/2019 05:41	WG1362918
1,1-Dichloroethane	U		0.114	0.500	1	10/15/2019 05:41	WG1362918
1,2-Dichloroethane	U		0.108	0.500	1	10/15/2019 05:41	WG1362918
1,1-Dichloroethene	U		0.188	0.500	1	10/15/2019 05:41	WG1362918
cis-1,2-Dichloroethene	9.25		0.0933	0.500	1	10/15/2019 05:41	WG1362918
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/15/2019 05:41	WG1362918
1,2-Dichloropropane	U		0.190	0.500	1	10/15/2019 05:41	WG1362918
1,1-Dichloropropene	U		0.128	0.500	1	10/15/2019 05:41	WG1362918
1,3-Dichloropropane	U		0.147	1.00	1	10/15/2019 05:41	WG1362918
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/15/2019 05:41	WG1362918
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/15/2019 05:41	WG1362918
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/15/2019 05:41	WG1362918
2,2-Dichloropropane	U		0.0929	0.500	1	10/15/2019 05:41	WG1362918
Di-isopropyl ether	U		0.0924	0.500	1	10/15/2019 05:41	WG1362918
Ethylbenzene	U		0.158	0.500	1	10/15/2019 05:41	WG1362918
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/15/2019 05:41	WG1362918
2-Hexanone	U		0.757	5.00	1	10/15/2019 05:41	WG1362918
n-Hexane	U		0.305	5.00	1	10/15/2019 05:41	WG1362918
Iodomethane	U		0.377	10.0	1	10/15/2019 05:41	WG1362918
Isopropylbenzene	U		0.126	0.500	1	10/15/2019 05:41	WG1362918
p-Isopropyltoluene	U		0.138	0.500	1	10/15/2019 05:41	WG1362918
2-Butanone (MEK)	U		1.28	5.00	1	10/15/2019 05:41	WG1362918
Methylene Chloride	U		1.07	2.50	1	10/15/2019 05:41	WG1362918
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/15/2019 05:41	WG1362918
Methyl tert-butyl ether	U		0.102	0.500	1	10/15/2019 05:41	WG1362918
Naphthalene	U		0.174	2.50	1	10/15/2019 05:41	WG1362918
n-Propylbenzene	U		0.162	0.500	1	10/15/2019 05:41	WG1362918
Styrene	U		0.117	0.500	1	10/15/2019 05:41	WG1362918
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/15/2019 05:41	WG1362918
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/15/2019 05:41	WG1362918
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/15/2019 05:41	WG1362918
Tetrachloroethene	U		0.199	0.500	1	10/15/2019 05:41	WG1362918
Toluene	0.435	U	0.412	0.500	1	10/15/2019 05:41	WG1362918
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/15/2019 05:41	WG1362918
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/15/2019 05:41	WG1362918
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/15/2019 05:41	WG1362918
1,1,2-Trichloroethane	U		0.186	0.500	1	10/15/2019 05:41	WG1362918
Trichloroethene	U		0.153	0.500	1	10/15/2019 05:41	WG1362918
Trichlorofluoromethane	U		0.130	2.50	1	10/15/2019 05:41	WG1362918
1,2,3-Trichloropropane	U		0.247	2.50	1	10/15/2019 05:41	WG1362918
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/15/2019 05:41	WG1362918
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/15/2019 05:41	WG1362918
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/15/2019 05:41	WG1362918
Vinyl acetate	U		0.645	5.00	1	10/15/2019 05:41	WG1362918
Vinyl chloride	28.8		0.118	0.500	1	10/15/2019 05:41	WG1362918
Xylenes, Total	U		0.316	1.50	1	10/15/2019 05:41	WG1362918
(S) Toluene-d8	102			80.0-120		10/15/2019 05:41	WG1362918
(S) 4-Bromofluorobenzene	104			77.0-126		10/15/2019 05:41	WG1362918
(S) 1,2-Dichloroethane-d4	108			70.0-130		10/15/2019 05:41	WG1362918

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 11/25/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	1780000		13600	100000	5	10/13/2019 16:21	WG1362246

Sample Narrative:

L1147264-01 WG1362246: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	12700		51.9	1000	1	10/08/2019 13:48	WG1359094
Nitrate	U		22.7	100	1	10/08/2019 13:48	WG1359094
Sulfate	5080		77.4	5000	1	10/08/2019 13:48	WG1359094

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	8510		102	1000	1	10/12/2019 12:37	WG1361291

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	1600		15.0	100	1	10/11/2019 17:01	WG1360463
Manganese	2370		5.00	100	20	10/11/2019 18:28	WG1360463

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	264		0.287	0.678	1	10/09/2019 15:54	WG1359638
Ethane	U		0.296	1.29	1	10/09/2019 15:54	WG1359638
Ethene	U		0.422	1.27	1	10/09/2019 15:54	WG1359638

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
	ug/l		ug/l	ug/l		date / time		
Acetone	2.81	U	J JO	1.05	25.0	1	10/15/2019 06:42	WG1362918
Acrylonitrile	U		0.873	5.00	1	10/15/2019 06:42	WG1362918	
Benzene	U		0.0896	0.500	1	10/15/2019 06:42	WG1362918	
Bromobenzene	U		0.133	0.500	1	10/15/2019 06:42	WG1362918	
Bromodichloromethane	U		0.0800	0.500	1	10/15/2019 06:42	WG1362918	
Bromochloromethane	U		0.145	0.500	1	10/15/2019 06:42	WG1362918	
Bromoform	U		0.186	0.500	1	10/15/2019 06:42	WG1362918	
Bromomethane	U		0.157	2.50	1	10/15/2019 06:42	WG1362918	
n-Butylbenzene	0.200		J	0.143	0.500	1	10/15/2019 06:42	WG1362918
sec-Butylbenzene	2.82		0.134	0.500	1	10/15/2019 06:42	WG1362918	
tert-Butylbenzene	1.89		0.183	0.500	1	10/15/2019 06:42	WG1362918	
Carbon disulfide	U		0.101	0.500	1	10/15/2019 06:42	WG1362918	
Carbon tetrachloride	U		0.159	0.500	1	10/15/2019 06:42	WG1362918	
Chlorobenzene	U		0.140	0.500	1	10/15/2019 06:42	WG1362918	
Chlorodibromomethane	U		0.128	0.500	1	10/15/2019 06:42	WG1362918	
Chloroethane	U		0.141	2.50	1	10/15/2019 06:42	WG1362918	
Chloroform	U		0.0860	0.500	1	10/15/2019 06:42	WG1362918	
Chloromethane	U		0.153	1.25	1	10/15/2019 06:42	WG1362918	
2-Chlorotoluene	U		0.111	0.500	1	10/15/2019 06:42	WG1362918	
4-Chlorotoluene	U		0.0972	0.500	1	10/15/2019 06:42	WG1362918	

JC 11/25/19

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/15/2019 06:42	WG1362918
1,2-Dibromoethane	U		0.193	0.500	1	10/15/2019 06:42	WG1362918
Dibromomethane	U		0.117	0.500	1	10/15/2019 06:42	WG1362918
1,2-Dichlorobenzene	U		0.101	0.500	1	10/15/2019 06:42	WG1362918
1,3-Dichlorobenzene	U		0.130	0.500	1	10/15/2019 06:42	WG1362918
1,4-Dichlorobenzene	U		0.121	0.500	1	10/15/2019 06:42	WG1362918
Dichlorodifluoromethane	U		0.127	2.50	1	10/15/2019 06:42	WG1362918
1,1-Dichloroethane	U		0.114	0.500	1	10/15/2019 06:42	WG1362918
1,2-Dichloroethane	U		0.108	0.500	1	10/15/2019 06:42	WG1362918
1,1-Dichloroethene	U		0.188	0.500	1	10/15/2019 06:42	WG1362918
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/15/2019 06:42	WG1362918
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/15/2019 06:42	WG1362918
1,2-Dichloropropane	U		0.190	0.500	1	10/15/2019 06:42	WG1362918
1,1-Dichloropropene	U		0.128	0.500	1	10/15/2019 06:42	WG1362918
1,3-Dichloropropane	U		0.147	1.00	1	10/15/2019 06:42	WG1362918
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/15/2019 06:42	WG1362918
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/15/2019 06:42	WG1362918
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/15/2019 06:42	WG1362918
2,2-Dichloropropane	U		0.0929	0.500	1	10/15/2019 06:42	WG1362918
Di-isopropyl ether	U		0.0924	0.500	1	10/15/2019 06:42	WG1362918
Ethylbenzene	U		0.158	0.500	1	10/15/2019 06:42	WG1362918
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/15/2019 06:42	WG1362918
2-Hexanone	U		0.757	5.00	1	10/15/2019 06:42	WG1362918
n-Hexane	U		0.305	5.00	1	10/15/2019 06:42	WG1362918
Iodomethane	U		0.377	10.0	1	10/15/2019 06:42	WG1362918
Isopropylbenzene	2.62		0.126	0.500	1	10/15/2019 06:42	WG1362918
p-Isopropyltoluene	U		0.138	0.500	1	10/15/2019 06:42	WG1362918
2-Butanone (MEK)	U		1.28	5.00	1	10/15/2019 06:42	WG1362918
Methylene Chloride	U		1.07	2.50	1	10/15/2019 06:42	WG1362918
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/15/2019 06:42	WG1362918
Methyl tert-butyl ether	U		0.102	0.500	1	10/15/2019 06:42	WG1362918
Naphthalene	U		0.174	2.50	1	10/15/2019 06:42	WG1362918
n-Propylbenzene	3.22		0.162	0.500	1	10/15/2019 06:42	WG1362918
Styrene	U		0.117	0.500	1	10/15/2019 06:42	WG1362918
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/15/2019 06:42	WG1362918
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/15/2019 06:42	WG1362918
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/15/2019 06:42	WG1362918
Tetrachloroethene	U		0.199	0.500	1	10/15/2019 06:42	WG1362918
Toluene	0.459	U	0.412	0.500	1	10/15/2019 06:42	WG1362918
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/15/2019 06:42	WG1362918
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/15/2019 06:42	WG1362918
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/15/2019 06:42	WG1362918
1,1,2-Trichloroethane	U		0.186	0.500	1	10/15/2019 06:42	WG1362918
Trichloroethene	U		0.153	0.500	1	10/15/2019 06:42	WG1362918
Trichlorofluoromethane	U		0.130	2.50	1	10/15/2019 06:42	WG1362918
1,2,3-Trichloropropane	U		0.247	2.50	1	10/15/2019 06:42	WG1362918
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/15/2019 06:42	WG1362918
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/15/2019 06:42	WG1362918
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/15/2019 06:42	WG1362918
Vinyl acetate	U		0.645	5.00	1	10/15/2019 06:42	WG1362918
Vinyl chloride	U		0.118	0.500	1	10/15/2019 06:42	WG1362918
Xylenes, Total	U		0.316	1.50	1	10/15/2019 06:42	WG1362918
(S) Toluene-d8	80.5			80.0-120		10/15/2019 06:42	WG1362918
(S) 4-Bromofluorobenzene	89.1			77.0-126		10/15/2019 06:42	WG1362918
(S) 1,2-Dichloroethane-d4	109			70.0-130		10/15/2019 06:42	WG1362918

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 11/25/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	841000		2710	20000	1	10/13/2019 16:28	WG1362246

Sample Narrative:

L1147264-02 WG1362246: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	30400		51.9	1000	1	10/08/2019 14:32	WG1359094
Nitrate	U		22.7	100	1	10/08/2019 14:32	WG1359094
Sulfate	21100		77.4	5000	1	10/08/2019 14:32	WG1359094

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	19400		102	1000	1	10/12/2019 13:02	WG1361291

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	43900		750	5000	50	10/11/2019 18:32	WG1360463
Manganese	4260		12.5	250	50	10/11/2019 18:32	WG1360463

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	3090		0.287	0.678	1	10/09/2019 16:02	WG1359638
Ethane	59.1		0.296	1.29	1	10/09/2019 16:02	WG1359638
Ethene	20.8		0.422	1.27	1	10/09/2019 16:02	WG1359638

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
	ug/l		ug/l	ug/l		date / time		
Acetone	3.40	U	JJO	1.05	25.0	1	10/15/2019 07:03	WG1362918
Acrylonitrile	U		0.873	5.00	1	10/15/2019 07:03	WG1362918	
Benzene	7.12		0.0896	0.500	1	10/15/2019 07:03	WG1362918	
Bromobenzene	U		0.133	0.500	1	10/15/2019 07:03	WG1362918	
Bromodichloromethane	U		0.0800	0.500	1	10/15/2019 07:03	WG1362918	
Bromochloromethane	U		0.145	0.500	1	10/15/2019 07:03	WG1362918	
Bromoform	U		0.186	0.500	1	10/15/2019 07:03	WG1362918	
Bromomethane	U		0.157	2.50	1	10/15/2019 07:03	WG1362918	
n-Butylbenzene	U		0.143	0.500	1	10/15/2019 07:03	WG1362918	
sec-Butylbenzene	U		0.134	0.500	1	10/15/2019 07:03	WG1362918	
tert-Butylbenzene	U		0.183	0.500	1	10/15/2019 07:03	WG1362918	
Carbon disulfide	U		0.101	0.500	1	10/15/2019 07:03	WG1362918	
Carbon tetrachloride	U		0.159	0.500	1	10/15/2019 07:03	WG1362918	
Chlorobenzene	U		0.140	0.500	1	10/15/2019 07:03	WG1362918	
Chlorodibromomethane	U		0.128	0.500	1	10/15/2019 07:03	WG1362918	
Chloroethane	U		0.141	2.50	1	10/15/2019 07:03	WG1362918	
Chloroform	U		0.0860	0.500	1	10/15/2019 07:03	WG1362918	
Chloromethane	U		0.153	1.25	1	10/15/2019 07:03	WG1362918	
2-Chlorotoluene	U		0.111	0.500	1	10/15/2019 07:03	WG1362918	
4-Chlorotoluene	U		0.0972	0.500	1	10/15/2019 07:03	WG1362918	

JC 11/25/19

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/15/2019 07:03	WG1362918
1,2-Dibromoethane	U		0.193	0.500	1	10/15/2019 07:03	WG1362918
Dibromomethane	U		0.117	0.500	1	10/15/2019 07:03	WG1362918
1,2-Dichlorobenzene	U		0.101	0.500	1	10/15/2019 07:03	WG1362918
1,3-Dichlorobenzene	U		0.130	0.500	1	10/15/2019 07:03	WG1362918
1,4-Dichlorobenzene	U		0.121	0.500	1	10/15/2019 07:03	WG1362918
Dichlorodifluoromethane	U		0.127	2.50	1	10/15/2019 07:03	WG1362918
1,1-Dichloroethane	U		0.114	0.500	1	10/15/2019 07:03	WG1362918
1,2-Dichloroethane	U		0.108	0.500	1	10/15/2019 07:03	WG1362918
1,1-Dichloroethene	1.23		0.188	0.500	1	10/15/2019 07:03	WG1362918
cis-1,2-Dichloroethene	497		1.87	10.0	20	10/15/2019 17:47	WG1363245
trans-1,2-Dichloroethene	1.17		0.152	0.500	1	10/15/2019 07:03	WG1362918
1,2-Dichloropropane	U		0.190	0.500	1	10/15/2019 07:03	WG1362918
1,1-Dichloropropene	U		0.128	0.500	1	10/15/2019 07:03	WG1362918
1,3-Dichloropropane	U		0.147	1.00	1	10/15/2019 07:03	WG1362918
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/15/2019 07:03	WG1362918
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/15/2019 07:03	WG1362918
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/15/2019 07:03	WG1362918
2,2-Dichloropropane	U		0.0929	0.500	1	10/15/2019 07:03	WG1362918
Di-isopropyl ether	0.112	U	0.0924	0.500	1	10/15/2019 07:03	WG1362918
Ethylbenzene	U		0.158	0.500	1	10/15/2019 07:03	WG1362918
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/15/2019 07:03	WG1362918
2-Hexanone	U		0.757	5.00	1	10/15/2019 07:03	WG1362918
n-Hexane	U		0.305	5.00	1	10/15/2019 07:03	WG1362918
Iodomethane	U		0.377	10.0	1	10/15/2019 07:03	WG1362918
Isopropylbenzene	U		0.126	0.500	1	10/15/2019 07:03	WG1362918
p-Isopropyltoluene	U		0.138	0.500	1	10/15/2019 07:03	WG1362918
2-Butanone (MEK)	U		1.28	5.00	1	10/15/2019 07:03	WG1362918
Methylene Chloride	U		1.07	2.50	1	10/15/2019 07:03	WG1362918
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/15/2019 07:03	WG1362918
Methyl tert-butyl ether	U		0.102	0.500	1	10/15/2019 07:03	WG1362918
Naphthalene	U		0.174	2.50	1	10/15/2019 07:03	WG1362918
n-Propylbenzene	U		0.162	0.500	1	10/15/2019 07:03	WG1362918
Styrene	U		0.117	0.500	1	10/15/2019 07:03	WG1362918
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/15/2019 07:03	WG1362918
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/15/2019 07:03	WG1362918
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/15/2019 07:03	WG1362918
Tetrachloroethene	0.699		0.199	0.500	1	10/15/2019 07:03	WG1362918
Toluene	0.612		0.412	0.500	1	10/15/2019 07:03	WG1362918
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/15/2019 07:03	WG1362918
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/15/2019 07:03	WG1362918
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/15/2019 07:03	WG1362918
1,1,2-Trichloroethane	U		0.186	0.500	1	10/15/2019 07:03	WG1362918
Trichloroethene	21.0		0.153	0.500	1	10/15/2019 07:03	WG1362918
Trichlorofluoromethane	U		0.130	2.50	1	10/15/2019 07:03	WG1362918
1,2,3-Trichloropropane	U		0.247	2.50	1	10/15/2019 07:03	WG1362918
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/15/2019 07:03	WG1362918
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/15/2019 07:03	WG1362918
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/15/2019 07:03	WG1362918
Vinyl acetate	U		0.645	5.00	1	10/15/2019 07:03	WG1362918
Vinyl chloride	268		2.36	10.0	20	10/15/2019 17:47	WG1363245
Xylenes, Total	U		0.316	1.50	1	10/15/2019 07:03	WG1362918
(S) Toluene-d8	103			80.0-120		10/15/2019 07:03	WG1362918
(S) Toluene-d8	96.5			80.0-120		10/15/2019 17:47	WG1363245
(S) 4-Bromofluorobenzene	105			77.0-126		10/15/2019 07:03	WG1362918
(S) 4-Bromofluorobenzene	94.9			77.0-126		10/15/2019 17:47	WG1363245

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 11/25/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	107			70.0-130		10/15/2019 07:03	WG1362918
(S) 1,2-Dichloroethane-d4	86.3			70.0-130		10/15/2019 17:47	WG1363245

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 11/25/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	339000		2710	20000	1	10/15/2019 14:51	WG1362380

Sample Narrative:

L1147791-01 WG1362380: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	24100		51.9	1000	1	10/09/2019 17:14	WG1359667
Nitrate	U		22.7	100	1	10/09/2019 17:14	WG1359667
Sulfate	119000		387	25000	5	10/10/2019 09:51	WG1359667

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	6730		102	1000	1	10/13/2019 18:41	WG1362294

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	11700		300	2000	20	10/13/2019 21:58	WG1360694
Manganese	2330		5.00	100	20	10/13/2019 21:58	WG1360694

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	355		0.287	0.678	1	10/12/2019 07:37	WG1361751
Ethane	12.8		0.296	1.29	1	10/12/2019 07:37	WG1361751
Ethene	U		0.422	1.27	1	10/12/2019 07:37	WG1361751

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.15	U J	1.05	25.0	1	10/17/2019 17:04	WG1364657
Acrylonitrile	U		0.873	5.00	1	10/17/2019 17:04	WG1364657
Benzene	5.75		0.0896	0.500	1	10/17/2019 17:04	WG1364657
Bromobenzene	U		0.133	0.500	1	10/17/2019 17:04	WG1364657
Bromodichloromethane	U		0.0800	0.500	1	10/17/2019 17:04	WG1364657
Bromochloromethane	U		0.145	0.500	1	10/17/2019 17:04	WG1364657
Bromoform	U		0.186	0.500	1	10/17/2019 17:04	WG1364657
Bromomethane	U		0.157	2.50	1	10/17/2019 17:04	WG1364657
n-Butylbenzene	U		0.143	0.500	1	10/17/2019 17:04	WG1364657
sec-Butylbenzene	U		0.134	0.500	1	10/17/2019 17:04	WG1364657
tert-Butylbenzene	U		0.183	0.500	1	10/17/2019 17:04	WG1364657
Carbon disulfide	U		0.101	0.500	1	10/17/2019 17:04	WG1364657
Carbon tetrachloride	U		0.159	0.500	1	10/17/2019 17:04	WG1364657
Chlorobenzene	U		0.140	0.500	1	10/17/2019 17:04	WG1364657
Chlorodibromomethane	U		0.128	0.500	1	10/17/2019 17:04	WG1364657
Chloroethane	U		0.141	2.50	1	10/17/2019 17:04	WG1364657
Chloroform	U		0.0860	0.500	1	10/17/2019 17:04	WG1364657
Chloromethane	U		0.153	1.25	1	10/17/2019 17:04	WG1364657
2-Chlorotoluene	U		0.111	0.500	1	10/17/2019 17:04	WG1364657
4-Chlorotoluene	U		0.0972	0.500	1	10/17/2019 17:04	WG1364657

JC 11/25/19

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Collected date/time: 10/08/19 14:40

L1147791

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/17/2019 17:04	WG1364657
1,2-Dibromoethane	U		0.193	0.500	1	10/17/2019 17:04	WG1364657
Dibromomethane	U		0.117	0.500	1	10/17/2019 17:04	WG1364657
1,2-Dichlorobenzene	U		0.101	0.500	1	10/17/2019 17:04	WG1364657
1,3-Dichlorobenzene	U		0.130	0.500	1	10/17/2019 17:04	WG1364657
1,4-Dichlorobenzene	U		0.121	0.500	1	10/17/2019 17:04	WG1364657
Dichlorodifluoromethane	U		0.127	2.50	1	10/17/2019 17:04	WG1364657
1,1-Dichloroethane	0.490	U	0.114	0.500	1	10/17/2019 17:04	WG1364657
1,2-Dichloroethane	1.55		0.108	0.500	1	10/17/2019 17:04	WG1364657
1,1-Dichloroethene	U		0.188	0.500	1	10/17/2019 17:04	WG1364657
cis-1,2-Dichloroethene	6.52		0.0933	0.500	1	10/17/2019 17:04	WG1364657
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/17/2019 17:04	WG1364657
1,2-Dichloropropane	0.274	U	0.190	0.500	1	10/17/2019 17:04	WG1364657
1,1-Dichloropropene	U		0.128	0.500	1	10/17/2019 17:04	WG1364657
1,3-Dichloropropane	U		0.147	1.00	1	10/17/2019 17:04	WG1364657
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/17/2019 17:04	WG1364657
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/17/2019 17:04	WG1364657
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/17/2019 17:04	WG1364657
2,2-Dichloropropane	U		0.0929	0.500	1	10/17/2019 17:04	WG1364657
Di-isopropyl ether	U		0.0924	0.500	1	10/17/2019 17:04	WG1364657
Ethylbenzene	U		0.158	0.500	1	10/17/2019 17:04	WG1364657
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/17/2019 17:04	WG1364657
2-Hexanone	U		0.757	5.00	1	10/17/2019 17:04	WG1364657
n-Hexane	U		0.305	5.00	1	10/17/2019 17:04	WG1364657
Iodomethane	U		0.377	10.0	1	10/17/2019 17:04	WG1364657
Isopropylbenzene	U		0.126	0.500	1	10/17/2019 17:04	WG1364657
p-Isopropyltoluene	U		0.138	0.500	1	10/17/2019 17:04	WG1364657
2-Butanone (MEK)	U		1.28	5.00	1	10/17/2019 17:04	WG1364657
Methylene Chloride	U		1.07	2.50	1	10/17/2019 17:04	WG1364657
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/17/2019 17:04	WG1364657
Methyl tert-butyl ether	U		0.102	0.500	1	10/17/2019 17:04	WG1364657
Naphthalene	U		0.174	2.50	1	10/17/2019 17:04	WG1364657
n-Propylbenzene	U		0.162	0.500	1	10/17/2019 17:04	WG1364657
Styrene	U		0.117	0.500	1	10/17/2019 17:04	WG1364657
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/17/2019 17:04	WG1364657
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/17/2019 17:04	WG1364657
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/17/2019 17:04	WG1364657
Tetrachloroethene	U		0.199	0.500	1	10/17/2019 17:04	WG1364657
Toluene	0.495	U	0.412	0.500	1	10/17/2019 17:04	WG1364657
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/17/2019 17:04	WG1364657
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/17/2019 17:04	WG1364657
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/17/2019 17:04	WG1364657
1,1,2-Trichloroethane	U		0.186	0.500	1	10/17/2019 17:04	WG1364657
Trichloroethene	U		0.153	0.500	1	10/17/2019 17:04	WG1364657
Trichlorofluoromethane	U		0.130	2.50	1	10/17/2019 17:04	WG1364657
1,2,3-Trichloropropane	U		0.247	2.50	1	10/17/2019 17:04	WG1364657
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/17/2019 17:04	WG1364657
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/17/2019 17:04	WG1364657
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/17/2019 17:04	WG1364657
Vinyl acetate	U		0.645	5.00	1	10/17/2019 17:04	WG1364657
Vinyl chloride	8.65		0.118	0.500	1	10/17/2019 17:04	WG1364657
Xylenes, Total	U		0.316	1.50	1	10/17/2019 17:04	WG1364657
(S) Toluene-d8	112			80.0-120		10/17/2019 17:04	WG1364657
(S) 4-Bromofluorobenzene	115			77.0-126		10/17/2019 17:04	WG1364657
(S) 1,2-Dichloroethane-d4	109			70.0-130		10/17/2019 17:04	WG1364657

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 11/25/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	234000		2710	20000	1	10/15/2019 14:58	WG1362380

Sample Narrative:

L1147791-02 WG1362380: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	16500		51.9	1000	1	10/09/2019 16:21	WG1359967
Nitrate	U		22.7	100	1	10/09/2019 16:21	WG1359967
Sulfate	85000		77.4	5000	1	10/09/2019 16:21	WG1359967

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	1680	B	102	1000	1	10/12/2019 14:04	WG1361408

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	4300		75.0	500	5	10/13/2019 22:03	WG1360694
Manganese	854		1.25	25.0	5	10/13/2019 22:03	WG1360694

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	152		0.287	0.678	1	10/12/2019 07:40	WG1361751
Ethane	U		0.296	1.29	1	10/12/2019 07:40	WG1361751
Ethene	U		0.422	1.27	1	10/12/2019 07:40	WG1361751

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		1.05	25.0	1	10/17/2019 17:24	WG1364657
Acrylonitrile	U		0.873	5.00	1	10/17/2019 17:24	WG1364657
Benzene	U		0.0896	0.500	1	10/17/2019 17:24	WG1364657
Bromobenzene	U		0.133	0.500	1	10/17/2019 17:24	WG1364657
Bromodichloromethane	U		0.0800	0.500	1	10/17/2019 17:24	WG1364657
Bromochloromethane	U		0.145	0.500	1	10/17/2019 17:24	WG1364657
Bromoform	U		0.186	0.500	1	10/17/2019 17:24	WG1364657
Bromomethane	U		0.157	2.50	1	10/17/2019 17:24	WG1364657
n-Butylbenzene	U		0.143	0.500	1	10/17/2019 17:24	WG1364657
sec-Butylbenzene	U		0.134	0.500	1	10/17/2019 17:24	WG1364657
tert-Butylbenzene	U		0.183	0.500	1	10/17/2019 17:24	WG1364657
Carbon disulfide	0.505		0.101	0.500	1	10/17/2019 17:24	WG1364657
Carbon tetrachloride	U		0.159	0.500	1	10/17/2019 17:24	WG1364657
Chlorobenzene	U		0.140	0.500	1	10/17/2019 17:24	WG1364657
Chlorodibromomethane	U		0.128	0.500	1	10/17/2019 17:24	WG1364657
Chloroethane	U		0.141	2.50	1	10/17/2019 17:24	WG1364657
Chloroform	U		0.0860	0.500	1	10/17/2019 17:24	WG1364657
Chloromethane	U		0.153	1.25	1	10/17/2019 17:24	WG1364657
2-Chlorotoluene	U		0.111	0.500	1	10/17/2019 17:24	WG1364657
4-Chlorotoluene	U		0.0972	0.500	1	10/17/2019 17:24	WG1364657

JC 11/25/19

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/17/2019 17:24	WG1364657
1,2-Dibromoethane	U		0.193	0.500	1	10/17/2019 17:24	WG1364657
Dibromomethane	U		0.117	0.500	1	10/17/2019 17:24	WG1364657
1,2-Dichlorobenzene	U		0.101	0.500	1	10/17/2019 17:24	WG1364657
1,3-Dichlorobenzene	U		0.130	0.500	1	10/17/2019 17:24	WG1364657
1,4-Dichlorobenzene	U		0.121	0.500	1	10/17/2019 17:24	WG1364657
Dichlorodifluoromethane	U		0.127	2.50	1	10/17/2019 17:24	WG1364657
1,1-Dichloroethane	0.641		0.114	0.500	1	10/17/2019 17:24	WG1364657
1,2-Dichloroethane	0.140	U	0.108	0.500	1	10/17/2019 17:24	WG1364657
1,1-Dichloroethene	0.292	U	0.188	0.500	1	10/17/2019 17:24	WG1364657
cis-1,2-Dichloroethene	53.4		0.0933	0.500	1	10/17/2019 17:24	WG1364657
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/17/2019 17:24	WG1364657
1,2-Dichloropropane	U		0.190	0.500	1	10/17/2019 17:24	WG1364657
1,1-Dichloropropene	U		0.128	0.500	1	10/17/2019 17:24	WG1364657
1,3-Dichloropropane	U		0.147	1.00	1	10/17/2019 17:24	WG1364657
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/17/2019 17:24	WG1364657
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/17/2019 17:24	WG1364657
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/17/2019 17:24	WG1364657
2,2-Dichloropropane	U		0.0929	0.500	1	10/17/2019 17:24	WG1364657
Di-isopropyl ether	U		0.0924	0.500	1	10/17/2019 17:24	WG1364657
Ethylbenzene	U		0.158	0.500	1	10/17/2019 17:24	WG1364657
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/17/2019 17:24	WG1364657
2-Hexanone	U		0.757	5.00	1	10/17/2019 17:24	WG1364657
n-Hexane	U		0.305	5.00	1	10/17/2019 17:24	WG1364657
Iodomethane	U		0.377	10.0	1	10/17/2019 17:24	WG1364657
Isopropylbenzene	U		0.126	0.500	1	10/17/2019 17:24	WG1364657
p-Isopropyltoluene	U		0.138	0.500	1	10/17/2019 17:24	WG1364657
2-Butanone (MEK)	U		1.28	5.00	1	10/17/2019 17:24	WG1364657
Methylene Chloride	U		1.07	2.50	1	10/17/2019 17:24	WG1364657
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/17/2019 17:24	WG1364657
Methyl tert-butyl ether	U		0.102	0.500	1	10/17/2019 17:24	WG1364657
Naphthalene	U		0.174	2.50	1	10/17/2019 17:24	WG1364657
n-Propylbenzene	U		0.162	0.500	1	10/17/2019 17:24	WG1364657
Styrene	U		0.117	0.500	1	10/17/2019 17:24	WG1364657
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/17/2019 17:24	WG1364657
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/17/2019 17:24	WG1364657
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/17/2019 17:24	WG1364657
Tetrachloroethene	0.609		0.199	0.500	1	10/17/2019 17:24	WG1364657
Toluene	U		0.412	0.500	1	10/17/2019 17:24	WG1364657
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/17/2019 17:24	WG1364657
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/17/2019 17:24	WG1364657
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/17/2019 17:24	WG1364657
1,1,2-Trichloroethane	U		0.186	0.500	1	10/17/2019 17:24	WG1364657
Trichloroethene	8.12		0.153	0.500	1	10/17/2019 17:24	WG1364657
Trichlorofluoromethane	U		0.130	2.50	1	10/17/2019 17:24	WG1364657
1,2,3-Trichloropropane	U		0.247	2.50	1	10/17/2019 17:24	WG1364657
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/17/2019 17:24	WG1364657
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/17/2019 17:24	WG1364657
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/17/2019 17:24	WG1364657
Vinyl acetate	U		0.645	5.00	1	10/17/2019 17:24	WG1364657
Vinyl chloride	5.76		0.118	0.500	1	10/17/2019 17:24	WG1364657
Xylenes, Total	U		0.316	1.50	1	10/17/2019 17:24	WG1364657
(S) Toluene-d8	112			80.0-120		10/17/2019 17:24	WG1364657
(S) 4-Bromofluorobenzene	113			77.0-126		10/17/2019 17:24	WG1364657
(S) 1,2-Dichloroethane-d4	105			70.0-130		10/17/2019 17:24	WG1364657

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 11/25/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	135000		2710	20000	1	10/16/2019 00:31	WG1363488

Sample Narrative:

L1148422-01 WG1363488: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	11500		51.9	1000	1	10/11/2019 01:18	WG1360711
Nitrate	1610		22.7	100	1	10/11/2019 01:18	WG1360711
Sulfate	13800		77.4	5000	1	10/11/2019 01:18	WG1360711

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	964	U B J	102	1000	1	10/12/2019 20:56	WG1362106

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	273		15.0	100	1	10/15/2019 16:50	WG1362075
Manganese	160		0.250	5.00	1	10/15/2019 16:50	WG1362075

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	75.5		0.287	0.678	1	10/14/2019 15:10	WG1362474
Ethane	12.3		0.296	1.29	1	10/14/2019 15:10	WG1362474
Ethene	3.27		0.422	1.27	1	10/14/2019 15:10	WG1362474

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	2.67	J	1.05	25.0	1	10/17/2019 18:46	WG1364657
Acrylonitrile	U		0.873	5.00	1	10/17/2019 18:46	WG1364657
Benzene	U		0.0896	0.500	1	10/17/2019 18:46	WG1364657
Bromobenzene	U		0.133	0.500	1	10/17/2019 18:46	WG1364657
Bromodichloromethane	U		0.0800	0.500	1	10/17/2019 18:46	WG1364657
Bromochloromethane	U		0.145	0.500	1	10/17/2019 18:46	WG1364657
Bromoform	U		0.186	0.500	1	10/17/2019 18:46	WG1364657
Bromomethane	U		0.157	2.50	1	10/17/2019 18:46	WG1364657
n-Butylbenzene	U		0.143	0.500	1	10/17/2019 18:46	WG1364657
sec-Butylbenzene	U		0.134	0.500	1	10/17/2019 18:46	WG1364657
tert-Butylbenzene	U		0.183	0.500	1	10/17/2019 18:46	WG1364657
Carbon disulfide	U		0.101	0.500	1	10/17/2019 18:46	WG1364657
Carbon tetrachloride	U		0.159	0.500	1	10/17/2019 18:46	WG1364657
Chlorobenzene	U		0.140	0.500	1	10/17/2019 18:46	WG1364657
Chlorodibromomethane	U		0.128	0.500	1	10/17/2019 18:46	WG1364657
Chloroethane	U		0.141	2.50	1	10/17/2019 18:46	WG1364657
Chloroform	U		0.0860	0.500	1	10/17/2019 18:46	WG1364657
Chloromethane	U		0.153	1.25	1	10/17/2019 18:46	WG1364657
2-Chlorotoluene	U		0.111	0.500	1	10/17/2019 18:46	WG1364657
4-Chlorotoluene	U		0.0972	0.500	1	10/17/2019 18:46	WG1364657

JC 11/25/19

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/17/2019 18:46	WG1364657
1,2-Dibromoethane	U		0.193	0.500	1	10/17/2019 18:46	WG1364657
Dibromomethane	U		0.117	0.500	1	10/17/2019 18:46	WG1364657
1,2-Dichlorobenzene	U		0.101	0.500	1	10/17/2019 18:46	WG1364657
1,3-Dichlorobenzene	U		0.130	0.500	1	10/17/2019 18:46	WG1364657
1,4-Dichlorobenzene	U		0.121	0.500	1	10/17/2019 18:46	WG1364657
Dichlorodifluoromethane	U		0.127	2.50	1	10/17/2019 18:46	WG1364657
1,1-Dichloroethane	U		0.114	0.500	1	10/17/2019 18:46	WG1364657
1,2-Dichloroethane	U		0.108	0.500	1	10/17/2019 18:46	WG1364657
1,1-Dichloroethene	0.276	U	0.188	0.500	1	10/17/2019 18:46	WG1364657
cis-1,2-Dichloroethene	66.5		0.0933	0.500	1	10/17/2019 18:46	WG1364657
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/17/2019 18:46	WG1364657
1,2-Dichloropropane	U		0.190	0.500	1	10/17/2019 18:46	WG1364657
1,1-Dichloropropene	U		0.128	0.500	1	10/17/2019 18:46	WG1364657
1,3-Dichloropropane	U		0.147	1.00	1	10/17/2019 18:46	WG1364657
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/17/2019 18:46	WG1364657
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/17/2019 18:46	WG1364657
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/17/2019 18:46	WG1364657
2,2-Dichloropropane	U		0.0929	0.500	1	10/17/2019 18:46	WG1364657
Di-isopropyl ether	U		0.0924	0.500	1	10/17/2019 18:46	WG1364657
Ethylbenzene	U		0.158	0.500	1	10/17/2019 18:46	WG1364657
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/17/2019 18:46	WG1364657
2-Hexanone	U		0.757	5.00	1	10/17/2019 18:46	WG1364657
n-Hexane	U		0.305	5.00	1	10/17/2019 18:46	WG1364657
Iodomethane	U		0.377	10.0	1	10/17/2019 18:46	WG1364657
Isopropylbenzene	0.308	U	0.126	0.500	1	10/17/2019 18:46	WG1364657
p-Isopropyltoluene	U		0.138	0.500	1	10/17/2019 18:46	WG1364657
2-Butanone (MEK)	U		1.28	5.00	1	10/17/2019 18:46	WG1364657
Methylene Chloride	U		1.07	2.50	1	10/17/2019 18:46	WG1364657
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/17/2019 18:46	WG1364657
Methyl tert-butyl ether	U		0.102	0.500	1	10/17/2019 18:46	WG1364657
Naphthalene	U		0.174	2.50	1	10/17/2019 18:46	WG1364657
n-Propylbenzene	U		0.162	0.500	1	10/17/2019 18:46	WG1364657
Styrene	U		0.117	0.500	1	10/17/2019 18:46	WG1364657
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/17/2019 18:46	WG1364657
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/17/2019 18:46	WG1364657
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/17/2019 18:46	WG1364657
Tetrachloroethene	U		0.199	0.500	1	10/17/2019 18:46	WG1364657
Toluene	4.97		0.412	0.500	1	10/17/2019 18:46	WG1364657
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/17/2019 18:46	WG1364657
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/17/2019 18:46	WG1364657
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/17/2019 18:46	WG1364657
1,1,2-Trichloroethane	U		0.186	0.500	1	10/17/2019 18:46	WG1364657
Trichloroethene	0.891		0.153	0.500	1	10/17/2019 18:46	WG1364657
Trichlorofluoromethane	U		0.130	2.50	1	10/17/2019 18:46	WG1364657
1,2,3-Trichloropropane	U		0.247	2.50	1	10/17/2019 18:46	WG1364657
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/17/2019 18:46	WG1364657
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/17/2019 18:46	WG1364657
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/17/2019 18:46	WG1364657
Vinyl acetate	U		0.645	5.00	1	10/17/2019 18:46	WG1364657
Vinyl chloride	13.4		0.118	0.500	1	10/17/2019 18:46	WG1364657
Xylenes, Total	U		0.316	1.50	1	10/17/2019 18:46	WG1364657 JC 11/25/19
(S) Toluene-d8	113			80.0-120		10/17/2019 18:46	WG1364657
(S) 4-Bromofluorobenzene	114			77.0-126		10/17/2019 18:46	WG1364657
(S) 1,2-Dichloroethane-d4	105			70.0-130		10/17/2019 18:46	WG1364657

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	404000		2710	20000	1	10/16/2019 00:39	WG1363488

Sample Narrative:

L1148422-02 WG1363488: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	18500		51.9	1000	1	10/11/2019 02:01	WG1360711
Nitrate	U		22.7	100	1	10/11/2019 02:01	WG1360711
Sulfate	U		77.4	5000	1	10/11/2019 02:01	WG1360711

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	12000		102	1000	1	10/12/2019 21:11	WG1362106

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	12500		300	2000	20	10/15/2019 17:29	WG1362075
Manganese	3570		5.00	100	20	10/15/2019 17:29	WG1362075

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	11000		2.87	6.78	10	10/15/2019 11:14	WG1362983
Ethane	U		0.296	1.29	1	10/14/2019 15:12	WG1362474
Ethene	U		0.422	1.27	1	10/14/2019 15:12	WG1362474

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.66	J	1.05	25.0	1	10/17/2019 19:06	WG1364657
Acrylonitrile	U		0.873	5.00	1	10/17/2019 19:06	WG1364657
Benzene	U		0.0896	0.500	1	10/17/2019 19:06	WG1364657
Bromobenzene	U		0.133	0.500	1	10/17/2019 19:06	WG1364657
Bromodichloromethane	U		0.0800	0.500	1	10/17/2019 19:06	WG1364657
Bromochloromethane	U		0.145	0.500	1	10/17/2019 19:06	WG1364657
Bromoform	U		0.186	0.500	1	10/17/2019 19:06	WG1364657
Bromomethane	U		0.157	2.50	1	10/17/2019 19:06	WG1364657
n-Butylbenzene	U		0.143	0.500	1	10/17/2019 19:06	WG1364657
sec-Butylbenzene	U		0.134	0.500	1	10/17/2019 19:06	WG1364657
tert-Butylbenzene	U		0.183	0.500	1	10/17/2019 19:06	WG1364657
Carbon disulfide	U		0.101	0.500	1	10/17/2019 19:06	WG1364657
Carbon tetrachloride	U		0.159	0.500	1	10/17/2019 19:06	WG1364657
Chlorobenzene	U		0.140	0.500	1	10/17/2019 19:06	WG1364657
Chlorodibromomethane	U		0.128	0.500	1	10/17/2019 19:06	WG1364657
Chloroethane	U		0.141	2.50	1	10/17/2019 19:06	WG1364657
Chloroform	U		0.0860	0.500	1	10/17/2019 19:06	WG1364657
Chloromethane	U		0.153	1.25	1	10/17/2019 19:06	WG1364657
2-Chlorotoluene	U		0.111	0.500	1	10/17/2019 19:06	WG1364657
4-Chlorotoluene	U		0.0972	0.500	1	10/17/2019 19:06	WG1364657

JC 11/25/19

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/09/19 13:15

L1148422

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/17/2019 19:06	WG1364657
1,2-Dibromoethane	U		0.193	0.500	1	10/17/2019 19:06	WG1364657
Dibromomethane	U		0.117	0.500	1	10/17/2019 19:06	WG1364657
1,2-Dichlorobenzene	U		0.101	0.500	1	10/17/2019 19:06	WG1364657
1,3-Dichlorobenzene	U		0.130	0.500	1	10/17/2019 19:06	WG1364657
1,4-Dichlorobenzene	U		0.121	0.500	1	10/17/2019 19:06	WG1364657
Dichlorodifluoromethane	U		0.127	2.50	1	10/17/2019 19:06	WG1364657
1,1-Dichloroethane	U		0.114	0.500	1	10/17/2019 19:06	WG1364657
1,2-Dichloroethane	U		0.108	0.500	1	10/17/2019 19:06	WG1364657
1,1-Dichloroethene	U		0.188	0.500	1	10/17/2019 19:06	WG1364657
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/17/2019 19:06	WG1364657
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/17/2019 19:06	WG1364657
1,2-Dichloropropane	U		0.190	0.500	1	10/17/2019 19:06	WG1364657
1,1-Dichloropropene	U		0.128	0.500	1	10/17/2019 19:06	WG1364657
1,3-Dichloropropane	U		0.147	1.00	1	10/17/2019 19:06	WG1364657
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/17/2019 19:06	WG1364657
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/17/2019 19:06	WG1364657
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/17/2019 19:06	WG1364657
2,2-Dichloropropane	U		0.0929	0.500	1	10/17/2019 19:06	WG1364657
Di-isopropyl ether	U		0.0924	0.500	1	10/17/2019 19:06	WG1364657
Ethylbenzene	U		0.158	0.500	1	10/17/2019 19:06	WG1364657
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/17/2019 19:06	WG1364657
2-Hexanone	U		0.757	5.00	1	10/17/2019 19:06	WG1364657
n-Hexane	U		0.305	5.00	1	10/17/2019 19:06	WG1364657
Iodomethane	U		0.377	10.0	1	10/17/2019 19:06	WG1364657
Isopropylbenzene	U		0.126	0.500	1	10/17/2019 19:06	WG1364657
p-Isopropyltoluene	U		0.138	0.500	1	10/17/2019 19:06	WG1364657
2-Butanone (MEK)	U		1.28	5.00	1	10/17/2019 19:06	WG1364657
Methylene Chloride	U		1.07	2.50	1	10/17/2019 19:06	WG1364657
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/17/2019 19:06	WG1364657
Methyl tert-butyl ether	U		0.102	0.500	1	10/17/2019 19:06	WG1364657
Naphthalene	U		0.174	2.50	1	10/17/2019 19:06	WG1364657
n-Propylbenzene	U		0.162	0.500	1	10/17/2019 19:06	WG1364657
Styrene	U		0.117	0.500	1	10/17/2019 19:06	WG1364657
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/17/2019 19:06	WG1364657
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/17/2019 19:06	WG1364657
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/17/2019 19:06	WG1364657
Tetrachloroethene	U		0.199	0.500	1	10/17/2019 19:06	WG1364657
Toluene	U		0.412	0.500	1	10/17/2019 19:06	WG1364657
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/17/2019 19:06	WG1364657
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/17/2019 19:06	WG1364657
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/17/2019 19:06	WG1364657
1,1,2-Trichloroethane	U		0.186	0.500	1	10/17/2019 19:06	WG1364657
Trichloroethene	U		0.153	0.500	1	10/17/2019 19:06	WG1364657
Trichlorofluoromethane	U		0.130	2.50	1	10/17/2019 19:06	WG1364657
1,2,3-Trichloropropane	U		0.247	2.50	1	10/17/2019 19:06	WG1364657
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/17/2019 19:06	WG1364657
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/17/2019 19:06	WG1364657
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/17/2019 19:06	WG1364657
Vinyl acetate	U		0.645	5.00	1	10/17/2019 19:06	WG1364657
Vinyl chloride	U		0.118	0.500	1	10/17/2019 19:06	WG1364657
Xylenes, Total	U		0.316	1.50	1	10/17/2019 19:06	WG1364657
(S) Toluene-d8	110			80.0-120		10/17/2019 19:06	WG1364657
(S) 4-Bromofluorobenzene	111			77.0-126		10/17/2019 19:06	WG1364657
(S) 1,2-Dichloroethane-d4	108			70.0-130		10/17/2019 19:06	WG1364657

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 11/25/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		1.05	25.0	1	10/17/2019 19:26	WG1364657
Acrylonitrile	U		0.873	5.00	1	10/17/2019 19:26	WG1364657
Benzene	11.2		0.0896	0.500	1	10/17/2019 19:26	WG1364657
Bromobenzene	U		0.133	0.500	1	10/17/2019 19:26	WG1364657
Bromodichloromethane	U		0.0800	0.500	1	10/17/2019 19:26	WG1364657
Bromochloromethane	U		0.145	0.500	1	10/17/2019 19:26	WG1364657
Bromoform	U		0.186	0.500	1	10/17/2019 19:26	WG1364657
Bromomethane	U		0.157	2.50	1	10/17/2019 19:26	WG1364657
n-Butylbenzene	8.26		0.143	0.500	1	10/17/2019 19:26	WG1364657
sec-Butylbenzene	14.4		0.134	0.500	1	10/17/2019 19:26	WG1364657
tert-Butylbenzene	0.365	J	0.183	0.500	1	10/17/2019 19:26	WG1364657
Carbon disulfide	U		0.101	0.500	1	10/17/2019 19:26	WG1364657
Carbon tetrachloride	U		0.159	0.500	1	10/17/2019 19:26	WG1364657
Chlorobenzene	U		0.140	0.500	1	10/17/2019 19:26	WG1364657
Chlorodibromomethane	U		0.128	0.500	1	10/17/2019 19:26	WG1364657
Chloroethane	U		0.141	2.50	1	10/17/2019 19:26	WG1364657
Chloroform	U		0.0860	0.500	1	10/17/2019 19:26	WG1364657
Chloromethane	U		0.153	1.25	1	10/17/2019 19:26	WG1364657
2-Chlorotoluene	U		0.111	0.500	1	10/17/2019 19:26	WG1364657
4-Chlorotoluene	U		0.0972	0.500	1	10/17/2019 19:26	WG1364657
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/17/2019 19:26	WG1364657
1,2-Dibromoethane	U		0.193	0.500	1	10/17/2019 19:26	WG1364657
Dibromomethane	U		0.117	0.500	1	10/17/2019 19:26	WG1364657
1,2-Dichlorobenzene	U		0.101	0.500	1	10/17/2019 19:26	WG1364657
1,3-Dichlorobenzene	U		0.130	0.500	1	10/17/2019 19:26	WG1364657
1,4-Dichlorobenzene	U		0.121	0.500	1	10/17/2019 19:26	WG1364657
Dichlorodifluoromethane	U		0.127	2.50	1	10/17/2019 19:26	WG1364657
1,1-Dichloroethane	U		0.114	0.500	1	10/17/2019 19:26	WG1364657
1,2-Dichloroethane	U		0.108	0.500	1	10/17/2019 19:26	WG1364657
1,1-Dichloroethene	U		0.188	0.500	1	10/17/2019 19:26	WG1364657
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/17/2019 19:26	WG1364657
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/17/2019 19:26	WG1364657
1,2-Dichloropropane	U		0.190	0.500	1	10/17/2019 19:26	WG1364657
1,1-Dichloropropene	U		0.128	0.500	1	10/17/2019 19:26	WG1364657
1,3-Dichloropropane	U		0.147	1.00	1	10/17/2019 19:26	WG1364657
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/17/2019 19:26	WG1364657
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/17/2019 19:26	WG1364657
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/17/2019 19:26	WG1364657
2,2-Dichloropropane	U		0.0929	0.500	1	10/17/2019 19:26	WG1364657
Di-isopropyl ether	U		0.0924	0.500	1	10/17/2019 19:26	WG1364657
Ethylbenzene	16.6		0.158	0.500	1	10/17/2019 19:26	WG1364657
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/17/2019 19:26	WG1364657
2-Hexanone	U		0.757	5.00	1	10/17/2019 19:26	WG1364657
n-Hexane	4.81	J	0.305	5.00	1	10/17/2019 19:26	WG1364657
Iodomethane	U		0.377	10.0	1	10/17/2019 19:26	WG1364657
Isopropylbenzene	49.9		0.126	0.500	1	10/17/2019 19:26	WG1364657
p-Isopropyltoluene	0.312	J	0.138	0.500	1	10/17/2019 19:26	WG1364657
2-Butanone (MEK)	U		1.28	5.00	1	10/17/2019 19:26	WG1364657
Methylene Chloride	U		1.07	2.50	1	10/17/2019 19:26	WG1364657
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/17/2019 19:26	WG1364657
Methyl tert-butyl ether	U		0.102	0.500	1	10/17/2019 19:26	WG1364657
Naphthalene	36.7		0.174	2.50	1	10/17/2019 19:26	WG1364657
n-Propylbenzene	152		0.162	0.500	1	10/17/2019 19:26	WG1364657
Styrene	U		0.117	0.500	1	10/17/2019 19:26	WG1364657
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/17/2019 19:26	WG1364657
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/17/2019 19:26	WG1364657

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 11/25/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/17/2019 19:26	WG1364657
Tetrachloroethene	U		0.199	0.500	1	10/17/2019 19:26	WG1364657
Toluene	2.39		0.412	0.500	1	10/17/2019 19:26	WG1364657
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/17/2019 19:26	WG1364657
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/17/2019 19:26	WG1364657
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/17/2019 19:26	WG1364657
1,1,2-Trichloroethane	U		0.186	0.500	1	10/17/2019 19:26	WG1364657
Trichloroethene	U		0.153	0.500	1	10/17/2019 19:26	WG1364657
Trichlorofluoromethane	U		0.130	2.50	1	10/17/2019 19:26	WG1364657
1,2,3-Trichloropropane	U		0.247	2.50	1	10/17/2019 19:26	WG1364657
1,2,4-Trimethylbenzene	4.11		0.123	0.500	1	10/17/2019 19:26	WG1364657
1,2,3-Trimethylbenzene	7.95		0.0739	0.500	1	10/17/2019 19:26	WG1364657
1,3,5-Trimethylbenzene	0.379	↓	0.124	0.500	1	10/17/2019 19:26	WG1364657
Vinyl acetate	U		0.645	5.00	1	10/17/2019 19:26	WG1364657
Vinyl chloride	U		0.118	0.500	1	10/17/2019 19:26	WG1364657
Xylenes, Total	3.77		0.316	1.50	1	10/17/2019 19:26	WG1364657
(S) Toluene-d8	107			80.0-120		10/17/2019 19:26	WG1364657
(S) 4-Bromofluorobenzene	105			77.0-126		10/17/2019 19:26	WG1364657
(S) 1,2-Dichloroethane-d4	107			70.0-130		10/17/2019 19:26	WG1364657

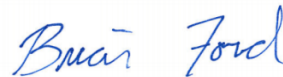
- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 11/25/19

PES Environmental, Inc.- WA

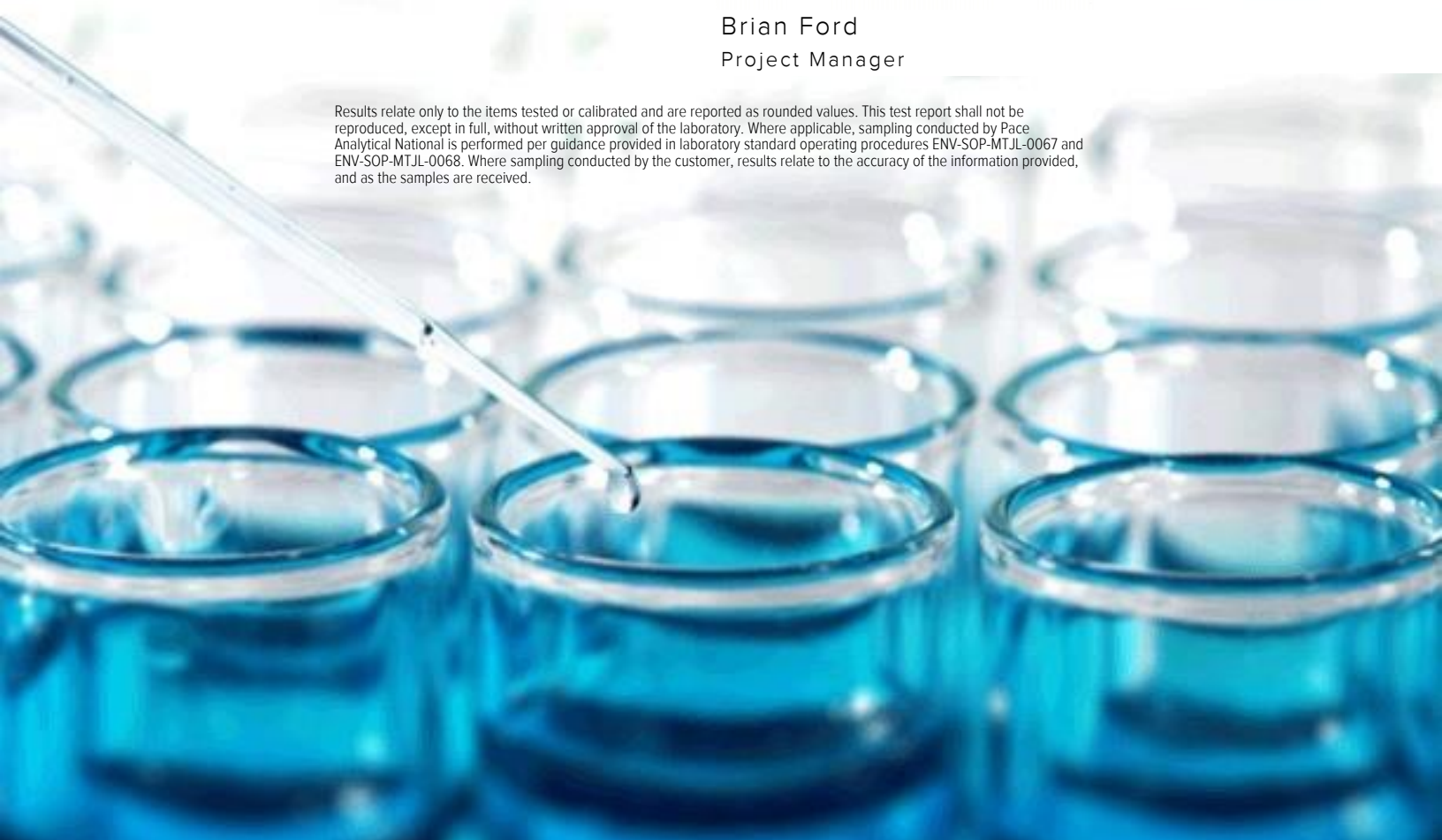
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Samples Received: 10/10/2019
Project Number: 1413.001.02.501E
Description: American Linen
Site: AMERICAN LINEN
Report To: Brian O'Neal/Bill Haldeman
1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Entire Report Reviewed By:












Brian Ford
Project Manager

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SAMPLE SUMMARY

MW-323-100919 L1148422-01 GW

Collected by Hannah Cohen
Collected date/time 10/09/19 11:35
Received date/time 10/10/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1363488	1	10/16/19 00:31	10/16/19 00:31	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1360711	1	10/11/19 01:18	10/11/19 01:18	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1362106	1	10/12/19 20:56	10/12/19 20:56	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1362075	1	10/15/19 09:07	10/15/19 16:50	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1362474	1	10/14/19 15:10	10/14/19 15:10	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1364657	1	10/17/19 18:46	10/17/19 18:46	BMB	Mt. Juliet, TN

1
Cp

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Ss

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Cn

MW-317-100919 L1148422-02 GW

Collected by Hannah Cohen
Collected date/time 10/09/19 13:15
Received date/time 10/10/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1363488	1	10/16/19 00:39	10/16/19 00:39	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1360711	1	10/11/19 02:01	10/11/19 02:01	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1362106	1	10/12/19 21:11	10/12/19 21:11	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1362075	20	10/15/19 09:07	10/15/19 17:29	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1362474	1	10/14/19 15:12	10/14/19 15:12	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1362983	10	10/15/19 11:14	10/15/19 11:14	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1364657	1	10/17/19 19:06	10/17/19 19:06	BMB	Mt. Juliet, TN

5
Sr

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Qc

7
Gl

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Al

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Sc

SCL-MW101-100919 L1148422-03 GW

Collected by Hannah Cohen
Collected date/time 10/09/19 15:50
Received date/time 10/10/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1364657	1	10/17/19 19:26	10/17/19 19:26	BMB	Mt. Juliet, TN



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	135000		2710	20000	1	10/16/2019 00:31	WG1363488

Sample Narrative:

L1148422-01 WG1363488: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	11500		51.9	1000	1	10/11/2019 01:18	WG1360711
Nitrate	1610		22.7	100	1	10/11/2019 01:18	WG1360711
Sulfate	13800		77.4	5000	1	10/11/2019 01:18	WG1360711

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	964	<u>B</u> <u>J</u>	102	1000	1	10/12/2019 20:56	WG1362106

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	273		15.0	100	1	10/15/2019 16:50	WG1362075
Manganese	160		0.250	5.00	1	10/15/2019 16:50	WG1362075

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	75.5		0.287	0.678	1	10/14/2019 15:10	WG1362474
Ethane	12.3		0.296	1.29	1	10/14/2019 15:10	WG1362474
Ethene	3.27		0.422	1.27	1	10/14/2019 15:10	WG1362474

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	2.67	<u>J</u>	1.05	25.0	1	10/17/2019 18:46	WG1364657
Acrylonitrile	U		0.873	5.00	1	10/17/2019 18:46	WG1364657
Benzene	U		0.0896	0.500	1	10/17/2019 18:46	WG1364657
Bromobenzene	U		0.133	0.500	1	10/17/2019 18:46	WG1364657
Bromodichloromethane	U		0.0800	0.500	1	10/17/2019 18:46	WG1364657
Bromochloromethane	U		0.145	0.500	1	10/17/2019 18:46	WG1364657
Bromoform	U		0.186	0.500	1	10/17/2019 18:46	WG1364657
Bromomethane	U		0.157	2.50	1	10/17/2019 18:46	WG1364657
n-Butylbenzene	U		0.143	0.500	1	10/17/2019 18:46	WG1364657
sec-Butylbenzene	U		0.134	0.500	1	10/17/2019 18:46	WG1364657
tert-Butylbenzene	U		0.183	0.500	1	10/17/2019 18:46	WG1364657
Carbon disulfide	U		0.101	0.500	1	10/17/2019 18:46	WG1364657
Carbon tetrachloride	U		0.159	0.500	1	10/17/2019 18:46	WG1364657
Chlorobenzene	U		0.140	0.500	1	10/17/2019 18:46	WG1364657
Chlorodibromomethane	U		0.128	0.500	1	10/17/2019 18:46	WG1364657
Chloroethane	U		0.141	2.50	1	10/17/2019 18:46	WG1364657
Chloroform	U		0.0860	0.500	1	10/17/2019 18:46	WG1364657
Chloromethane	U		0.153	1.25	1	10/17/2019 18:46	WG1364657
2-Chlorotoluene	U		0.111	0.500	1	10/17/2019 18:46	WG1364657
4-Chlorotoluene	U		0.0972	0.500	1	10/17/2019 18:46	WG1364657

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/17/2019 18:46	WG1364657
1,2-Dibromoethane	U		0.193	0.500	1	10/17/2019 18:46	WG1364657
Dibromomethane	U		0.117	0.500	1	10/17/2019 18:46	WG1364657
1,2-Dichlorobenzene	U		0.101	0.500	1	10/17/2019 18:46	WG1364657
1,3-Dichlorobenzene	U		0.130	0.500	1	10/17/2019 18:46	WG1364657
1,4-Dichlorobenzene	U		0.121	0.500	1	10/17/2019 18:46	WG1364657
Dichlorodifluoromethane	U		0.127	2.50	1	10/17/2019 18:46	WG1364657
1,1-Dichloroethane	U		0.114	0.500	1	10/17/2019 18:46	WG1364657
1,2-Dichloroethane	U		0.108	0.500	1	10/17/2019 18:46	WG1364657
1,1-Dichloroethene	0.276	U	0.188	0.500	1	10/17/2019 18:46	WG1364657
cis-1,2-Dichloroethene	66.5		0.0933	0.500	1	10/17/2019 18:46	WG1364657
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/17/2019 18:46	WG1364657
1,2-Dichloropropane	U		0.190	0.500	1	10/17/2019 18:46	WG1364657
1,1-Dichloropropene	U		0.128	0.500	1	10/17/2019 18:46	WG1364657
1,3-Dichloropropane	U		0.147	1.00	1	10/17/2019 18:46	WG1364657
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/17/2019 18:46	WG1364657
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/17/2019 18:46	WG1364657
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/17/2019 18:46	WG1364657
2,2-Dichloropropane	U		0.0929	0.500	1	10/17/2019 18:46	WG1364657
Di-isopropyl ether	U		0.0924	0.500	1	10/17/2019 18:46	WG1364657
Ethylbenzene	U		0.158	0.500	1	10/17/2019 18:46	WG1364657
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/17/2019 18:46	WG1364657
2-Hexanone	U		0.757	5.00	1	10/17/2019 18:46	WG1364657
n-Hexane	U		0.305	5.00	1	10/17/2019 18:46	WG1364657
Iodomethane	U		0.377	10.0	1	10/17/2019 18:46	WG1364657
Isopropylbenzene	0.308	U	0.126	0.500	1	10/17/2019 18:46	WG1364657
p-Isopropyltoluene	U		0.138	0.500	1	10/17/2019 18:46	WG1364657
2-Butanone (MEK)	U		1.28	5.00	1	10/17/2019 18:46	WG1364657
Methylene Chloride	U		1.07	2.50	1	10/17/2019 18:46	WG1364657
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/17/2019 18:46	WG1364657
Methyl tert-butyl ether	U		0.102	0.500	1	10/17/2019 18:46	WG1364657
Naphthalene	U		0.174	2.50	1	10/17/2019 18:46	WG1364657
n-Propylbenzene	U		0.162	0.500	1	10/17/2019 18:46	WG1364657
Styrene	U		0.117	0.500	1	10/17/2019 18:46	WG1364657
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/17/2019 18:46	WG1364657
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/17/2019 18:46	WG1364657
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/17/2019 18:46	WG1364657
Tetrachloroethene	U		0.199	0.500	1	10/17/2019 18:46	WG1364657
Toluene	4.97		0.412	0.500	1	10/17/2019 18:46	WG1364657
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/17/2019 18:46	WG1364657
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/17/2019 18:46	WG1364657
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/17/2019 18:46	WG1364657
1,1,2-Trichloroethane	U		0.186	0.500	1	10/17/2019 18:46	WG1364657
Trichloroethene	0.891		0.153	0.500	1	10/17/2019 18:46	WG1364657
Trichlorofluoromethane	U		0.130	2.50	1	10/17/2019 18:46	WG1364657
1,2,3-Trichloropropane	U		0.247	2.50	1	10/17/2019 18:46	WG1364657
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/17/2019 18:46	WG1364657
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/17/2019 18:46	WG1364657
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/17/2019 18:46	WG1364657
Vinyl acetate	U		0.645	5.00	1	10/17/2019 18:46	WG1364657
Vinyl chloride	13.4		0.118	0.500	1	10/17/2019 18:46	WG1364657
Xylenes, Total	U		0.316	1.50	1	10/17/2019 18:46	WG1364657
(S) Toluene-d8	113			80.0-120		10/17/2019 18:46	WG1364657
(S) 4-Bromofluorobenzene	114			77.0-126		10/17/2019 18:46	WG1364657
(S) 1,2-Dichloroethane-d4	105			70.0-130		10/17/2019 18:46	WG1364657

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	404000		2710	20000	1	10/16/2019 00:39	WG1363488

Sample Narrative:

L1148422-02 WG1363488: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	18500		51.9	1000	1	10/11/2019 02:01	WG1360711
Nitrate	U		22.7	100	1	10/11/2019 02:01	WG1360711
Sulfate	U		77.4	5000	1	10/11/2019 02:01	WG1360711

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	12000		102	1000	1	10/12/2019 21:11	WG1362106

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	12500		300	2000	20	10/15/2019 17:29	WG1362075
Manganese	3570		5.00	100	20	10/15/2019 17:29	WG1362075

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	11000		2.87	6.78	10	10/15/2019 11:14	WG1362983
Ethane	U		0.296	1.29	1	10/14/2019 15:12	WG1362474
Ethene	U		0.422	1.27	1	10/14/2019 15:12	WG1362474

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.66	J	1.05	25.0	1	10/17/2019 19:06	WG1364657
Acrylonitrile	U		0.873	5.00	1	10/17/2019 19:06	WG1364657
Benzene	U		0.0896	0.500	1	10/17/2019 19:06	WG1364657
Bromobenzene	U		0.133	0.500	1	10/17/2019 19:06	WG1364657
Bromodichloromethane	U		0.0800	0.500	1	10/17/2019 19:06	WG1364657
Bromochloromethane	U		0.145	0.500	1	10/17/2019 19:06	WG1364657
Bromoform	U		0.186	0.500	1	10/17/2019 19:06	WG1364657
Bromomethane	U		0.157	2.50	1	10/17/2019 19:06	WG1364657
n-Butylbenzene	U		0.143	0.500	1	10/17/2019 19:06	WG1364657
sec-Butylbenzene	U		0.134	0.500	1	10/17/2019 19:06	WG1364657
tert-Butylbenzene	U		0.183	0.500	1	10/17/2019 19:06	WG1364657
Carbon disulfide	U		0.101	0.500	1	10/17/2019 19:06	WG1364657
Carbon tetrachloride	U		0.159	0.500	1	10/17/2019 19:06	WG1364657
Chlorobenzene	U		0.140	0.500	1	10/17/2019 19:06	WG1364657
Chlorodibromomethane	U		0.128	0.500	1	10/17/2019 19:06	WG1364657
Chloroethane	U		0.141	2.50	1	10/17/2019 19:06	WG1364657
Chloroform	U		0.0860	0.500	1	10/17/2019 19:06	WG1364657
Chloromethane	U		0.153	1.25	1	10/17/2019 19:06	WG1364657
2-Chlorotoluene	U		0.111	0.500	1	10/17/2019 19:06	WG1364657
4-Chlorotoluene	U		0.0972	0.500	1	10/17/2019 19:06	WG1364657

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/09/19 13:15

L1148422

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/17/2019 19:06	WG1364657
1,2-Dibromoethane	U		0.193	0.500	1	10/17/2019 19:06	WG1364657
Dibromomethane	U		0.117	0.500	1	10/17/2019 19:06	WG1364657
1,2-Dichlorobenzene	U		0.101	0.500	1	10/17/2019 19:06	WG1364657
1,3-Dichlorobenzene	U		0.130	0.500	1	10/17/2019 19:06	WG1364657
1,4-Dichlorobenzene	U		0.121	0.500	1	10/17/2019 19:06	WG1364657
Dichlorodifluoromethane	U		0.127	2.50	1	10/17/2019 19:06	WG1364657
1,1-Dichloroethane	U		0.114	0.500	1	10/17/2019 19:06	WG1364657
1,2-Dichloroethane	U		0.108	0.500	1	10/17/2019 19:06	WG1364657
1,1-Dichloroethene	U		0.188	0.500	1	10/17/2019 19:06	WG1364657
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/17/2019 19:06	WG1364657
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/17/2019 19:06	WG1364657
1,2-Dichloropropane	U		0.190	0.500	1	10/17/2019 19:06	WG1364657
1,1-Dichloropropene	U		0.128	0.500	1	10/17/2019 19:06	WG1364657
1,3-Dichloropropane	U		0.147	1.00	1	10/17/2019 19:06	WG1364657
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/17/2019 19:06	WG1364657
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/17/2019 19:06	WG1364657
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/17/2019 19:06	WG1364657
2,2-Dichloropropane	U		0.0929	0.500	1	10/17/2019 19:06	WG1364657
Di-isopropyl ether	U		0.0924	0.500	1	10/17/2019 19:06	WG1364657
Ethylbenzene	U		0.158	0.500	1	10/17/2019 19:06	WG1364657
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/17/2019 19:06	WG1364657
2-Hexanone	U		0.757	5.00	1	10/17/2019 19:06	WG1364657
n-Hexane	U		0.305	5.00	1	10/17/2019 19:06	WG1364657
Iodomethane	U		0.377	10.0	1	10/17/2019 19:06	WG1364657
Isopropylbenzene	U		0.126	0.500	1	10/17/2019 19:06	WG1364657
p-Isopropyltoluene	U		0.138	0.500	1	10/17/2019 19:06	WG1364657
2-Butanone (MEK)	U		1.28	5.00	1	10/17/2019 19:06	WG1364657
Methylene Chloride	U		1.07	2.50	1	10/17/2019 19:06	WG1364657
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/17/2019 19:06	WG1364657
Methyl tert-butyl ether	U		0.102	0.500	1	10/17/2019 19:06	WG1364657
Naphthalene	U		0.174	2.50	1	10/17/2019 19:06	WG1364657
n-Propylbenzene	U		0.162	0.500	1	10/17/2019 19:06	WG1364657
Styrene	U		0.117	0.500	1	10/17/2019 19:06	WG1364657
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/17/2019 19:06	WG1364657
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/17/2019 19:06	WG1364657
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/17/2019 19:06	WG1364657
Tetrachloroethene	U		0.199	0.500	1	10/17/2019 19:06	WG1364657
Toluene	U		0.412	0.500	1	10/17/2019 19:06	WG1364657
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/17/2019 19:06	WG1364657
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/17/2019 19:06	WG1364657
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/17/2019 19:06	WG1364657
1,1,2-Trichloroethane	U		0.186	0.500	1	10/17/2019 19:06	WG1364657
Trichloroethene	U		0.153	0.500	1	10/17/2019 19:06	WG1364657
Trichlorofluoromethane	U		0.130	2.50	1	10/17/2019 19:06	WG1364657
1,2,3-Trichloropropane	U		0.247	2.50	1	10/17/2019 19:06	WG1364657
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/17/2019 19:06	WG1364657
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/17/2019 19:06	WG1364657
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/17/2019 19:06	WG1364657
Vinyl acetate	U		0.645	5.00	1	10/17/2019 19:06	WG1364657
Vinyl chloride	U		0.118	0.500	1	10/17/2019 19:06	WG1364657
Xylenes, Total	U		0.316	1.50	1	10/17/2019 19:06	WG1364657
(S) Toluene-d8	110			80.0-120		10/17/2019 19:06	WG1364657
(S) 4-Bromofluorobenzene	111			77.0-126		10/17/2019 19:06	WG1364657
(S) 1,2-Dichloroethane-d4	108			70.0-130		10/17/2019 19:06	WG1364657

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		1.05	25.0	1	10/17/2019 19:26	WG1364657
Acrylonitrile	U		0.873	5.00	1	10/17/2019 19:26	WG1364657
Benzene	11.2		0.0896	0.500	1	10/17/2019 19:26	WG1364657
Bromobenzene	U		0.133	0.500	1	10/17/2019 19:26	WG1364657
Bromodichloromethane	U		0.0800	0.500	1	10/17/2019 19:26	WG1364657
Bromochloromethane	U		0.145	0.500	1	10/17/2019 19:26	WG1364657
Bromoform	U		0.186	0.500	1	10/17/2019 19:26	WG1364657
Bromomethane	U		0.157	2.50	1	10/17/2019 19:26	WG1364657
n-Butylbenzene	8.26		0.143	0.500	1	10/17/2019 19:26	WG1364657
sec-Butylbenzene	14.4		0.134	0.500	1	10/17/2019 19:26	WG1364657
tert-Butylbenzene	0.365	J	0.183	0.500	1	10/17/2019 19:26	WG1364657
Carbon disulfide	U		0.101	0.500	1	10/17/2019 19:26	WG1364657
Carbon tetrachloride	U		0.159	0.500	1	10/17/2019 19:26	WG1364657
Chlorobenzene	U		0.140	0.500	1	10/17/2019 19:26	WG1364657
Chlorodibromomethane	U		0.128	0.500	1	10/17/2019 19:26	WG1364657
Chloroethane	U		0.141	2.50	1	10/17/2019 19:26	WG1364657
Chloroform	U		0.0860	0.500	1	10/17/2019 19:26	WG1364657
Chloromethane	U		0.153	1.25	1	10/17/2019 19:26	WG1364657
2-Chlorotoluene	U		0.111	0.500	1	10/17/2019 19:26	WG1364657
4-Chlorotoluene	U		0.0972	0.500	1	10/17/2019 19:26	WG1364657
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/17/2019 19:26	WG1364657
1,2-Dibromoethane	U		0.193	0.500	1	10/17/2019 19:26	WG1364657
Dibromomethane	U		0.117	0.500	1	10/17/2019 19:26	WG1364657
1,2-Dichlorobenzene	U		0.101	0.500	1	10/17/2019 19:26	WG1364657
1,3-Dichlorobenzene	U		0.130	0.500	1	10/17/2019 19:26	WG1364657
1,4-Dichlorobenzene	U		0.121	0.500	1	10/17/2019 19:26	WG1364657
Dichlorodifluoromethane	U		0.127	2.50	1	10/17/2019 19:26	WG1364657
1,1-Dichloroethane	U		0.114	0.500	1	10/17/2019 19:26	WG1364657
1,2-Dichloroethane	U		0.108	0.500	1	10/17/2019 19:26	WG1364657
1,1-Dichloroethene	U		0.188	0.500	1	10/17/2019 19:26	WG1364657
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/17/2019 19:26	WG1364657
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/17/2019 19:26	WG1364657
1,2-Dichloropropane	U		0.190	0.500	1	10/17/2019 19:26	WG1364657
1,1-Dichloropropene	U		0.128	0.500	1	10/17/2019 19:26	WG1364657
1,3-Dichloropropane	U		0.147	1.00	1	10/17/2019 19:26	WG1364657
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/17/2019 19:26	WG1364657
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/17/2019 19:26	WG1364657
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/17/2019 19:26	WG1364657
2,2-Dichloropropane	U		0.0929	0.500	1	10/17/2019 19:26	WG1364657
Di-isopropyl ether	U		0.0924	0.500	1	10/17/2019 19:26	WG1364657
Ethylbenzene	16.6		0.158	0.500	1	10/17/2019 19:26	WG1364657
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/17/2019 19:26	WG1364657
2-Hexanone	U		0.757	5.00	1	10/17/2019 19:26	WG1364657
n-Hexane	4.81	J	0.305	5.00	1	10/17/2019 19:26	WG1364657
Iodomethane	U		0.377	10.0	1	10/17/2019 19:26	WG1364657
Isopropylbenzene	49.9		0.126	0.500	1	10/17/2019 19:26	WG1364657
p-Isopropyltoluene	0.312	J	0.138	0.500	1	10/17/2019 19:26	WG1364657
2-Butanone (MEK)	U		1.28	5.00	1	10/17/2019 19:26	WG1364657
Methylene Chloride	U		1.07	2.50	1	10/17/2019 19:26	WG1364657
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/17/2019 19:26	WG1364657
Methyl tert-butyl ether	U		0.102	0.500	1	10/17/2019 19:26	WG1364657
Naphthalene	36.7		0.174	2.50	1	10/17/2019 19:26	WG1364657
n-Propylbenzene	152		0.162	0.500	1	10/17/2019 19:26	WG1364657
Styrene	U		0.117	0.500	1	10/17/2019 19:26	WG1364657
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/17/2019 19:26	WG1364657
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/17/2019 19:26	WG1364657

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/17/2019 19:26	WG1364657
Tetrachloroethene	U		0.199	0.500	1	10/17/2019 19:26	WG1364657
Toluene	2.39		0.412	0.500	1	10/17/2019 19:26	WG1364657
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/17/2019 19:26	WG1364657
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/17/2019 19:26	WG1364657
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/17/2019 19:26	WG1364657
1,1,2-Trichloroethane	U		0.186	0.500	1	10/17/2019 19:26	WG1364657
Trichloroethene	U		0.153	0.500	1	10/17/2019 19:26	WG1364657
Trichlorofluoromethane	U		0.130	2.50	1	10/17/2019 19:26	WG1364657
1,2,3-Trichloropropane	U		0.247	2.50	1	10/17/2019 19:26	WG1364657
1,2,4-Trimethylbenzene	4.11		0.123	0.500	1	10/17/2019 19:26	WG1364657
1,2,3-Trimethylbenzene	7.95		0.0739	0.500	1	10/17/2019 19:26	WG1364657
1,3,5-Trimethylbenzene	0.379	↓	0.124	0.500	1	10/17/2019 19:26	WG1364657
Vinyl acetate	U		0.645	5.00	1	10/17/2019 19:26	WG1364657
Vinyl chloride	U		0.118	0.500	1	10/17/2019 19:26	WG1364657
Xylenes, Total	3.77		0.316	1.50	1	10/17/2019 19:26	WG1364657
(S) Toluene-d8	107			80.0-120		10/17/2019 19:26	WG1364657
(S) 4-Bromofluorobenzene	105			77.0-126		10/17/2019 19:26	WG1364657
(S) 1,2-Dichloroethane-d4	107			70.0-130		10/17/2019 19:26	WG1364657

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3461442-1 10/16/19 00:24

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	3770	↓	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1148434-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1148434-02 10/16/19 01:21 • (DUP) R3461442-2 10/16/19 01:29

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	863000	863000	1	0.0313		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace
DUP: Endpoint pH 4.5

L1148452-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1148452-02 10/16/19 03:07 • (DUP) R3461442-4 10/16/19 03:14

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	545000	548000	1	0.547		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace
DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3461442-3 10/16/19 01:37

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	101000	101	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3460200-1 10/10/19 12:59

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	78.6	↓	51.9	1000
Nitrate	U		22.7	100
Sulfate	U		77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1148416-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1148416-06 10/10/19 22:10 • (DUP) R3460200-3 10/10/19 22:25

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	2180	2170	1	0.299		15
Nitrate	8630	8620	1	0.0568		15
Sulfate	3920	3900	1	0.429	↓	15

L1148422-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1148422-01 10/11/19 01:18 • (DUP) R3460200-6 10/11/19 01:32

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	11500	11700	1	2.26		15
Nitrate	1610	1410	1	13.8		15
Sulfate	13800	13300	1	3.28		15

Laboratory Control Sample (LCS)

(LCS) R3460200-2 10/10/19 13:13

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Chloride	40000	38300	95.8	80.0-120	
Nitrate	8000	7960	99.5	80.0-120	
Sulfate	40000	39500	98.8	80.0-120	



L1148416-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1148416-06 10/10/19 22:10 • (MS) R3460200-4 10/10/19 22:39 • (MSD) R3460200-5 10/10/19 22:54

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	2180	52000	51300	99.7	98.2	1	80.0-120			1.41	15
Nitrate	5000	8630	13300	13200	93.6	91.8	1	80.0-120	E	E	0.651	15
Sulfate	50000	3920	53700	53000	99.5	98.1	1	80.0-120			1.37	15

L1148422-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1148422-01 10/11/19 01:18 • (MS) R3460200-7 10/11/19 01:47

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	11500	60600	98.3	1	80.0-120	
Nitrate	5000	1610	6640	101	1	80.0-120	
Sulfate	50000	13800	63200	99.0	1	80.0-120	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3461018-1 10/12/19 19:40

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	222	↓	102	1000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1148426-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1148426-02 10/12/19 21:27 • (DUP) R3461018-3 10/12/19 21:41

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	13800	13600	1	1.24		20

L1148434-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1148434-02 10/13/19 13:55 • (DUP) R3461018-6 10/13/19 14:08

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	323000	321000	10	0.497		20

Laboratory Control Sample (LCS)

(LCS) R3461018-2 10/12/19 20:10

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC (Total Organic Carbon)	75000	74500	99.4	85.0-115	

L1148430-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1148430-02 10/13/19 12:28 • (MS) R3461018-4 10/13/19 12:42 • (MSD) R3461018-5 10/13/19 12:57

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	890	51800	52100	102	102	1	80.0-120			0.481	20

L1148438-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1148438-01 10/14/19 11:53 • (MS) R3461018-9 10/14/19 12:10 • (MSD) R3461018-10 10/14/19 12:27

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	2390	53300	53500	102	102	1	80.0-120			0.449	20



Method Blank (MB)

(MB) R3461231-1 10/15/19 14:37

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Iron	U		15.0	100
Manganese	0.308	J	0.250	5.00

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3461231-2 10/15/19 14:42 • (LCSD) R3461231-3 10/15/19 14:47

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Iron	5000	5060	5190	101	104	80.0-120			2.60	20
Manganese	50.0	50.2	51.0	100	102	80.0-120			1.57	20

5 Sr

6 Qc

L1148262-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1148262-06 10/15/19 14:52 • (MS) R3461231-5 10/15/19 15:02 • (MSD) R3461231-6 10/15/19 15:07

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Iron	5000	553	5690	5750	103	104	1	75.0-125			1.06	20
Manganese	50.0	27.2	77.2	77.0	100	99.6	1	75.0-125			0.252	20

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3460900-1 10/14/19 15:05

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

L1148844-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1148844-02 10/14/19 15:17 • (DUP) R3460900-2 10/14/19 16:06

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	5560	5470	1	1.51		20
Ethane	141	138	1	2.40		20
Ethene	17.6	17.1	1	3.01		20

L1149259-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1149259-01 10/14/19 16:43 • (DUP) R3460900-3 10/14/19 16:48

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	2030	2050	1	1.19		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3460900-4 10/14/19 16:59 • (LCSD) R3460900-5 10/14/19 17:05

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	76.9	73.6	113	109	85.0-115			4.36	20
Ethane	129	134	130	104	101	85.0-115			2.75	20
Ethene	127	140	136	110	107	85.0-115			2.68	20

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3461176-1 10/15/19 11:12

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Methane	U		0.287	0.678

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1148902-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1148902-01 10/15/19 11:26 • (DUP) R3461176-2 10/15/19 13:07

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	203	210	1	3.41		20

L1148902-15 Original Sample (OS) • Duplicate (DUP)

(OS) L1148902-15 10/15/19 13:40 • (DUP) R3461176-3 10/15/19 13:45

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	3160	3120	1	1.15		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3461176-4 10/15/19 13:59 • (LCSD) R3461176-5 10/15/19 14:04

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Methane	67.8	75.3	75.9	111	112	85.0-115			0.863	20



Method Blank (MB)

(MB) R3462245-3 10/17/19 12:06

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3462245-3 10/17/19 12:06

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	113			80.0-120
(S) 4-Bromofluorobenzene	108			77.0-126
(S) 1,2-Dichloroethane-d4	102			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3462245-1 10/17/19 11:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Acetone	125	159	127	19.0-160	
Acrylonitrile	125	136	109	55.0-149	
Benzene	25.0	21.8	87.2	70.0-123	
Bromobenzene	25.0	21.6	86.4	73.0-121	
Bromodichloromethane	25.0	22.7	90.8	75.0-120	
Bromochloromethane	25.0	25.5	102	76.0-122	
Bromoform	25.0	29.0	116	68.0-132	
Bromomethane	25.0	22.7	90.8	10.0-160	
n-Butylbenzene	25.0	22.8	91.2	73.0-125	
sec-Butylbenzene	25.0	23.2	92.8	75.0-125	
tert-Butylbenzene	25.0	25.3	101	76.0-124	
Carbon disulfide	25.0	21.1	84.4	61.0-128	
Carbon tetrachloride	25.0	25.6	102	68.0-126	
Chlorobenzene	25.0	24.7	98.8	80.0-121	
Chlorodibromomethane	25.0	27.7	111	77.0-125	
Chloroethane	25.0	23.8	95.2	47.0-150	
Chloroform	25.0	21.1	84.4	73.0-120	
Chloromethane	25.0	22.2	88.8	41.0-142	
2-Chlorotoluene	25.0	22.5	90.0	76.0-123	
4-Chlorotoluene	25.0	22.5	90.0	75.0-122	
1,2-Dibromo-3-Chloropropane	25.0	26.4	106	58.0-134	
1,2-Dibromoethane	25.0	24.1	96.4	80.0-122	
Dibromomethane	25.0	25.3	101	80.0-120	
1,2-Dichlorobenzene	25.0	25.3	101	79.0-121	
1,3-Dichlorobenzene	25.0	24.3	97.2	79.0-120	
1,4-Dichlorobenzene	25.0	22.9	91.6	79.0-120	
Dichlorodifluoromethane	25.0	20.9	83.6	51.0-149	
1,1-Dichloroethane	25.0	22.7	90.8	70.0-126	
1,2-Dichloroethane	25.0	22.6	90.4	70.0-128	
1,1-Dichloroethene	25.0	23.3	93.2	71.0-124	
cis-1,2-Dichloroethene	25.0	23.0	92.0	73.0-120	
trans-1,2-Dichloroethene	25.0	22.3	89.2	73.0-120	
1,2-Dichloropropane	25.0	23.7	94.8	77.0-125	
1,1-Dichloropropene	25.0	22.2	88.8	74.0-126	
1,3-Dichloropropane	25.0	23.9	95.6	80.0-120	
cis-1,3-Dichloropropene	25.0	23.7	94.8	80.0-123	
trans-1,3-Dichloropropene	25.0	24.6	98.4	78.0-124	
trans-1,4-Dichloro-2-butene	25.0	25.5	102	33.0-144	
2,2-Dichloropropane	25.0	23.8	95.2	58.0-130	
Di-isopropyl ether	25.0	25.2	101	58.0-138	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3462245-1 10/17/19 11:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Ethylbenzene	25.0	23.9	95.6	79.0-123	
Hexachloro-1,3-butadiene	25.0	24.2	96.8	54.0-138	
2-Hexanone	125	138	110	67.0-149	
n-Hexane	25.0	23.0	92.0	57.0-133	
Iodomethane	125	125	100	33.0-147	
Isopropylbenzene	25.0	26.4	106	76.0-127	
p-Isopropyltoluene	25.0	24.4	97.6	76.0-125	
2-Butanone (MEK)	125	140	112	44.0-160	
Methylene Chloride	25.0	21.5	86.0	67.0-120	
4-Methyl-2-pentanone (MIBK)	125	144	115	68.0-142	
Methyl tert-butyl ether	25.0	24.4	97.6	68.0-125	
Naphthalene	25.0	25.6	102	54.0-135	
n-Propylbenzene	25.0	23.1	92.4	77.0-124	
Styrene	25.0	25.9	104	73.0-130	
1,1,1,2-Tetrachloroethane	25.0	27.4	110	75.0-125	
1,1,2,2-Tetrachloroethane	25.0	23.2	92.8	65.0-130	
1,1,2-Trichlorotrifluoroethane	25.0	24.0	96.0	69.0-132	
Tetrachloroethene	25.0	25.4	102	72.0-132	
Toluene	25.0	23.4	93.6	79.0-120	
1,2,3-Trichlorobenzene	25.0	26.6	106	50.0-138	
1,2,4-Trichlorobenzene	25.0	25.6	102	57.0-137	
1,1,1-Trichloroethane	25.0	24.2	96.8	73.0-124	
1,1,2-Trichloroethane	25.0	24.7	98.8	80.0-120	
Trichloroethene	25.0	24.1	96.4	78.0-124	
Trichlorofluoromethane	25.0	23.8	95.2	59.0-147	
1,2,3-Trichloropropane	25.0	23.7	94.8	73.0-130	
1,2,4-Trimethylbenzene	25.0	22.8	91.2	76.0-121	
1,2,3-Trimethylbenzene	25.0	22.7	90.8	77.0-120	
1,3,5-Trimethylbenzene	25.0	23.5	94.0	76.0-122	
Vinyl acetate	125	140	112	11.0-160	
Vinyl chloride	25.0	23.1	92.4	67.0-131	
Xylenes, Total	75.0	74.6	99.5	79.0-123	
(S) Toluene-d8			110	80.0-120	
(S) 4-Bromofluorobenzene			113	77.0-126	
(S) 1,2-Dichloroethane-d4			108	70.0-130	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 GI

8 AI

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

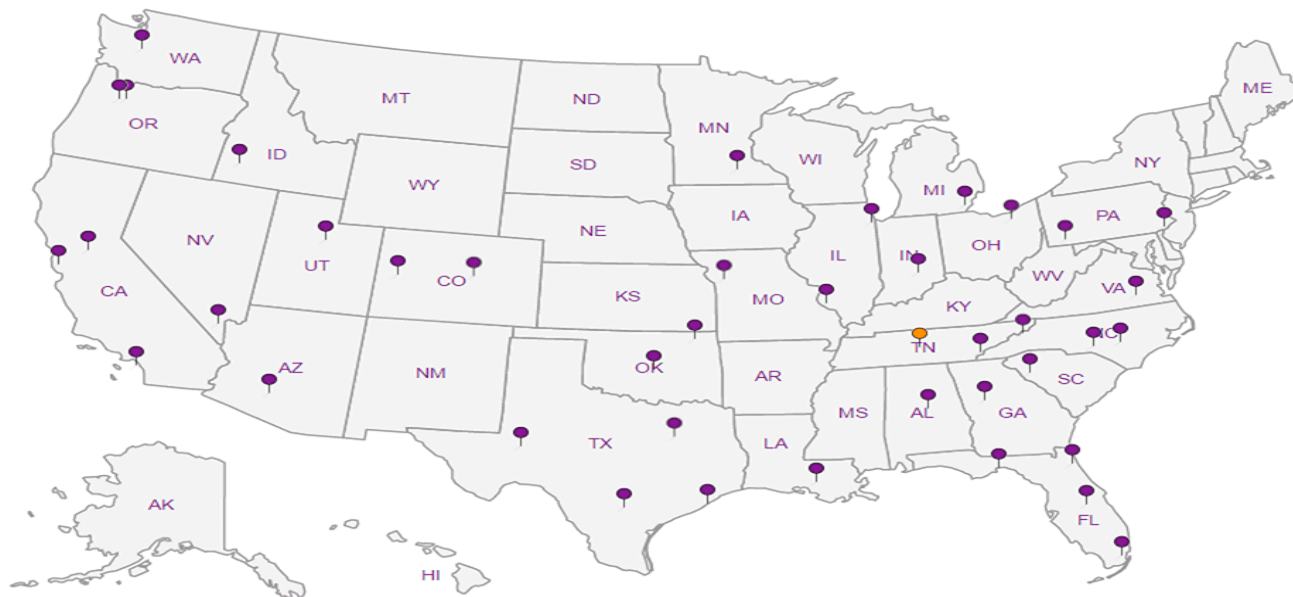
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

PES-Seattle
 Billing Information: PES-Seattle
 Chain of Custody Page 1 of 1
 Analysis / Container / Preservative
 Pres Chk



Report to: Bill Haldeman/Brian O'neal
 Email To: on file

12065 Lebanon Rd
 Mount Juliet, TN 37122
 Phone: 615-758-5858
 Phone: 800-767-5859
 Fax: 615-758-5859



Project Description: American Linen
 City/State: Seattle, WA
 Collected:

L# 1148422
F035

Phone: on file
 Client Project #: 1413.0d.02.501E
 Lab Project #: PESENVSWA-ALP

Acctnum: PESENVSWA
 Template:
 Prelogin:
 TSR: Brian Ford
 PB:

Collected by (print): Hannah Cohen
 Site/Facility ID #: American Linen
 P.O. #

Collected by (signature): Hannah Cohen
 Rush? (Lab MUST Be Notified)
 ___ Same Day ___ Five Day
 ___ Next Day ___ 5 Day (Rad Only)
 ___ Two Day ___ 10 Day (Rad Only)
 ___ Three Day
 Quote #
 Date Results Needed
 Immediately
 Packed on Ice N ___ Y

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	**NO3,SO4,Chloride**48 hour hold	NWTPHGX	VOCs (V8260LLC)	Total Fe Mn 6020	TOC	Alkalinity	EEM (RSK175LL)
MW-323-100919	Grab	GW	75	10/9/19	1135		X	X	X	X	X	X	X
MW-317-100919		GW	40	1	1315		X	X	X	X	X	X	X
SCL-MW101-100919		GW	12	1	1550			X					
		GW											
		GW											
		GW											
		GW											
		GW											
		GW											
		GW											

Shipped Via:
 Remarks
 Sample # (lab only)

* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:
 pH _____ Temp _____
 Flow _____ Other _____

Sample Receipt Checklist
 COC Seal Present/Intact: NP Y N
 COC Signed/Accurate: Y N
 Bottles arrive intact: Y N
 Correct bottles used: Y N
 Sufficient volume sent: Y N
 If Applicable
 VOA Zero Headspace: Y N
 Preservation Correct/Checked: Y N
RAD SCREEN: <0.5 mP/m

Samples returned via:
 ___ UPS ___ FedEx ___ Courier

Tracking # 1203 57146540

Relinquished by: (Signature) Hannah Cohen
 Date: 10/9/19
 Time: 1610
 Received by: (Signature)
 Trip Blank Received: Yes/No
 HCL/MeOH
 TBR

Relinquished by: (Signature)
 Date:
 Time:
 Received by: (Signature)
 Temp: 30.4 °C
 Bottles Received: 21
 If preservation required by Login: Date/Time

Relinquished by: (Signature)
 Date:
 Time:
 Received for lab by: (Signature)
 Date: 10/10/19
 Time: 8:30
 Hold:
 Condition: NCF / OK

PES-Seattle
 Billing Information: PES-Seattle
 Chain of Custody Page 1 of 1
 Pace Analytical
 National Center for Testing & Innovation

Report to: Bill Haldeman/Brian O'neal
 Email To: on file

Project Description: American Linen
 City/State: Seattle, WA
 Collected:

Phone: on file
 Client Project #: 1413.00.02.501E
 Lab Project #: PESENVSWA-ALP

Collected by (print): Hannah Cohen
 Site/Facility ID #: American Linen
 P.O. #

Collected by (signature): *Hannah Cohen*
 Rush? (Lab MUST Be Notified)
 ___ Same Day ___ Five Day
 ___ Next Day ___ 5 Day (Rad Only)
 ___ Two Day ___ 10 Day (Rad Only)
 ___ Three Day
 Quote #
 Date Results Needed
 Immediately
 Packed on Ice N ___ Y

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	**NO3, SO4, Chloride**	NWTPHGX	VOCs (V8260LLC)	Total Fe Mn 6020	TOC	Alkalinity	EEM (RSK175LL)
MW-323-100919	Grab	GW	75	10/9/19	1135		X		X	X	X	X	X
MW-317-100919	1	GW	40	1	1315		X		X	X	X	X	X
SCL-MW101-100919	1	GW	12	1	1550				X				
		GW											
		GW											
		GW											
		GW											
		GW											
		GW											
		GW											



L# 1148422
F035
 Acctnum: PESENVSWA
 Template:
 Prelogin:
 TSR: Brian Ford
 PB:
 Shipped Via:

* Matrix: SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other
 Remarks:
 pH _____ Temp _____
 Flow _____ Other _____

Sample Receipt Checklist
 COC Seal Present/Intact: NP Y N
 COC Signed/Accurate: Y N
 Bottles arrive intact: Y N
 Correct bottles used: Y N
 Sufficient volume sent: Y N
 If Applicable
 VOA Zero Headspace: Y N
 Preservation Correct/Checked: Y N
RAD SCREEN: <0.5 mR/hr

Samples returned via: ___ UPS ___ FedEx ___ Courier
 Tracking # 1203 57146540
 Relinquished by: (Signature) *Hannah Cohen* Date: 10/9/19 Time: 1610
 Received by: (Signature) Trip Blank Received: Yes/No HCL/MeOH TBR
 Relinquished by: (Signature) Date: Time: Received by: (Signature) Temp: *A30.9 °C* Bottles Received: *21*
 If preservation required by Login: Date/Time
 Relinquished by: (Signature) Date: Time: Received for lab by: (Signature) *Hanky Mu* Date: 10/10/19 Time: 8:30
 Hold: Condition: NCF / OK



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	253000		2710	20000	1	10/18/2019 00:08	WG1364209

Sample Narrative:

L1148900-01 WG1364209: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	24400		51.9	1000	1	10/11/2019 19:57	WG1361340
Nitrate	U		22.7	100	1	10/11/2019 19:57	WG1361340
Sulfate	264000		774	50000	10	10/12/2019 10:42	WG1361340

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	2840	B	102	1000	1	10/14/2019 02:49	WG1362294

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	2420		150	1000	10	10/17/2019 00:17	WG1363727
Manganese	1110		2.50	50.0	10	10/17/2019 00:17	WG1363727

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	377		0.287	0.678	1	10/14/2019 16:16	WG1362474
Ethane	18.6		0.296	1.29	1	10/14/2019 16:16	WG1362474
Ethene	U		0.422	1.27	1	10/14/2019 16:16	WG1362474

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		1.05	25.0	1	10/19/2019 18:28	WG1365855
Acrylonitrile	U		0.873	5.00	1	10/19/2019 18:28	WG1365855
Benzene	U		0.0896	0.500	1	10/19/2019 18:28	WG1365855
Bromobenzene	U		0.133	0.500	1	10/19/2019 18:28	WG1365855
Bromodichloromethane	U		0.0800	0.500	1	10/19/2019 18:28	WG1365855
Bromochloromethane	U		0.145	0.500	1	10/19/2019 18:28	WG1365855
Bromoform	U		0.186	0.500	1	10/19/2019 18:28	WG1365855
Bromomethane	U		0.157	2.50	1	10/19/2019 18:28	WG1365855
n-Butylbenzene	U		0.143	0.500	1	10/19/2019 18:28	WG1365855
sec-Butylbenzene	U		0.134	0.500	1	10/19/2019 18:28	WG1365855
tert-Butylbenzene	U		0.183	0.500	1	10/19/2019 18:28	WG1365855
Carbon disulfide	U		0.101	0.500	1	10/19/2019 18:28	WG1365855
Carbon tetrachloride	U		0.159	0.500	1	10/19/2019 18:28	WG1365855
Chlorobenzene	U		0.140	0.500	1	10/19/2019 18:28	WG1365855
Chlorodibromomethane	U		0.128	0.500	1	10/19/2019 18:28	WG1365855
Chloroethane	U		0.141	2.50	1	10/19/2019 18:28	WG1365855
Chloroform	U		0.0860	0.500	1	10/19/2019 18:28	WG1365855
Chloromethane	U		0.153	1.25	1	10/19/2019 18:28	WG1365855
2-Chlorotoluene	U		0.111	0.500	1	10/19/2019 18:28	WG1365855
4-Chlorotoluene	U		0.0972	0.500	1	10/19/2019 18:28	WG1365855

JC 12/2/19

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc



Collected date/time: 10/10/19 08:35

L1148900

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/19/2019 18:28	WG1365855
1,2-Dibromoethane	U		0.193	0.500	1	10/19/2019 18:28	WG1365855
Dibromomethane	U		0.117	0.500	1	10/19/2019 18:28	WG1365855
1,2-Dichlorobenzene	U		0.101	0.500	1	10/19/2019 18:28	WG1365855
1,3-Dichlorobenzene	U		0.130	0.500	1	10/19/2019 18:28	WG1365855
1,4-Dichlorobenzene	U		0.121	0.500	1	10/19/2019 18:28	WG1365855
Dichlorodifluoromethane	U		0.127	2.50	1	10/19/2019 18:28	WG1365855
1,1-Dichloroethane	U		0.114	0.500	1	10/19/2019 18:28	WG1365855
1,2-Dichloroethane	U		0.108	0.500	1	10/19/2019 18:28	WG1365855
1,1-Dichloroethene	3.21		0.188	0.500	1	10/19/2019 18:28	WG1365855
cis-1,2-Dichloroethene	491		0.933	5.00	10	10/21/2019 14:12	WG1366289
trans-1,2-Dichloroethene	1.63		0.152	0.500	1	10/19/2019 18:28	WG1365855
1,2-Dichloropropane	U		0.190	0.500	1	10/19/2019 18:28	WG1365855
1,1-Dichloropropene	U		0.128	0.500	1	10/19/2019 18:28	WG1365855
1,3-Dichloropropane	U		0.147	1.00	1	10/19/2019 18:28	WG1365855
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/19/2019 18:28	WG1365855
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/19/2019 18:28	WG1365855
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/19/2019 18:28	WG1365855
2,2-Dichloropropane	U		0.0929	0.500	1	10/19/2019 18:28	WG1365855
Di-isopropyl ether	U		0.0924	0.500	1	10/19/2019 18:28	WG1365855
Ethylbenzene	U		0.158	0.500	1	10/19/2019 18:28	WG1365855
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/19/2019 18:28	WG1365855
2-Hexanone	U		0.757	5.00	1	10/19/2019 18:28	WG1365855
n-Hexane	U		0.305	5.00	1	10/19/2019 18:28	WG1365855
Iodomethane	U		0.377	10.0	1	10/19/2019 18:28	WG1365855
Isopropylbenzene	U		0.126	0.500	1	10/19/2019 18:28	WG1365855
p-Isopropyltoluene	U		0.138	0.500	1	10/19/2019 18:28	WG1365855
2-Butanone (MEK)	U		1.28	5.00	1	10/19/2019 18:28	WG1365855
Methylene Chloride	U		1.07	2.50	1	10/19/2019 18:28	WG1365855
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/19/2019 18:28	WG1365855
Methyl tert-butyl ether	U		0.102	0.500	1	10/19/2019 18:28	WG1365855
Naphthalene	U		0.174	2.50	1	10/19/2019 18:28	WG1365855
n-Propylbenzene	U		0.162	0.500	1	10/19/2019 18:28	WG1365855
Styrene	U		0.117	0.500	1	10/19/2019 18:28	WG1365855
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/19/2019 18:28	WG1365855
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/19/2019 18:28	WG1365855
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/19/2019 18:28	WG1365855
Tetrachloroethene	26.1		0.199	0.500	1	10/19/2019 18:28	WG1365855
Toluene	U		0.412	0.500	1	10/19/2019 18:28	WG1365855
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/19/2019 18:28	WG1365855
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/19/2019 18:28	WG1365855
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/19/2019 18:28	WG1365855
1,1,2-Trichloroethane	U		0.186	0.500	1	10/19/2019 18:28	WG1365855
Trichloroethene	106		0.153	0.500	1	10/19/2019 18:28	WG1365855
Trichlorofluoromethane	U		0.130	2.50	1	10/19/2019 18:28	WG1365855
1,2,3-Trichloropropane	U		0.247	2.50	1	10/19/2019 18:28	WG1365855
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/19/2019 18:28	WG1365855
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/19/2019 18:28	WG1365855
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/19/2019 18:28	WG1365855
Vinyl acetate	U		0.645	5.00	1	10/19/2019 18:28	WG1365855
Vinyl chloride	43.6		0.118	0.500	1	10/19/2019 18:28	WG1365855
Xylenes, Total	U		0.316	1.50	1	10/19/2019 18:28	WG1365855
(S) Toluene-d8	117			80.0-120		10/19/2019 18:28	WG1365855
(S) Toluene-d8	115			80.0-120		10/21/2019 14:12	WG1366289
(S) 4-Bromofluorobenzene	111			77.0-126		10/19/2019 18:28	WG1365855
(S) 4-Bromofluorobenzene	92.4			77.0-126		10/21/2019 14:12	WG1366289

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/2/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	99.2			70.0-130		10/19/2019 18:28	WG1365855
(S) 1,2-Dichloroethane-d4	95.6			70.0-130		10/21/2019 14:12	WG1366289

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

JC 12/2/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		1.05	25.0	1	10/19/2019 18:48	WG1365855
Acrylonitrile	U		0.873	5.00	1	10/19/2019 18:48	WG1365855
Benzene	133		0.0896	0.500	1	10/19/2019 18:48	WG1365855
Bromobenzene	U		0.133	0.500	1	10/19/2019 18:48	WG1365855
Bromodichloromethane	U		0.0800	0.500	1	10/19/2019 18:48	WG1365855
Bromochloromethane	U		0.145	0.500	1	10/19/2019 18:48	WG1365855
Bromoform	U		0.186	0.500	1	10/19/2019 18:48	WG1365855
Bromomethane	U		0.157	2.50	1	10/19/2019 18:48	WG1365855
n-Butylbenzene	U		0.143	0.500	1	10/19/2019 18:48	WG1365855
sec-Butylbenzene	8.08		0.134	0.500	1	10/19/2019 18:48	WG1365855
tert-Butylbenzene	0.260	J	0.183	0.500	1	10/19/2019 18:48	WG1365855
Carbon disulfide	U		0.101	0.500	1	10/19/2019 18:48	WG1365855
Carbon tetrachloride	U		0.159	0.500	1	10/19/2019 18:48	WG1365855
Chlorobenzene	U		0.140	0.500	1	10/19/2019 18:48	WG1365855
Chlorodibromomethane	U		0.128	0.500	1	10/19/2019 18:48	WG1365855
Chloroethane	U		0.141	2.50	1	10/19/2019 18:48	WG1365855
Chloroform	U		0.0860	0.500	1	10/19/2019 18:48	WG1365855
Chloromethane	U		0.153	1.25	1	10/19/2019 18:48	WG1365855
2-Chlorotoluene	U		0.111	0.500	1	10/19/2019 18:48	WG1365855
4-Chlorotoluene	U		0.0972	0.500	1	10/19/2019 18:48	WG1365855
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/19/2019 18:48	WG1365855
1,2-Dibromoethane	U		0.193	0.500	1	10/19/2019 18:48	WG1365855
Dibromomethane	U		0.117	0.500	1	10/19/2019 18:48	WG1365855
1,2-Dichlorobenzene	U		0.101	0.500	1	10/19/2019 18:48	WG1365855
1,3-Dichlorobenzene	U		0.130	0.500	1	10/19/2019 18:48	WG1365855
1,4-Dichlorobenzene	U		0.121	0.500	1	10/19/2019 18:48	WG1365855
Dichlorodifluoromethane	U		0.127	2.50	1	10/19/2019 18:48	WG1365855
1,1-Dichloroethane	U		0.114	0.500	1	10/19/2019 18:48	WG1365855
1,2-Dichloroethane	U		0.108	0.500	1	10/19/2019 18:48	WG1365855
1,1-Dichloroethene	U		0.188	0.500	1	10/19/2019 18:48	WG1365855
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/19/2019 18:48	WG1365855
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/19/2019 18:48	WG1365855
1,2-Dichloropropane	U		0.190	0.500	1	10/19/2019 18:48	WG1365855
1,1-Dichloropropene	U		0.128	0.500	1	10/19/2019 18:48	WG1365855
1,3-Dichloropropane	U		0.147	1.00	1	10/19/2019 18:48	WG1365855
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/19/2019 18:48	WG1365855
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/19/2019 18:48	WG1365855
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/19/2019 18:48	WG1365855
2,2-Dichloropropane	U		0.0929	0.500	1	10/19/2019 18:48	WG1365855
Di-isopropyl ether	U		0.0924	0.500	1	10/19/2019 18:48	WG1365855
Ethylbenzene	41.0		0.158	0.500	1	10/19/2019 18:48	WG1365855
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/19/2019 18:48	WG1365855
2-Hexanone	U		0.757	5.00	1	10/19/2019 18:48	WG1365855
n-Hexane	55.0		0.305	5.00	1	10/19/2019 18:48	WG1365855
Iodomethane	U		0.377	10.0	1	10/19/2019 18:48	WG1365855
Isopropylbenzene	149		0.126	0.500	1	10/19/2019 18:48	WG1365855
p-Isopropyltoluene	1.96		0.138	0.500	1	10/19/2019 18:48	WG1365855
2-Butanone (MEK)	U		1.28	5.00	1	10/19/2019 18:48	WG1365855
Methylene Chloride	U		1.07	2.50	1	10/19/2019 18:48	WG1365855
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/19/2019 18:48	WG1365855
Methyl tert-butyl ether	U		0.102	0.500	1	10/19/2019 18:48	WG1365855
Naphthalene	4.44		0.174	2.50	1	10/19/2019 18:48	WG1365855
n-Propylbenzene	359	J JO	1.62	5.00	10	10/21/2019 14:32	WG1366289
Styrene	U		0.117	0.500	1	10/19/2019 18:48	WG1365855
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/19/2019 18:48	WG1365855
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/19/2019 18:48	WG1365855

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/2/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/19/2019 18:48	WG1365855
Tetrachloroethene	U		0.199	0.500	1	10/19/2019 18:48	WG1365855
Toluene	15.5		0.412	0.500	1	10/19/2019 18:48	WG1365855
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/19/2019 18:48	WG1365855
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/19/2019 18:48	WG1365855
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/19/2019 18:48	WG1365855
1,1,2-Trichloroethane	U		0.186	0.500	1	10/19/2019 18:48	WG1365855
Trichloroethene	U		0.153	0.500	1	10/19/2019 18:48	WG1365855
Trichlorofluoromethane	U		0.130	2.50	1	10/19/2019 18:48	WG1365855
1,2,3-Trichloropropane	U		0.247	2.50	1	10/19/2019 18:48	WG1365855
1,2,4-Trimethylbenzene	0.510		0.123	0.500	1	10/19/2019 18:48	WG1365855
1,2,3-Trimethylbenzene	14.4		0.0739	0.500	1	10/19/2019 18:48	WG1365855
1,3,5-Trimethylbenzene	5.00		0.124	0.500	1	10/19/2019 18:48	WG1365855
Vinyl acetate	U		0.645	5.00	1	10/19/2019 18:48	WG1365855
Vinyl chloride	U		0.118	0.500	1	10/19/2019 18:48	WG1365855
Xylenes, Total	34.6		0.316	1.50	1	10/19/2019 18:48	WG1365855
(S) Toluene-d8	105			80.0-120		10/19/2019 18:48	WG1365855
(S) Toluene-d8	112			80.0-120		10/21/2019 14:32	WG1366289
(S) 4-Bromofluorobenzene	105			77.0-126		10/19/2019 18:48	WG1365855
(S) 4-Bromofluorobenzene	94.5			77.0-126		10/21/2019 14:32	WG1366289
(S) 1,2-Dichloroethane-d4	106			70.0-130		10/19/2019 18:48	WG1365855
(S) 1,2-Dichloroethane-d4	97.0			70.0-130		10/21/2019 14:32	WG1366289

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/2/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U	UJ JO	1.05	25.0	1	10/20/2019 23:18	WG1366370
Acrylonitrile	U		0.873	5.00	1	10/20/2019 23:18	WG1366370
Benzene	U		0.0896	0.500	1	10/20/2019 23:18	WG1366370
Bromobenzene	U		0.133	0.500	1	10/20/2019 23:18	WG1366370
Bromodichloromethane	U		0.0800	0.500	1	10/20/2019 23:18	WG1366370
Bromochloromethane	U		0.145	0.500	1	10/20/2019 23:18	WG1366370
Bromoform	U		0.186	0.500	1	10/20/2019 23:18	WG1366370
Bromomethane	U		0.157	2.50	1	10/20/2019 23:18	WG1366370
n-Butylbenzene	U		0.143	0.500	1	10/20/2019 23:18	WG1366370
sec-Butylbenzene	U		0.134	0.500	1	10/20/2019 23:18	WG1366370
tert-Butylbenzene	U		0.183	0.500	1	10/20/2019 23:18	WG1366370
Carbon disulfide	U		0.101	0.500	1	10/20/2019 23:18	WG1366370
Carbon tetrachloride	U		0.159	0.500	1	10/20/2019 23:18	WG1366370
Chlorobenzene	U		0.140	0.500	1	10/20/2019 23:18	WG1366370
Chlorodibromomethane	U		0.128	0.500	1	10/20/2019 23:18	WG1366370
Chloroethane	U		0.141	2.50	1	10/20/2019 23:18	WG1366370
Chloroform	U		0.0860	0.500	1	10/20/2019 23:18	WG1366370
Chloromethane	U		0.153	1.25	1	10/20/2019 23:18	WG1366370
2-Chlorotoluene	U		0.111	0.500	1	10/20/2019 23:18	WG1366370
4-Chlorotoluene	U		0.0972	0.500	1	10/20/2019 23:18	WG1366370
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/20/2019 23:18	WG1366370
1,2-Dibromoethane	U		0.193	0.500	1	10/20/2019 23:18	WG1366370
Dibromomethane	U		0.117	0.500	1	10/20/2019 23:18	WG1366370
1,2-Dichlorobenzene	U		0.101	0.500	1	10/20/2019 23:18	WG1366370
1,3-Dichlorobenzene	U		0.130	0.500	1	10/20/2019 23:18	WG1366370
1,4-Dichlorobenzene	U		0.121	0.500	1	10/20/2019 23:18	WG1366370
Dichlorodifluoromethane	U		0.127	2.50	1	10/20/2019 23:18	WG1366370
1,1-Dichloroethane	U		0.114	0.500	1	10/20/2019 23:18	WG1366370
1,2-Dichloroethane	U		0.108	0.500	1	10/20/2019 23:18	WG1366370
1,1-Dichloroethene	U		0.188	0.500	1	10/20/2019 23:18	WG1366370
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/20/2019 23:18	WG1366370
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/20/2019 23:18	WG1366370
1,2-Dichloropropane	0.253	J	0.190	0.500	1	10/20/2019 23:18	WG1366370
1,1-Dichloropropene	U		0.128	0.500	1	10/20/2019 23:18	WG1366370
1,3-Dichloropropane	U		0.147	1.00	1	10/20/2019 23:18	WG1366370
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/20/2019 23:18	WG1366370
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/20/2019 23:18	WG1366370
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/20/2019 23:18	WG1366370
2,2-Dichloropropane	U		0.0929	0.500	1	10/20/2019 23:18	WG1366370
Di-isopropyl ether	U		0.0924	0.500	1	10/20/2019 23:18	WG1366370
Ethylbenzene	U		0.158	0.500	1	10/20/2019 23:18	WG1366370
Hexachloro-1,3-butadiene	U	J4	0.157	1.00	1	10/20/2019 23:18	WG1366370
2-Hexanone	U		0.757	5.00	1	10/20/2019 23:18	WG1366370
n-Hexane	U		0.305	5.00	1	10/20/2019 23:18	WG1366370
Iodomethane	U	UJ JO	0.377	10.0	1	10/20/2019 23:18	WG1366370
Isopropylbenzene	U		0.126	0.500	1	10/20/2019 23:18	WG1366370
p-Isopropyltoluene	U		0.138	0.500	1	10/20/2019 23:18	WG1366370
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	10/20/2019 23:18	WG1366370
Methylene Chloride	U		1.07	2.50	1	10/20/2019 23:18	WG1366370
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/20/2019 23:18	WG1366370
Methyl tert-butyl ether	U		0.102	0.500	1	10/20/2019 23:18	WG1366370
Naphthalene	0.886	U BJJO	0.174	2.50	1	10/20/2019 23:18	WG1366370
n-Propylbenzene	U		0.162	0.500	1	10/20/2019 23:18	WG1366370
Styrene	U		0.117	0.500	1	10/20/2019 23:18	WG1366370
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/20/2019 23:18	WG1366370
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/20/2019 23:18	WG1366370

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/2/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/20/2019 23:18	WG1366370
Tetrachloroethene	U		0.199	0.500	1	10/20/2019 23:18	WG1366370
Toluene	U		0.412	0.500	1	10/20/2019 23:18	WG1366370
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/20/2019 23:18	WG1366370
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/20/2019 23:18	WG1366370
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/20/2019 23:18	WG1366370
1,1,2-Trichloroethane	U		0.186	0.500	1	10/20/2019 23:18	WG1366370
Trichloroethene	0.167	U	0.153	0.500	1	10/20/2019 23:18	WG1366370
Trichlorofluoromethane	U		0.130	2.50	1	10/20/2019 23:18	WG1366370
1,2,3-Trichloropropane	U		0.247	2.50	1	10/20/2019 23:18	WG1366370
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/20/2019 23:18	WG1366370
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/20/2019 23:18	WG1366370
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/20/2019 23:18	WG1366370
Vinyl acetate	U		0.645	5.00	1	10/20/2019 23:18	WG1366370
Vinyl chloride	U		0.118	0.500	1	10/20/2019 23:18	WG1366370
Xylenes, Total	U		0.316	1.50	1	10/20/2019 23:18	WG1366370
(S) Toluene-d8	95.6			80.0-120		10/20/2019 23:18	WG1366370
(S) 4-Bromofluorobenzene	89.6			77.0-126		10/20/2019 23:18	WG1366370
(S) 1,2-Dichloroethane-d4	81.3			70.0-130		10/20/2019 23:18	WG1366370

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/2/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	394000		2710	20000	1	10/18/2019 00:15	WG1364209

Sample Narrative:

L1148900-04 WG1364209: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	45900		51.9	1000	1	10/11/2019 20:14	WG1361340
Nitrate	U		22.7	100	1	10/11/2019 20:14	WG1361340
Sulfate	35000		77.4	5000	1	10/11/2019 20:14	WG1361340

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	5310	B	102	1000	1	10/14/2019 03:05	WG1362294

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	349		15.0	100	1	10/16/2019 22:45	WG1363727
Manganese	738		1.25	25.0	5	10/17/2019 00:21	WG1363727

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	856		0.287	0.678	1	10/14/2019 16:19	WG1362474
Ethane	40.8		0.296	1.29	1	10/14/2019 16:19	WG1362474
Ethene	10.4		0.422	1.27	1	10/14/2019 16:19	WG1362474

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	3.51	J	1.05	25.0	1	10/19/2019 19:29	WG1365855
Acrylonitrile	U		0.873	5.00	1	10/19/2019 19:29	WG1365855
Benzene	U		0.0896	0.500	1	10/19/2019 19:29	WG1365855
Bromobenzene	U		0.133	0.500	1	10/19/2019 19:29	WG1365855
Bromodichloromethane	U		0.0800	0.500	1	10/19/2019 19:29	WG1365855
Bromochloromethane	U		0.145	0.500	1	10/19/2019 19:29	WG1365855
Bromoform	U		0.186	0.500	1	10/19/2019 19:29	WG1365855
Bromomethane	U		0.157	2.50	1	10/19/2019 19:29	WG1365855
n-Butylbenzene	U		0.143	0.500	1	10/19/2019 19:29	WG1365855
sec-Butylbenzene	U		0.134	0.500	1	10/19/2019 19:29	WG1365855
tert-Butylbenzene	U		0.183	0.500	1	10/19/2019 19:29	WG1365855
Carbon disulfide	0.343	J	0.101	0.500	1	10/19/2019 19:29	WG1365855
Carbon tetrachloride	U		0.159	0.500	1	10/19/2019 19:29	WG1365855
Chlorobenzene	U		0.140	0.500	1	10/19/2019 19:29	WG1365855
Chlorodibromomethane	U		0.128	0.500	1	10/19/2019 19:29	WG1365855
Chloroethane	U		0.141	2.50	1	10/19/2019 19:29	WG1365855
Chloroform	U		0.0860	0.500	1	10/19/2019 19:29	WG1365855
Chloromethane	U		0.153	1.25	1	10/19/2019 19:29	WG1365855
2-Chlorotoluene	U		0.111	0.500	1	10/19/2019 19:29	WG1365855
4-Chlorotoluene	U		0.0972	0.500	1	10/19/2019 19:29	WG1365855

JC 12/2/19

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/10/19 11:20

L1148900

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/19/2019 19:29	WG1365855
1,2-Dibromoethane	U		0.193	0.500	1	10/19/2019 19:29	WG1365855
Dibromomethane	U		0.117	0.500	1	10/19/2019 19:29	WG1365855
1,2-Dichlorobenzene	U		0.101	0.500	1	10/19/2019 19:29	WG1365855
1,3-Dichlorobenzene	U		0.130	0.500	1	10/19/2019 19:29	WG1365855
1,4-Dichlorobenzene	U		0.121	0.500	1	10/19/2019 19:29	WG1365855
Dichlorodifluoromethane	U		0.127	2.50	1	10/19/2019 19:29	WG1365855
1,1-Dichloroethane	U		0.114	0.500	1	10/19/2019 19:29	WG1365855
1,2-Dichloroethane	U		0.108	0.500	1	10/19/2019 19:29	WG1365855
1,1-Dichloroethene	0.665		0.188	0.500	1	10/19/2019 19:29	WG1365855
cis-1,2-Dichloroethene	173		0.0933	0.500	1	10/19/2019 19:29	WG1365855
trans-1,2-Dichloroethene	0.221	U	0.152	0.500	1	10/19/2019 19:29	WG1365855
1,2-Dichloropropane	U		0.190	0.500	1	10/19/2019 19:29	WG1365855
1,1-Dichloropropene	U		0.128	0.500	1	10/19/2019 19:29	WG1365855
1,3-Dichloropropane	U		0.147	1.00	1	10/19/2019 19:29	WG1365855
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/19/2019 19:29	WG1365855
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/19/2019 19:29	WG1365855
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/19/2019 19:29	WG1365855
2,2-Dichloropropane	U		0.0929	0.500	1	10/19/2019 19:29	WG1365855
Di-isopropyl ether	U		0.0924	0.500	1	10/19/2019 19:29	WG1365855
Ethylbenzene	U		0.158	0.500	1	10/19/2019 19:29	WG1365855
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/19/2019 19:29	WG1365855
2-Hexanone	U		0.757	5.00	1	10/19/2019 19:29	WG1365855
n-Hexane	U		0.305	5.00	1	10/19/2019 19:29	WG1365855
Iodomethane	U		0.377	10.0	1	10/19/2019 19:29	WG1365855
Isopropylbenzene	U		0.126	0.500	1	10/19/2019 19:29	WG1365855
p-Isopropyltoluene	U		0.138	0.500	1	10/19/2019 19:29	WG1365855
2-Butanone (MEK)	2.39	U	1.28	5.00	1	10/19/2019 19:29	WG1365855
Methylene Chloride	U		1.07	2.50	1	10/19/2019 19:29	WG1365855
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/19/2019 19:29	WG1365855
Methyl tert-butyl ether	U		0.102	0.500	1	10/19/2019 19:29	WG1365855
Naphthalene	U		0.174	2.50	1	10/19/2019 19:29	WG1365855
n-Propylbenzene	U		0.162	0.500	1	10/19/2019 19:29	WG1365855
Styrene	U		0.117	0.500	1	10/19/2019 19:29	WG1365855
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/19/2019 19:29	WG1365855
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/19/2019 19:29	WG1365855
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/19/2019 19:29	WG1365855
Tetrachloroethene	20.4		0.199	0.500	1	10/19/2019 19:29	WG1365855
Toluene	U		0.412	0.500	1	10/19/2019 19:29	WG1365855
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/19/2019 19:29	WG1365855
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/19/2019 19:29	WG1365855
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/19/2019 19:29	WG1365855
1,1,2-Trichloroethane	U		0.186	0.500	1	10/19/2019 19:29	WG1365855
Trichloroethene	46.1		0.153	0.500	1	10/19/2019 19:29	WG1365855
Trichlorofluoromethane	U		0.130	2.50	1	10/19/2019 19:29	WG1365855
1,2,3-Trichloropropane	U		0.247	2.50	1	10/19/2019 19:29	WG1365855
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/19/2019 19:29	WG1365855
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/19/2019 19:29	WG1365855
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/19/2019 19:29	WG1365855
Vinyl acetate	U		0.645	5.00	1	10/19/2019 19:29	WG1365855
Vinyl chloride	25.1		0.118	0.500	1	10/19/2019 19:29	WG1365855
Xylenes, Total	U		0.316	1.50	1	10/19/2019 19:29	WG1365855
(S) Toluene-d8	114			80.0-120		10/19/2019 19:29	WG1365855
(S) 4-Bromofluorobenzene	111			77.0-126		10/19/2019 19:29	WG1365855
(S) 1,2-Dichloroethane-d4	98.9			70.0-130		10/19/2019 19:29	WG1365855

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/2/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
	ug/l		ug/l	ug/l		date / time		
Acetone	U		1.05	25.0	1	10/19/2019 19:49	WG1365855	
Acrylonitrile	U		0.873	5.00	1	10/19/2019 19:49	WG1365855	
Benzene	20.3		0.0896	0.500	1	10/19/2019 19:49	WG1365855	
Bromobenzene	U		0.133	0.500	1	10/19/2019 19:49	WG1365855	
Bromodichloromethane	U		0.0800	0.500	1	10/19/2019 19:49	WG1365855	
Bromochloromethane	U		0.145	0.500	1	10/19/2019 19:49	WG1365855	
Bromoform	U		0.186	0.500	1	10/19/2019 19:49	WG1365855	
Bromomethane	U		0.157	2.50	1	10/19/2019 19:49	WG1365855	
n-Butylbenzene	U		0.143	0.500	1	10/19/2019 19:49	WG1365855	
sec-Butylbenzene	2.75		0.134	0.500	1	10/19/2019 19:49	WG1365855	
tert-Butylbenzene	U		0.183	0.500	1	10/19/2019 19:49	WG1365855	
Carbon disulfide	U		0.101	0.500	1	10/19/2019 19:49	WG1365855	
Carbon tetrachloride	U		0.159	0.500	1	10/19/2019 19:49	WG1365855	
Chlorobenzene	U		0.140	0.500	1	10/19/2019 19:49	WG1365855	
Chlorodibromomethane	U		0.128	0.500	1	10/19/2019 19:49	WG1365855	
Chloroethane	U		0.141	2.50	1	10/19/2019 19:49	WG1365855	
Chloroform	U		0.0860	0.500	1	10/19/2019 19:49	WG1365855	
Chloromethane	U		0.153	1.25	1	10/19/2019 19:49	WG1365855	
2-Chlorotoluene	U		0.111	0.500	1	10/19/2019 19:49	WG1365855	
4-Chlorotoluene	U		0.0972	0.500	1	10/19/2019 19:49	WG1365855	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/19/2019 19:49	WG1365855	
1,2-Dibromoethane	U		0.193	0.500	1	10/19/2019 19:49	WG1365855	
Dibromomethane	U		0.117	0.500	1	10/19/2019 19:49	WG1365855	
1,2-Dichlorobenzene	U		0.101	0.500	1	10/19/2019 19:49	WG1365855	
1,3-Dichlorobenzene	U		0.130	0.500	1	10/19/2019 19:49	WG1365855	
1,4-Dichlorobenzene	U		0.121	0.500	1	10/19/2019 19:49	WG1365855	
Dichlorodifluoromethane	U		0.127	2.50	1	10/19/2019 19:49	WG1365855	
1,1-Dichloroethane	U		0.114	0.500	1	10/19/2019 19:49	WG1365855	
1,2-Dichloroethane	U		0.108	0.500	1	10/19/2019 19:49	WG1365855	
1,1-Dichloroethene	U		0.188	0.500	1	10/19/2019 19:49	WG1365855	
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/19/2019 19:49	WG1365855	
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/19/2019 19:49	WG1365855	
1,2-Dichloropropane	U		0.190	0.500	1	10/19/2019 19:49	WG1365855	
1,1-Dichloropropene	U		0.128	0.500	1	10/19/2019 19:49	WG1365855	
1,3-Dichloropropane	U		0.147	1.00	1	10/19/2019 19:49	WG1365855	
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/19/2019 19:49	WG1365855	
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/19/2019 19:49	WG1365855	
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/19/2019 19:49	WG1365855	
2,2-Dichloropropane	U		0.0929	0.500	1	10/19/2019 19:49	WG1365855	
Di-isopropyl ether	0.813		0.0924	0.500	1	10/19/2019 19:49	WG1365855	
Ethylbenzene	307		1.58	5.00	10	10/21/2019 14:53	WG1366289	
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/19/2019 19:49	WG1365855	
2-Hexanone	U		0.757	5.00	1	10/19/2019 19:49	WG1365855	
n-Hexane	14.1		0.305	5.00	1	10/19/2019 19:49	WG1365855	
Iodomethane	U		0.377	10.0	1	10/19/2019 19:49	WG1365855	
Isopropylbenzene	28.7		0.126	0.500	1	10/19/2019 19:49	WG1365855	
p-Isopropyltoluene	0.676		0.138	0.500	1	10/19/2019 19:49	WG1365855	
2-Butanone (MEK)	U		1.28	5.00	1	10/19/2019 19:49	WG1365855	
Methylene Chloride	U		1.07	2.50	1	10/19/2019 19:49	WG1365855	
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/19/2019 19:49	WG1365855	
Methyl tert-butyl ether	U		0.102	0.500	1	10/19/2019 19:49	WG1365855	
Naphthalene	89.5	J	<u>JO</u>	1.74	25.0	10	10/21/2019 14:53	WG1366289
n-Propylbenzene	58.4		0.162	0.500	1	10/19/2019 19:49	WG1365855	
Styrene	U		0.117	0.500	1	10/19/2019 19:49	WG1365855	
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/19/2019 19:49	WG1365855	
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/19/2019 19:49	WG1365855	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/2/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/19/2019 19:49	WG1365855
Tetrachloroethene	U		0.199	0.500	1	10/19/2019 19:49	WG1365855
Toluene	6.00		0.412	0.500	1	10/19/2019 19:49	WG1365855
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/19/2019 19:49	WG1365855
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/19/2019 19:49	WG1365855
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/19/2019 19:49	WG1365855
1,1,2-Trichloroethane	U		0.186	0.500	1	10/19/2019 19:49	WG1365855
Trichloroethene	U		0.153	0.500	1	10/19/2019 19:49	WG1365855
Trichlorofluoromethane	U		0.130	2.50	1	10/19/2019 19:49	WG1365855
1,2,3-Trichloropropane	U		0.247	2.50	1	10/19/2019 19:49	WG1365855
1,2,4-Trimethylbenzene	130		0.123	0.500	1	10/19/2019 19:49	WG1365855
1,2,3-Trimethylbenzene	119		0.0739	0.500	1	10/19/2019 19:49	WG1365855
1,3,5-Trimethylbenzene	8.19		0.124	0.500	1	10/19/2019 19:49	WG1365855
Vinyl acetate	U		0.645	5.00	1	10/19/2019 19:49	WG1365855
Vinyl chloride	U		0.118	0.500	1	10/19/2019 19:49	WG1365855
Xylenes, Total	123		0.316	1.50	1	10/19/2019 19:49	WG1365855
(S) Toluene-d8	106			80.0-120		10/19/2019 19:49	WG1365855
(S) Toluene-d8	109			80.0-120		10/21/2019 14:53	WG1366289
(S) 4-Bromofluorobenzene	108			77.0-126		10/19/2019 19:49	WG1365855
(S) 4-Bromofluorobenzene	89.8			77.0-126		10/21/2019 14:53	WG1366289
(S) 1,2-Dichloroethane-d4	99.4			70.0-130		10/19/2019 19:49	WG1365855
(S) 1,2-Dichloroethane-d4	95.0			70.0-130		10/21/2019 14:53	WG1366289

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/2/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	570000		2710	20000	1	10/18/2019 00:22	WG1364209

Sample Narrative:

L1148900-06 WG1364209: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	26100		51.9	1000	1	10/11/2019 21:07	WG1361340
Nitrate	U		22.7	100	1	10/11/2019 21:07	WG1361340
Sulfate	43700		77.4	5000	1	10/11/2019 21:07	WG1361340

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	5830	P	102	1000	1	10/14/2019 04:05	WG1362294

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	13500		150	1000	10	10/17/2019 00:24	WG1363727
Manganese	1760		2.50	50.0	10	10/17/2019 00:24	WG1363727

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	3650		0.287	0.678	1	10/14/2019 16:23	WG1362474
Ethane	70.7		0.296	1.29	1	10/14/2019 16:23	WG1362474
Ethene	6.24		0.422	1.27	1	10/14/2019 16:23	WG1362474

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.73	J	1.05	25.0	1	10/19/2019 20:09	WG1365855
Acrylonitrile	U		0.873	5.00	1	10/19/2019 20:09	WG1365855
Benzene	3.16		0.0896	0.500	1	10/19/2019 20:09	WG1365855
Bromobenzene	U		0.133	0.500	1	10/19/2019 20:09	WG1365855
Bromodichloromethane	U		0.0800	0.500	1	10/19/2019 20:09	WG1365855
Bromochloromethane	U		0.145	0.500	1	10/19/2019 20:09	WG1365855
Bromoform	U		0.186	0.500	1	10/19/2019 20:09	WG1365855
Bromomethane	U		0.157	2.50	1	10/19/2019 20:09	WG1365855
n-Butylbenzene	U		0.143	0.500	1	10/19/2019 20:09	WG1365855
sec-Butylbenzene	U		0.134	0.500	1	10/19/2019 20:09	WG1365855
tert-Butylbenzene	U		0.183	0.500	1	10/19/2019 20:09	WG1365855
Carbon disulfide	U		0.101	0.500	1	10/19/2019 20:09	WG1365855
Carbon tetrachloride	U		0.159	0.500	1	10/19/2019 20:09	WG1365855
Chlorobenzene	U		0.140	0.500	1	10/19/2019 20:09	WG1365855
Chlorodibromomethane	U		0.128	0.500	1	10/19/2019 20:09	WG1365855
Chloroethane	U		0.141	2.50	1	10/19/2019 20:09	WG1365855
Chloroform	U		0.0860	0.500	1	10/19/2019 20:09	WG1365855
Chloromethane	U		0.153	1.25	1	10/19/2019 20:09	WG1365855
2-Chlorotoluene	U		0.111	0.500	1	10/19/2019 20:09	WG1365855
4-Chlorotoluene	U		0.0972	0.500	1	10/19/2019 20:09	WG1365855

JC 12/2/19

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/19/2019 20:09	WG1365855
1,2-Dibromoethane	U		0.193	0.500	1	10/19/2019 20:09	WG1365855
Dibromomethane	U		0.117	0.500	1	10/19/2019 20:09	WG1365855
1,2-Dichlorobenzene	U		0.101	0.500	1	10/19/2019 20:09	WG1365855
1,3-Dichlorobenzene	U		0.130	0.500	1	10/19/2019 20:09	WG1365855
1,4-Dichlorobenzene	U		0.121	0.500	1	10/19/2019 20:09	WG1365855
Dichlorodifluoromethane	U		0.127	2.50	1	10/19/2019 20:09	WG1365855
1,1-Dichloroethane	U		0.114	0.500	1	10/19/2019 20:09	WG1365855
1,2-Dichloroethane	U		0.108	0.500	1	10/19/2019 20:09	WG1365855
1,1-Dichloroethene	9.11		0.188	0.500	1	10/19/2019 20:09	WG1365855
cis-1,2-Dichloroethene	1080		2.33	12.5	25	10/21/2019 15:13	WG1366289
trans-1,2-Dichloroethene	5.55		0.152	0.500	1	10/19/2019 20:09	WG1365855
1,2-Dichloropropane	U		0.190	0.500	1	10/19/2019 20:09	WG1365855
1,1-Dichloropropene	U		0.128	0.500	1	10/19/2019 20:09	WG1365855
1,3-Dichloropropane	U		0.147	1.00	1	10/19/2019 20:09	WG1365855
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/19/2019 20:09	WG1365855
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/19/2019 20:09	WG1365855
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/19/2019 20:09	WG1365855
2,2-Dichloropropane	U		0.0929	0.500	1	10/19/2019 20:09	WG1365855
Di-isopropyl ether	U		0.0924	0.500	1	10/19/2019 20:09	WG1365855
Ethylbenzene	0.327	U	0.158	0.500	1	10/19/2019 20:09	WG1365855
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/19/2019 20:09	WG1365855
2-Hexanone	U		0.757	5.00	1	10/19/2019 20:09	WG1365855
n-Hexane	U		0.305	5.00	1	10/19/2019 20:09	WG1365855
Iodomethane	U		0.377	10.0	1	10/19/2019 20:09	WG1365855
Isopropylbenzene	U		0.126	0.500	1	10/19/2019 20:09	WG1365855
p-Isopropyltoluene	U		0.138	0.500	1	10/19/2019 20:09	WG1365855
2-Butanone (MEK)	U		1.28	5.00	1	10/19/2019 20:09	WG1365855
Methylene Chloride	U		1.07	2.50	1	10/19/2019 20:09	WG1365855
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/19/2019 20:09	WG1365855
Methyl tert-butyl ether	U		0.102	0.500	1	10/19/2019 20:09	WG1365855
Naphthalene	23.8	U BJJO	4.35	62.5	25	10/21/2019 15:13	WG1366289
n-Propylbenzene	0.177	U	0.162	0.500	1	10/19/2019 20:09	WG1365855
Styrene	U		0.117	0.500	1	10/19/2019 20:09	WG1365855
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/19/2019 20:09	WG1365855
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/19/2019 20:09	WG1365855
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/19/2019 20:09	WG1365855
Tetrachloroethene	524		4.98	12.5	25	10/21/2019 15:13	WG1366289
Toluene	U		0.412	0.500	1	10/19/2019 20:09	WG1365855
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/19/2019 20:09	WG1365855
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/19/2019 20:09	WG1365855
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/19/2019 20:09	WG1365855
1,1,2-Trichloroethane	U		0.186	0.500	1	10/19/2019 20:09	WG1365855
Trichloroethene	483		3.83	12.5	25	10/21/2019 15:13	WG1366289
Trichlorofluoromethane	U		0.130	2.50	1	10/19/2019 20:09	WG1365855
1,2,3-Trichloropropane	U		0.247	2.50	1	10/19/2019 20:09	WG1365855
1,2,4-Trimethylbenzene	0.392	U	0.123	0.500	1	10/19/2019 20:09	WG1365855
1,2,3-Trimethylbenzene	0.556		0.0739	0.500	1	10/19/2019 20:09	WG1365855
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/19/2019 20:09	WG1365855
Vinyl acetate	U		0.645	5.00	1	10/19/2019 20:09	WG1365855
Vinyl chloride	194		0.118	0.500	1	10/19/2019 20:09	WG1365855
Xylenes, Total	U		0.316	1.50	1	10/19/2019 20:09	WG1365855
(S) Toluene-d8	115			80.0-120		10/19/2019 20:09	WG1365855
(S) Toluene-d8	111			80.0-120		10/21/2019 15:13	WG1366289
(S) 4-Bromofluorobenzene	107			77.0-126		10/19/2019 20:09	WG1365855
(S) 4-Bromofluorobenzene	92.6			77.0-126		10/21/2019 15:13	WG1366289

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/2/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	93.2			70.0-130		10/19/2019 20:09	WG1365855
(S) 1,2-Dichloroethane-d4	98.4			70.0-130		10/21/2019 15:13	WG1366289

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/2/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	378000		2710	20000	1	10/18/2019 00:28	WG1364209

Sample Narrative:

L1148900-07 WG1364209: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	11600		51.9	1000	1	10/11/2019 21:42	WG1361340
Nitrate	199		22.7	100	1	10/11/2019 21:42	WG1361340
Sulfate	66300		77.4	5000	1	10/11/2019 21:42	WG1361340

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	4390	B	102	1000	1	10/14/2019 04:27	WG1362294

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	2150		15.0	100	1	10/16/2019 23:05	WG1363727
Manganese	1590		2.50	50.0	10	10/17/2019 00:48	WG1363727

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	76.2		0.287	0.678	1	10/14/2019 16:28	WG1362474
Ethane	U		0.296	1.29	1	10/14/2019 16:28	WG1362474
Ethene	U		0.422	1.27	1	10/14/2019 16:28	WG1362474

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		1.05	25.0	1	10/19/2019 20:30	WG1365855
Acrylonitrile	U		0.873	5.00	1	10/19/2019 20:30	WG1365855
Benzene	U		0.0896	0.500	1	10/19/2019 20:30	WG1365855
Bromobenzene	U		0.133	0.500	1	10/19/2019 20:30	WG1365855
Bromodichloromethane	U		0.0800	0.500	1	10/19/2019 20:30	WG1365855
Bromochloromethane	U		0.145	0.500	1	10/19/2019 20:30	WG1365855
Bromoform	U		0.186	0.500	1	10/19/2019 20:30	WG1365855
Bromomethane	U		0.157	2.50	1	10/19/2019 20:30	WG1365855
n-Butylbenzene	U		0.143	0.500	1	10/19/2019 20:30	WG1365855
sec-Butylbenzene	U		0.134	0.500	1	10/19/2019 20:30	WG1365855
tert-Butylbenzene	U		0.183	0.500	1	10/19/2019 20:30	WG1365855
Carbon disulfide	U		0.101	0.500	1	10/19/2019 20:30	WG1365855
Carbon tetrachloride	U		0.159	0.500	1	10/19/2019 20:30	WG1365855
Chlorobenzene	U		0.140	0.500	1	10/19/2019 20:30	WG1365855
Chlorodibromomethane	U		0.128	0.500	1	10/19/2019 20:30	WG1365855
Chloroethane	U		0.141	2.50	1	10/19/2019 20:30	WG1365855
Chloroform	U		0.0860	0.500	1	10/19/2019 20:30	WG1365855
Chloromethane	U		0.153	1.25	1	10/19/2019 20:30	WG1365855
2-Chlorotoluene	U		0.111	0.500	1	10/19/2019 20:30	WG1365855
4-Chlorotoluene	U		0.0972	0.500	1	10/19/2019 20:30	WG1365855

JC 12/2/19

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/10/19 14:15

L1148900

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/19/2019 20:30	WG1365855
1,2-Dibromoethane	U		0.193	0.500	1	10/19/2019 20:30	WG1365855
Dibromomethane	U		0.117	0.500	1	10/19/2019 20:30	WG1365855
1,2-Dichlorobenzene	U		0.101	0.500	1	10/19/2019 20:30	WG1365855
1,3-Dichlorobenzene	U		0.130	0.500	1	10/19/2019 20:30	WG1365855
1,4-Dichlorobenzene	U		0.121	0.500	1	10/19/2019 20:30	WG1365855
Dichlorodifluoromethane	U		0.127	2.50	1	10/19/2019 20:30	WG1365855
1,1-Dichloroethane	U		0.114	0.500	1	10/19/2019 20:30	WG1365855
1,2-Dichloroethane	U		0.108	0.500	1	10/19/2019 20:30	WG1365855
1,1-Dichloroethene	U		0.188	0.500	1	10/19/2019 20:30	WG1365855
cis-1,2-Dichloroethene	7.34		0.0933	0.500	1	10/21/2019 15:33	WG1366289
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/19/2019 20:30	WG1365855
1,2-Dichloropropane	U		0.190	0.500	1	10/19/2019 20:30	WG1365855
1,1-Dichloropropene	U		0.128	0.500	1	10/19/2019 20:30	WG1365855
1,3-Dichloropropane	U		0.147	1.00	1	10/19/2019 20:30	WG1365855
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/19/2019 20:30	WG1365855
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/19/2019 20:30	WG1365855
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/19/2019 20:30	WG1365855
2,2-Dichloropropane	U		0.0929	0.500	1	10/19/2019 20:30	WG1365855
Di-isopropyl ether	U		0.0924	0.500	1	10/19/2019 20:30	WG1365855
Ethylbenzene	U		0.158	0.500	1	10/19/2019 20:30	WG1365855
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/19/2019 20:30	WG1365855
2-Hexanone	U		0.757	5.00	1	10/19/2019 20:30	WG1365855
n-Hexane	U		0.305	5.00	1	10/19/2019 20:30	WG1365855
Iodomethane	U		0.377	10.0	1	10/19/2019 20:30	WG1365855
Isopropylbenzene	U		0.126	0.500	1	10/19/2019 20:30	WG1365855
p-Isopropyltoluene	U		0.138	0.500	1	10/19/2019 20:30	WG1365855
2-Butanone (MEK)	U		1.28	5.00	1	10/19/2019 20:30	WG1365855
Methylene Chloride	U		1.07	2.50	1	10/19/2019 20:30	WG1365855
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/19/2019 20:30	WG1365855
Methyl tert-butyl ether	U		0.102	0.500	1	10/19/2019 20:30	WG1365855
Naphthalene	U	UJ JO	0.174	2.50	1	10/21/2019 15:33	WG1366289
n-Propylbenzene	U		0.162	0.500	1	10/19/2019 20:30	WG1365855
Styrene	U		0.117	0.500	1	10/19/2019 20:30	WG1365855
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/19/2019 20:30	WG1365855
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/19/2019 20:30	WG1365855
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/19/2019 20:30	WG1365855
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 15:33	WG1366289
Toluene	U		0.412	0.500	1	10/19/2019 20:30	WG1365855
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/19/2019 20:30	WG1365855
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/19/2019 20:30	WG1365855
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/19/2019 20:30	WG1365855
1,1,2-Trichloroethane	U		0.186	0.500	1	10/19/2019 20:30	WG1365855
Trichloroethene	U		0.153	0.500	1	10/21/2019 15:33	WG1366289
Trichlorofluoromethane	U		0.130	2.50	1	10/19/2019 20:30	WG1365855
1,2,3-Trichloropropane	U		0.247	2.50	1	10/19/2019 20:30	WG1365855
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/19/2019 20:30	WG1365855
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/19/2019 20:30	WG1365855
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/19/2019 20:30	WG1365855
Vinyl acetate	U		0.645	5.00	1	10/19/2019 20:30	WG1365855
Vinyl chloride	1.09		0.118	0.500	1	10/19/2019 20:30	WG1365855
Xylenes, Total	U		0.316	1.50	1	10/19/2019 20:30	WG1365855
(S) Toluene-d8	112			80.0-120		10/19/2019 20:30	WG1365855
(S) Toluene-d8	113			80.0-120		10/21/2019 15:33	WG1366289
(S) 4-Bromofluorobenzene	111			77.0-126		10/19/2019 20:30	WG1365855
(S) 4-Bromofluorobenzene	94.9			77.0-126		10/21/2019 15:33	WG1366289

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/2/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	97.1			70.0-130		10/19/2019 20:30	WG1365855
(S) 1,2-Dichloroethane-d4	97.0			70.0-130		10/21/2019 15:33	WG1366289

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/2/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	786000		2710	20000	1	10/17/2019 16:38	WG1364211

Sample Narrative:

L1148900-08 WG1364211: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	10700		51.9	1000	1	10/11/2019 22:00	WG1361340
Nitrate	U		22.7	100	1	10/11/2019 22:00	WG1361340
Sulfate	88000		77.4	5000	1	10/11/2019 22:00	WG1361340

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	8930		102	1000	1	10/14/2019 04:49	WG1362294

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	11200		300	2000	20	10/17/2019 00:37	WG1363727
Manganese	3010		5.00	100	20	10/17/2019 00:37	WG1363727

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	558		0.287	0.678	1	10/14/2019 16:32	WG1362474
Ethane	U		0.296	1.29	1	10/14/2019 16:32	WG1362474
Ethene	U		0.422	1.27	1	10/14/2019 16:32	WG1362474

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.91	J	1.05	25.0	1	10/19/2019 20:50	WG1365855
Acrylonitrile	U		0.873	5.00	1	10/19/2019 20:50	WG1365855
Benzene	U		0.0896	0.500	1	10/19/2019 20:50	WG1365855
Bromobenzene	U		0.133	0.500	1	10/19/2019 20:50	WG1365855
Bromodichloromethane	U		0.0800	0.500	1	10/19/2019 20:50	WG1365855
Bromochloromethane	U		0.145	0.500	1	10/19/2019 20:50	WG1365855
Bromoform	U		0.186	0.500	1	10/19/2019 20:50	WG1365855
Bromomethane	U		0.157	2.50	1	10/19/2019 20:50	WG1365855
n-Butylbenzene	U		0.143	0.500	1	10/19/2019 20:50	WG1365855
sec-Butylbenzene	U		0.134	0.500	1	10/19/2019 20:50	WG1365855
tert-Butylbenzene	U		0.183	0.500	1	10/19/2019 20:50	WG1365855
Carbon disulfide	U		0.101	0.500	1	10/19/2019 20:50	WG1365855
Carbon tetrachloride	U		0.159	0.500	1	10/19/2019 20:50	WG1365855
Chlorobenzene	U		0.140	0.500	1	10/19/2019 20:50	WG1365855
Chlorodibromomethane	U		0.128	0.500	1	10/19/2019 20:50	WG1365855
Chloroethane	U		0.141	2.50	1	10/19/2019 20:50	WG1365855
Chloroform	U		0.0860	0.500	1	10/19/2019 20:50	WG1365855
Chloromethane	U		0.153	1.25	1	10/19/2019 20:50	WG1365855
2-Chlorotoluene	U		0.111	0.500	1	10/19/2019 20:50	WG1365855
4-Chlorotoluene	U		0.0972	0.500	1	10/19/2019 20:50	WG1365855

JC 12/2/19

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/19/2019 20:50	WG1365855
1,2-Dibromoethane	U		0.193	0.500	1	10/19/2019 20:50	WG1365855
Dibromomethane	U		0.117	0.500	1	10/19/2019 20:50	WG1365855
1,2-Dichlorobenzene	U		0.101	0.500	1	10/19/2019 20:50	WG1365855
1,3-Dichlorobenzene	U		0.130	0.500	1	10/19/2019 20:50	WG1365855
1,4-Dichlorobenzene	U		0.121	0.500	1	10/19/2019 20:50	WG1365855
Dichlorodifluoromethane	U		0.127	2.50	1	10/19/2019 20:50	WG1365855
1,1-Dichloroethane	U		0.114	0.500	1	10/19/2019 20:50	WG1365855
1,2-Dichloroethane	U		0.108	0.500	1	10/19/2019 20:50	WG1365855
1,1-Dichloroethene	U		0.188	0.500	1	10/19/2019 20:50	WG1365855
cis-1,2-Dichloroethene	0.148	U	0.0933	0.500	1	10/21/2019 16:18	WG1366289
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/19/2019 20:50	WG1365855
1,2-Dichloropropane	U		0.190	0.500	1	10/19/2019 20:50	WG1365855
1,1-Dichloropropene	U		0.128	0.500	1	10/19/2019 20:50	WG1365855
1,3-Dichloropropane	U		0.147	1.00	1	10/19/2019 20:50	WG1365855
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/19/2019 20:50	WG1365855
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/19/2019 20:50	WG1365855
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/19/2019 20:50	WG1365855
2,2-Dichloropropane	U		0.0929	0.500	1	10/19/2019 20:50	WG1365855
Di-isopropyl ether	U		0.0924	0.500	1	10/19/2019 20:50	WG1365855
Ethylbenzene	U		0.158	0.500	1	10/19/2019 20:50	WG1365855
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/19/2019 20:50	WG1365855
2-Hexanone	U		0.757	5.00	1	10/19/2019 20:50	WG1365855
n-Hexane	U		0.305	5.00	1	10/19/2019 20:50	WG1365855
Iodomethane	U		0.377	10.0	1	10/19/2019 20:50	WG1365855
Isopropylbenzene	0.352	U	0.126	0.500	1	10/19/2019 20:50	WG1365855
p-Isopropyltoluene	U		0.138	0.500	1	10/19/2019 20:50	WG1365855
2-Butanone (MEK)	U		1.28	5.00	1	10/19/2019 20:50	WG1365855
Methylene Chloride	U		1.07	2.50	1	10/19/2019 20:50	WG1365855
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/19/2019 20:50	WG1365855
Methyl tert-butyl ether	U		0.102	0.500	1	10/19/2019 20:50	WG1365855
Naphthalene	U		0.174	2.50	1	10/21/2019 16:18	WG1366289
n-Propylbenzene	U		0.162	0.500	1	10/19/2019 20:50	WG1365855
Styrene	U		0.117	0.500	1	10/19/2019 20:50	WG1365855
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/19/2019 20:50	WG1365855
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/19/2019 20:50	WG1365855
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/19/2019 20:50	WG1365855
Tetrachloroethene	U		0.199	0.500	1	10/19/2019 20:50	WG1365855
Toluene	U		0.412	0.500	1	10/19/2019 20:50	WG1365855
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/19/2019 20:50	WG1365855
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/19/2019 20:50	WG1365855
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/19/2019 20:50	WG1365855
1,1,2-Trichloroethane	U		0.186	0.500	1	10/19/2019 20:50	WG1365855
Trichloroethene	U		0.153	0.500	1	10/21/2019 16:18	WG1366289
Trichlorofluoromethane	U		0.130	2.50	1	10/19/2019 20:50	WG1365855
1,2,3-Trichloropropane	U		0.247	2.50	1	10/19/2019 20:50	WG1365855
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/19/2019 20:50	WG1365855
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/19/2019 20:50	WG1365855
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/19/2019 20:50	WG1365855
Vinyl acetate	U		0.645	5.00	1	10/19/2019 20:50	WG1365855
Vinyl chloride	U		0.118	0.500	1	10/19/2019 20:50	WG1365855
Xylenes, Total	U		0.316	1.50	1	10/19/2019 20:50	WG1365855
(S) Toluene-d8	111			80.0-120		10/19/2019 20:50	WG1365855
(S) Toluene-d8	112			80.0-120		10/21/2019 16:18	WG1366289
(S) 4-Bromofluorobenzene	111			77.0-126		10/19/2019 20:50	WG1365855
(S) 4-Bromofluorobenzene	93.8			77.0-126		10/21/2019 16:18	WG1366289

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/2/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	96.6			70.0-130		10/19/2019 20:50	WG1365855
(S) 1,2-Dichloroethane-d4	94.3			70.0-130		10/21/2019 16:18	WG1366289

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/2/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	226000		2710	20000	1	10/17/2019 16:44	WG1364211

Sample Narrative:

L1148900-09 WG1364211: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	18600		51.9	1000	1	10/11/2019 22:18	WG1361340
Nitrate	U		22.7	100	1	10/11/2019 22:18	WG1361340
Sulfate	26400		77.4	5000	1	10/11/2019 22:18	WG1361340

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	4980	<u>B</u>	102	1000	1	10/14/2019 05:09	WG1362294

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	10700		300	2000	20	10/17/2019 00:40	WG1363727
Manganese	2630		5.00	100	20	10/17/2019 00:40	WG1363727

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	289		0.287	0.678	1	10/14/2019 16:35	WG1362474
Ethane	U		0.296	1.29	1	10/14/2019 16:35	WG1362474
Ethene	U		0.422	1.27	1	10/14/2019 16:35	WG1362474

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.20	<u>J</u>	1.05	25.0	1	10/19/2019 21:10	WG1365855
Acrylonitrile	U		0.873	5.00	1	10/19/2019 21:10	WG1365855
Benzene	U		0.0896	0.500	1	10/19/2019 21:10	WG1365855
Bromobenzene	U		0.133	0.500	1	10/19/2019 21:10	WG1365855
Bromodichloromethane	U		0.0800	0.500	1	10/19/2019 21:10	WG1365855
Bromochloromethane	U		0.145	0.500	1	10/19/2019 21:10	WG1365855
Bromoform	U		0.186	0.500	1	10/19/2019 21:10	WG1365855
Bromomethane	U		0.157	2.50	1	10/19/2019 21:10	WG1365855
n-Butylbenzene	U		0.143	0.500	1	10/19/2019 21:10	WG1365855
sec-Butylbenzene	U		0.134	0.500	1	10/19/2019 21:10	WG1365855
tert-Butylbenzene	U		0.183	0.500	1	10/19/2019 21:10	WG1365855
Carbon disulfide	U		0.101	0.500	1	10/19/2019 21:10	WG1365855
Carbon tetrachloride	U		0.159	0.500	1	10/19/2019 21:10	WG1365855
Chlorobenzene	U		0.140	0.500	1	10/19/2019 21:10	WG1365855
Chlorodibromomethane	U		0.128	0.500	1	10/19/2019 21:10	WG1365855
Chloroethane	U		0.141	2.50	1	10/19/2019 21:10	WG1365855
Chloroform	U		0.0860	0.500	1	10/19/2019 21:10	WG1365855
Chloromethane	U		0.153	1.25	1	10/19/2019 21:10	WG1365855
2-Chlorotoluene	U		0.111	0.500	1	10/19/2019 21:10	WG1365855
4-Chlorotoluene	U		0.0972	0.500	1	10/19/2019 21:10	WG1365855

JC 12/2/19

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/19/2019 21:10	WG1365855
1,2-Dibromoethane	U		0.193	0.500	1	10/19/2019 21:10	WG1365855
Dibromomethane	U		0.117	0.500	1	10/19/2019 21:10	WG1365855
1,2-Dichlorobenzene	U		0.101	0.500	1	10/19/2019 21:10	WG1365855
1,3-Dichlorobenzene	U		0.130	0.500	1	10/19/2019 21:10	WG1365855
1,4-Dichlorobenzene	U		0.121	0.500	1	10/19/2019 21:10	WG1365855
Dichlorodifluoromethane	U		0.127	2.50	1	10/19/2019 21:10	WG1365855
1,1-Dichloroethane	U		0.114	0.500	1	10/19/2019 21:10	WG1365855
1,2-Dichloroethane	U		0.108	0.500	1	10/19/2019 21:10	WG1365855
1,1-Dichloroethene	U		0.188	0.500	1	10/19/2019 21:10	WG1365855
cis-1,2-Dichloroethene	12.6		0.0933	0.500	1	10/19/2019 21:10	WG1365855
trans-1,2-Dichloroethene	0.159	U	0.152	0.500	1	10/19/2019 21:10	WG1365855
1,2-Dichloropropane	U		0.190	0.500	1	10/19/2019 21:10	WG1365855
1,1-Dichloropropene	U		0.128	0.500	1	10/19/2019 21:10	WG1365855
1,3-Dichloropropane	U		0.147	1.00	1	10/19/2019 21:10	WG1365855
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/19/2019 21:10	WG1365855
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/19/2019 21:10	WG1365855
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/19/2019 21:10	WG1365855
2,2-Dichloropropane	U		0.0929	0.500	1	10/19/2019 21:10	WG1365855
Di-isopropyl ether	U		0.0924	0.500	1	10/19/2019 21:10	WG1365855
Ethylbenzene	U		0.158	0.500	1	10/19/2019 21:10	WG1365855
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/19/2019 21:10	WG1365855
2-Hexanone	U		0.757	5.00	1	10/19/2019 21:10	WG1365855
n-Hexane	U		0.305	5.00	1	10/19/2019 21:10	WG1365855
Iodomethane	U		0.377	10.0	1	10/19/2019 21:10	WG1365855
Isopropylbenzene	U		0.126	0.500	1	10/19/2019 21:10	WG1365855
p-Isopropyltoluene	U		0.138	0.500	1	10/19/2019 21:10	WG1365855
2-Butanone (MEK)	U		1.28	5.00	1	10/19/2019 21:10	WG1365855
Methylene Chloride	U		1.07	2.50	1	10/19/2019 21:10	WG1365855
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/19/2019 21:10	WG1365855
Methyl tert-butyl ether	U		0.102	0.500	1	10/19/2019 21:10	WG1365855
Naphthalene	U		0.174	2.50	1	10/19/2019 21:10	WG1365855
n-Propylbenzene	U		0.162	0.500	1	10/19/2019 21:10	WG1365855
Styrene	U		0.117	0.500	1	10/19/2019 21:10	WG1365855
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/19/2019 21:10	WG1365855
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/19/2019 21:10	WG1365855
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/19/2019 21:10	WG1365855
Tetrachloroethene	0.876		0.199	0.500	1	10/19/2019 21:10	WG1365855
Toluene	U		0.412	0.500	1	10/19/2019 21:10	WG1365855
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/19/2019 21:10	WG1365855
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/19/2019 21:10	WG1365855
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/19/2019 21:10	WG1365855
1,1,2-Trichloroethane	U		0.186	0.500	1	10/19/2019 21:10	WG1365855
Trichloroethene	7.54		0.153	0.500	1	10/19/2019 21:10	WG1365855
Trichlorofluoromethane	U		0.130	2.50	1	10/19/2019 21:10	WG1365855
1,2,3-Trichloropropane	U		0.247	2.50	1	10/19/2019 21:10	WG1365855
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/19/2019 21:10	WG1365855
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/19/2019 21:10	WG1365855
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/19/2019 21:10	WG1365855
Vinyl acetate	U		0.645	5.00	1	10/19/2019 21:10	WG1365855
Vinyl chloride	U		0.118	0.500	1	10/19/2019 21:10	WG1365855
Xylenes, Total	U		0.316	1.50	1	10/19/2019 21:10	WG1365855
(S) Toluene-d8	115			80.0-120		10/19/2019 21:10	WG1365855
(S) 4-Bromofluorobenzene	112			77.0-126		10/19/2019 21:10	WG1365855
(S) 1,2-Dichloroethane-d4	98.4			70.0-130		10/19/2019 21:10	WG1365855

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/2/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	828000		6780	50000	2.5	10/19/2019 16:55	WG1365100

Sample Narrative:

L1149387-01 WG1365100: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	21400		51.9	1000	1	10/12/2019 19:01	WG1361957
Nitrate	U		22.7	100	1	10/12/2019 19:01	WG1361957
Sulfate	14000	J	77.4	5000	1	10/12/2019 19:01	WG1361957

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	4420		102	1000	1	10/16/2019 19:57	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	8740		15.0	100	1	10/18/2019 13:17	WG1364591
Manganese	218		0.250	5.00	1	10/18/2019 13:17	WG1364591

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	10100		2.87	6.78	10	10/16/2019 11:54	WG1363432
Ethane	U	UJ	2.96	12.9	10	10/16/2019 11:54	WG1363432
Ethene	U	UJ	4.22	12.7	10	10/16/2019 11:54	WG1363432

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
	ug/l		ug/l	ug/l		date / time		
Acetone	U	UJ	JO	1.05	25.0	1	10/21/2019 08:47	WG1366365
Acrylonitrile	U	UJ	JO	0.873	5.00	1	10/21/2019 08:47	WG1366365
Benzene	1.34		0.0896	0.500	1	10/21/2019 08:47	WG1366365	
Bromobenzene	U		0.133	0.500	1	10/21/2019 08:47	WG1366365	
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 08:47	WG1366365	
Bromochloromethane	U		0.145	0.500	1	10/21/2019 08:47	WG1366365	
Bromoform	U		0.186	0.500	1	10/21/2019 08:47	WG1366365	
Bromomethane	U	UJ	JO	0.157	2.50	1	10/21/2019 08:47	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 08:47	WG1366365	
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 08:47	WG1366365	
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 08:47	WG1366365	
Carbon disulfide	U		0.101	0.500	1	10/21/2019 08:47	WG1366365	
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 08:47	WG1366365	
Chlorobenzene	U		0.140	0.500	1	10/21/2019 08:47	WG1366365	
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 08:47	WG1366365	
Chloroethane	U		0.141	2.50	1	10/21/2019 08:47	WG1366365	
Chloroform	U		0.0860	0.500	1	10/21/2019 08:47	WG1366365	
Chloromethane	U		0.153	1.25	1	10/21/2019 08:47	WG1366365	
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 08:47	WG1366365	
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 08:47	WG1366365	

JC 12/2/19

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 08:47	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 08:47	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 08:47	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 08:47	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 08:47	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 08:47	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 08:47	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 08:47	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 08:47	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 08:47	WG1366365
cis-1,2-Dichloroethene	0.841		0.0933	0.500	1	10/21/2019 08:47	WG1366365
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 08:47	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 08:47	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 08:47	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 08:47	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 08:47	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 08:47	WG1366365
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/21/2019 08:47	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 08:47	WG1366365
Di-isopropyl ether	0.137	J	0.0924	0.500	1	10/21/2019 08:47	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 08:47	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 08:47	WG1366365
2-Hexanone	U	UJ JO	0.757	5.00	1	10/21/2019 08:47	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 08:47	WG1366365
Iodomethane	U	UJ JO	0.377	10.0	1	10/21/2019 08:47	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 08:47	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 08:47	WG1366365
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	10/21/2019 08:47	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 08:47	WG1366365
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/21/2019 08:47	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 08:47	WG1366365
Naphthalene	U	UJ JO	0.174	2.50	1	10/21/2019 08:47	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 08:47	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 08:47	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 08:47	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 08:47	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 08:47	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 08:47	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 08:47	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 08:47	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 08:47	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 08:47	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 08:47	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 08:47	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 08:47	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 08:47	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 08:47	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 08:47	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 08:47	WG1366365
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/21/2019 08:47	WG1366365
Vinyl chloride	24.1	J	0.118	0.500	1	10/21/2019 08:47	WG1366365
Xylenes, Total	U		0.316	1.50	1	10/21/2019 08:47	WG1366365
(S) Toluene-d8	95.6			80.0-120		10/21/2019 08:47	WG1366365
(S) 4-Bromofluorobenzene	88.4			77.0-126		10/21/2019 08:47	WG1366365
(S) 1,2-Dichloroethane-d4	83.8			70.0-130		10/21/2019 08:47	WG1366365

- 1 Cp
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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U	UJ JO	1.05	25.0	1	10/21/2019 09:06	WG1366365
Acrylonitrile	U	UJ JO	0.873	5.00	1	10/21/2019 09:06	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 09:06	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 09:06	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 09:06	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 09:06	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 09:06	WG1366365
Bromomethane	U	UJ JO	0.157	2.50	1	10/21/2019 09:06	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 09:06	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 09:06	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 09:06	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 09:06	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 09:06	WG1366365
Chlorobenzene	U		0.140	0.500	1	10/21/2019 09:06	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 09:06	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 09:06	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 09:06	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 09:06	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 09:06	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 09:06	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 09:06	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 09:06	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 09:06	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 09:06	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 09:06	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 09:06	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 09:06	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 09:06	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 09:06	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 09:06	WG1366365
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/21/2019 09:06	WG1366365
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 09:06	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 09:06	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 09:06	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 09:06	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 09:06	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 09:06	WG1366365
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/21/2019 09:06	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 09:06	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 09:06	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 09:06	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 09:06	WG1366365
2-Hexanone	U	UJ JO	0.757	5.00	1	10/21/2019 09:06	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 09:06	WG1366365
Iodomethane	U	UJ JO	0.377	10.0	1	10/21/2019 09:06	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 09:06	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 09:06	WG1366365
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	10/21/2019 09:06	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 09:06	WG1366365
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/21/2019 09:06	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 09:06	WG1366365
Naphthalene	U	UJ JO	0.174	2.50	1	10/21/2019 09:06	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 09:06	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 09:06	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 09:06	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 09:06	WG1366365

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/2/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 09:06	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 09:06	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 09:06	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 09:06	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 09:06	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 09:06	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 09:06	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 09:06	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 09:06	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 09:06	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 09:06	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 09:06	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 09:06	WG1366365
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/21/2019 09:06	WG1366365
Vinyl chloride	U		0.118	0.500	1	10/21/2019 09:06	WG1366365
Xylenes, Total	U		0.316	1.50	1	10/21/2019 09:06	WG1366365
(S) Toluene-d8	98.3			80.0-120		10/21/2019 09:06	WG1366365
(S) 4-Bromofluorobenzene	91.1			77.0-126		10/21/2019 09:06	WG1366365
(S) 1,2-Dichloroethane-d4	82.2			70.0-130		10/21/2019 09:06	WG1366365

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/2/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	746000		6780	50000	2.5	10/19/2019 17:05	WG1365100

Sample Narrative:

L1149387-03 WG1365100: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	22600		51.9	1000	1	10/12/2019 19:18	WG1361957
Nitrate	U		22.7	100	1	10/12/2019 19:18	WG1361957
Sulfate	20900	J	77.4	5000	1	10/12/2019 19:18	WG1361957

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	4200		102	1000	1	10/16/2019 20:15	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	7950		15.0	100	1	10/18/2019 13:20	WG1364591
Manganese	207		0.250	5.00	1	10/18/2019 13:20	WG1364591

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	13100		2.87	6.78	10	10/16/2019 14:53	WG1363429
Ethane	8.49	J	0.296	1.29	1	10/16/2019 12:05	WG1363432
Ethene	23.5	J	0.422	1.27	1	10/16/2019 12:05	WG1363432

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U	UJ JO	1.05	25.0	1	10/21/2019 09:26	WG1366365
Acrylonitrile	U	UJ JO	0.873	5.00	1	10/21/2019 09:26	WG1366365
Benzene	0.984		0.0896	0.500	1	10/21/2019 09:26	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 09:26	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 09:26	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 09:26	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 09:26	WG1366365
Bromomethane	U	UJ JO	0.157	2.50	1	10/21/2019 09:26	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 09:26	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 09:26	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 09:26	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 09:26	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 09:26	WG1366365
Chlorobenzene	U		0.140	0.500	1	10/21/2019 09:26	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 09:26	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 09:26	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 09:26	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 09:26	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 09:26	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 09:26	WG1366365

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1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 09:26	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 09:26	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 09:26	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 09:26	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 09:26	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 09:26	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 09:26	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 09:26	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 09:26	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 09:26	WG1366365
cis-1,2-Dichloroethene	0.619		0.0933	0.500	1	10/21/2019 09:26	WG1366365
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 09:26	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 09:26	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 09:26	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 09:26	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 09:26	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 09:26	WG1366365
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/21/2019 09:26	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 09:26	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 09:26	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 09:26	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 09:26	WG1366365
2-Hexanone	U	UJ JO	0.757	5.00	1	10/21/2019 09:26	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 09:26	WG1366365
Iodomethane	U	UJ JO	0.377	10.0	1	10/21/2019 09:26	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 09:26	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 09:26	WG1366365
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	10/21/2019 09:26	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 09:26	WG1366365
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/21/2019 09:26	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 09:26	WG1366365
Naphthalene	U	UJ JO	0.174	2.50	1	10/21/2019 09:26	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 09:26	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 09:26	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 09:26	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 09:26	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 09:26	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 09:26	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 09:26	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 09:26	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 09:26	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 09:26	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 09:26	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 09:26	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 09:26	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 09:26	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 09:26	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 09:26	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 09:26	WG1366365
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/21/2019 09:26	WG1366365
Vinyl chloride	13.3	J	0.118	0.500	1	10/21/2019 09:26	WG1366365
Xylenes, Total	U		0.316	1.50	1	10/21/2019 09:26	WG1366365
(S) Toluene-d8	95.1			80.0-120		10/21/2019 09:26	WG1366365
(S) 4-Bromofluorobenzene	90.7			77.0-126		10/21/2019 09:26	WG1366365
(S) 1,2-Dichloroethane-d4	81.2			70.0-130		10/21/2019 09:26	WG1366365

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/2/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	152000		2710	20000	1	10/19/2019 17:13	WG1365100

Sample Narrative:

L1149387-04 WG1365100: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	6260		51.9	1000	1	10/12/2019 19:34	WG1361957
Nitrate	U		22.7	100	1	10/12/2019 19:34	WG1361957
Sulfate	5920	<u>B</u>	77.4	5000	1	10/12/2019 19:34	WG1361957

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3780	<u>B</u>	102	1000	1	10/16/2019 20:32	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	2240		15.0	100	1	10/18/2019 13:24	WG1364591
Manganese	301		0.250	5.00	1	10/18/2019 13:24	WG1364591

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/16/2019 16:01	WG1363461
(S) a,a,a-Trifluorotoluene(FID)	108			78.0-120		10/16/2019 16:01	WG1363461

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	12.3	<u>U</u>	0.287	0.678	1	10/16/2019 13:29	WG1363432
Ethane	U		0.296	1.29	1	10/16/2019 13:29	WG1363432
Ethene	U		0.422	1.27	1	10/16/2019 13:29	WG1363432

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	9.24	<u>J</u> <u>JO</u>	1.05	25.0	1	10/21/2019 09:46	WG1366365
Acrylonitrile	U	<u>UJ</u> <u>JO</u>	0.873	5.00	1	10/21/2019 09:46	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 09:46	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 09:46	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 09:46	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 09:46	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 09:46	WG1366365
Bromomethane	U	<u>UJ</u> <u>JO</u>	0.157	2.50	1	10/21/2019 09:46	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 09:46	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 09:46	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 09:46	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 09:46	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 09:46	WG1366365

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1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/21/2019 09:46	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 09:46	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 09:46	WG1366365
Chloroform	1.06		0.0860	0.500	1	10/21/2019 09:46	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 09:46	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 09:46	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 09:46	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 09:46	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 09:46	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 09:46	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 09:46	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 09:46	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 09:46	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 09:46	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 09:46	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 09:46	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 09:46	WG1366365
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/21/2019 09:46	WG1366365
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 09:46	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 09:46	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 09:46	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 09:46	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 09:46	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 09:46	WG1366365
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/21/2019 09:46	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 09:46	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 09:46	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 09:46	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 09:46	WG1366365
2-Hexanone	U	UJ JO	0.757	5.00	1	10/21/2019 09:46	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 09:46	WG1366365
Iodomethane	U	UJ JO	0.377	10.0	1	10/21/2019 09:46	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 09:46	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 09:46	WG1366365
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	10/21/2019 09:46	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 09:46	WG1366365
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/21/2019 09:46	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 09:46	WG1366365
Naphthalene	U	UJ JO	0.174	2.50	1	10/21/2019 09:46	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 09:46	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 09:46	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 09:46	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 09:46	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 09:46	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 09:46	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 09:46	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 09:46	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 09:46	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 09:46	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 09:46	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 09:46	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 09:46	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 09:46	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 09:46	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 09:46	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 09:46	WG1366365

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

IC 12/2/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	UJ	0.645	5.00	1	10/21/2019 09:46	WG1366365
Vinyl chloride	U		0.118	0.500	1	10/21/2019 09:46	WG1366365
Xylenes, Total	U		0.316	1.50	1	10/21/2019 09:46	WG1366365
(S) Toluene-d8	97.9			80.0-120		10/21/2019 09:46	WG1366365
(S) 4-Bromofluorobenzene	91.6			77.0-126		10/21/2019 09:46	WG1366365
(S) 1,2-Dichloroethane-d4	84.9			70.0-130		10/21/2019 09:46	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/2/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	276000		2710	20000	1	10/19/2019 17:21	WG1365100

Sample Narrative:

L1149387-05 WG1365100: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	14600		51.9	1000	1	10/12/2019 19:51	WG1361957
Nitrate	U		22.7	100	1	10/12/2019 19:51	WG1361957
Sulfate	69100		77.4	5000	1	10/12/2019 19:51	WG1361957

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	4120	B	102	1000	1	10/16/2019 20:50	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	1030		15.0	100	1	10/18/2019 13:27	WG1364591
Manganese	149		0.250	5.00	1	10/18/2019 13:27	WG1364591

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/16/2019 16:25	WG1363461
(S) a,a,a-Trifluorotoluene(FID)	108			78.0-120		10/16/2019 16:25	WG1363461

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	26.6	J+	0.287	0.678	1	10/16/2019 13:00	WG1363432
Ethane	13.0		0.296	1.29	1	10/16/2019 13:00	WG1363432
Ethene	7.90		0.422	1.27	1	10/16/2019 13:00	WG1363432

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	1.17	J JO	1.05	25.0	1	10/21/2019 10:05	WG1366365
Acrylonitrile	U	UJ JO	0.873	5.00	1	10/21/2019 10:05	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 10:05	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 10:05	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 10:05	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 10:05	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 10:05	WG1366365
Bromomethane	U	UJ JO	0.157	2.50	1	10/21/2019 10:05	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 10:05	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 10:05	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 10:05	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 10:05	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 10:05	WG1366365

JC 12/2/19

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/21/2019 10:05	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 10:05	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 10:05	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 10:05	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 10:05	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 10:05	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 10:05	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 10:05	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 10:05	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 10:05	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 10:05	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 10:05	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 10:05	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 10:05	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 10:05	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 10:05	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 10:05	WG1366365
cis-1,2-Dichloroethene	0.935		0.0933	0.500	1	10/21/2019 10:05	WG1366365
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 10:05	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 10:05	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 10:05	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 10:05	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 10:05	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 10:05	WG1366365
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/21/2019 10:05	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 10:05	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 10:05	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 10:05	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 10:05	WG1366365
2-Hexanone	U	UJ JO	0.757	5.00	1	10/21/2019 10:05	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 10:05	WG1366365
Iodomethane	U	UJ JO	0.377	10.0	1	10/21/2019 10:05	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 10:05	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 10:05	WG1366365
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	10/21/2019 10:05	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 10:05	WG1366365
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/21/2019 10:05	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 10:05	WG1366365
Naphthalene	U	UJ JO	0.174	2.50	1	10/21/2019 10:05	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 10:05	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 10:05	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 10:05	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 10:05	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 10:05	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 10:05	WG1366365
Toluene	1.05		0.412	0.500	1	10/21/2019 10:05	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 10:05	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 10:05	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 10:05	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 10:05	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 10:05	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 10:05	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 10:05	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 10:05	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 10:05	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 10:05	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/2/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/21/2019 10:05	WG1366365
Vinyl chloride	0.289	J	0.118	0.500	1	10/21/2019 10:05	WG1366365
Xylenes, Total	U		0.316	1.50	1	10/21/2019 10:05	WG1366365
(S) Toluene-d8	96.6			80.0-120		10/21/2019 10:05	WG1366365
(S) 4-Bromofluorobenzene	89.9			77.0-126		10/21/2019 10:05	WG1366365
(S) 1,2-Dichloroethane-d4	83.1			70.0-130		10/21/2019 10:05	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U	UJ JO	1.05	25.0	1	10/21/2019 10:25	WG1366365
Acrylonitrile	U	UJ JO	0.873	5.00	1	10/21/2019 10:25	WG1366365
Benzene	1.95		0.0896	0.500	1	10/21/2019 10:25	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 10:25	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 10:25	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 10:25	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 10:25	WG1366365
Bromomethane	U	UJ JO	0.157	2.50	1	10/21/2019 10:25	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 10:25	WG1366365
sec-Butylbenzene	0.384	J	0.134	0.500	1	10/21/2019 10:25	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 10:25	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 10:25	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 10:25	WG1366365
Chlorobenzene	U		0.140	0.500	1	10/21/2019 10:25	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 10:25	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 10:25	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 10:25	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 10:25	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 10:25	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 10:25	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 10:25	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 10:25	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 10:25	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 10:25	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 10:25	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 10:25	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 10:25	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 10:25	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 10:25	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 10:25	WG1366365
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/21/2019 10:25	WG1366365
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 10:25	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 10:25	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 10:25	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 10:25	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 10:25	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 10:25	WG1366365
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/21/2019 10:25	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 10:25	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 10:25	WG1366365
Ethylbenzene	0.355	J	0.158	0.500	1	10/21/2019 10:25	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 10:25	WG1366365
2-Hexanone	U	UJ JO	0.757	5.00	1	10/21/2019 10:25	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 10:25	WG1366365
Iodomethane	U	UJ JO	0.377	10.0	1	10/21/2019 10:25	WG1366365
Isopropylbenzene	1.11		0.126	0.500	1	10/21/2019 10:25	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 10:25	WG1366365
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	10/21/2019 10:25	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 10:25	WG1366365
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/21/2019 10:25	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 10:25	WG1366365
Naphthalene	4.32	J JO	0.174	2.50	1	10/21/2019 10:25	WG1366365
n-Propylbenzene	0.521		0.162	0.500	1	10/21/2019 10:25	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 10:25	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 10:25	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 10:25	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 10:25	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 10:25	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 10:25	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 10:25	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 10:25	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 10:25	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 10:25	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 10:25	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 10:25	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 10:25	WG1366365
1,2,4-Trimethylbenzene	0.174	J	0.123	0.500	1	10/21/2019 10:25	WG1366365
1,2,3-Trimethylbenzene	2.69		0.0739	0.500	1	10/21/2019 10:25	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 10:25	WG1366365
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/21/2019 10:25	WG1366365
Vinyl chloride	U		0.118	0.500	1	10/21/2019 10:25	WG1366365
Xylenes, Total	U		0.316	1.50	1	10/21/2019 10:25	WG1366365
(S) Toluene-d8	94.1			80.0-120		10/21/2019 10:25	WG1366365
(S) 4-Bromofluorobenzene	91.6			77.0-126		10/21/2019 10:25	WG1366365
(S) 1,2-Dichloroethane-d4	84.4			70.0-130		10/21/2019 10:25	WG1366365

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/2/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	1220000		6780	50000	2.5	10/19/2019 17:30	WG1365100

Sample Narrative:

L1149387-07 WG1365100: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	10900		51.9	1000	1	10/12/2019 20:07	WG1361957
Nitrate	U		22.7	100	1	10/12/2019 20:07	WG1361957
Sulfate	5710	B	77.4	5000	1	10/12/2019 20:07	WG1361957

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	14700		102	1000	1	10/16/2019 21:13	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	5180		15.0	100	1	10/18/2019 13:30	WG1364591
Manganese	845		0.250	5.00	1	10/18/2019 13:30	WG1364591

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	768		0.287	0.678	1	10/16/2019 13:02	WG1363432
Ethane	U		0.296	1.29	1	10/16/2019 13:02	WG1363432
Ethene	U		0.422	1.27	1	10/16/2019 13:02	WG1363432

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
	ug/l		ug/l	ug/l		date / time		
Acetone	1.53	J	J JO	1.05	25.0	1	10/21/2019 10:45	WG1366365
Acrylonitrile	U	UJ	JO	0.873	5.00	1	10/21/2019 10:45	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 10:45	WG1366365	
Bromobenzene	U		0.133	0.500	1	10/21/2019 10:45	WG1366365	
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 10:45	WG1366365	
Bromochloromethane	U		0.145	0.500	1	10/21/2019 10:45	WG1366365	
Bromoform	U		0.186	0.500	1	10/21/2019 10:45	WG1366365	
Bromomethane	U	UJ	JO	0.157	2.50	1	10/21/2019 10:45	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 10:45	WG1366365	
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 10:45	WG1366365	
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 10:45	WG1366365	
Carbon disulfide	U		0.101	0.500	1	10/21/2019 10:45	WG1366365	
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 10:45	WG1366365	
Chlorobenzene	U		0.140	0.500	1	10/21/2019 10:45	WG1366365	
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 10:45	WG1366365	
Chloroethane	U		0.141	2.50	1	10/21/2019 10:45	WG1366365	
Chloroform	U		0.0860	0.500	1	10/21/2019 10:45	WG1366365	
Chloromethane	U		0.153	1.25	1	10/21/2019 10:45	WG1366365	
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 10:45	WG1366365	
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 10:45	WG1366365	

JC 12/2/19

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 10:45	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 10:45	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 10:45	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 10:45	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 10:45	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 10:45	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 10:45	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 10:45	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 10:45	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 10:45	WG1366365
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/21/2019 10:45	WG1366365
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 10:45	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 10:45	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 10:45	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 10:45	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 10:45	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 10:45	WG1366365
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/21/2019 10:45	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 10:45	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 10:45	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 10:45	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 10:45	WG1366365
2-Hexanone	U	UJ JO	0.757	5.00	1	10/21/2019 10:45	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 10:45	WG1366365
Iodomethane	U	UJ JO	0.377	10.0	1	10/21/2019 10:45	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 10:45	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 10:45	WG1366365
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	10/21/2019 10:45	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 10:45	WG1366365
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/21/2019 10:45	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 10:45	WG1366365
Naphthalene	U	UJ JO	0.174	2.50	1	10/21/2019 10:45	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 10:45	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 10:45	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 10:45	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 10:45	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 10:45	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 10:45	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 10:45	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 10:45	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 10:45	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 10:45	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 10:45	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 10:45	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 10:45	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 10:45	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 10:45	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 10:45	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 10:45	WG1366365
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/21/2019 10:45	WG1366365
Vinyl chloride	U		0.118	0.500	1	10/21/2019 10:45	WG1366365
Xylenes, Total	U		0.316	1.50	1	10/21/2019 10:45	WG1366365
(S) Toluene-d8	98.6			80.0-120		10/21/2019 10:45	WG1366365
(S) 4-Bromofluorobenzene	94.4			77.0-126		10/21/2019 10:45	WG1366365
(S) 1,2-Dichloroethane-d4	86.6			70.0-130		10/21/2019 10:45	WG1366365

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

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Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	901000		6780	50000	2.5	10/19/2019 17:37	WG1365100

Sample Narrative:

L1149387-08 WG1365100: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	15400		51.9	1000	1	10/12/2019 20:23	WG1361957
Nitrate	U		22.7	100	1	10/12/2019 20:23	WG1361957
Sulfate	95400		77.4	5000	1	10/12/2019 20:23	WG1361957

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	6970		102	1000	1	10/16/2019 21:34	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	16900		15.0	100	1	10/18/2019 13:34	WG1364591
Manganese	2950		0.250	5.00	1	10/18/2019 13:34	WG1364591

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	2070		0.287	0.678	1	10/16/2019 13:05	WG1363432
Ethane	19.7		0.296	1.29	1	10/16/2019 13:05	WG1363432
Ethene	U		0.422	1.27	1	10/16/2019 13:05	WG1363432

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.27	J JO	1.05	25.0	1	10/21/2019 11:04	WG1366365
Acrylonitrile	U	UJ JO	0.873	5.00	1	10/21/2019 11:04	WG1366365
Benzene	12.5		0.0896	0.500	1	10/21/2019 11:04	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 11:04	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 11:04	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 11:04	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 11:04	WG1366365
Bromomethane	U	UJ JO	0.157	2.50	1	10/21/2019 11:04	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 11:04	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 11:04	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 11:04	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 11:04	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 11:04	WG1366365
Chlorobenzene	U		0.140	0.500	1	10/21/2019 11:04	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 11:04	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 11:04	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 11:04	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 11:04	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 11:04	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 11:04	WG1366365

JC 12/2/19

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 11:04	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 11:04	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 11:04	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 11:04	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 11:04	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 11:04	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 11:04	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 11:04	WG1366365
1,2-Dichloroethane	0.133	<u>U</u>	0.108	0.500	1	10/21/2019 11:04	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 11:04	WG1366365
cis-1,2-Dichloroethene	38.9		0.0933	0.500	1	10/21/2019 11:04	WG1366365
trans-1,2-Dichloroethene	0.492	<u>U</u>	0.152	0.500	1	10/21/2019 11:04	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 11:04	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 11:04	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 11:04	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 11:04	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 11:04	WG1366365
trans-1,4-Dichloro-2-butene	U	<u>UJ</u> <u>JO</u>	0.257	5.00	1	10/21/2019 11:04	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 11:04	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 11:04	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 11:04	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 11:04	WG1366365
2-Hexanone	U	<u>UJ</u> <u>JO</u>	0.757	5.00	1	10/21/2019 11:04	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 11:04	WG1366365
Iodomethane	U	<u>UJ</u> <u>JO</u>	0.377	10.0	1	10/21/2019 11:04	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 11:04	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 11:04	WG1366365
2-Butanone (MEK)	U	<u>UJ</u> <u>JO</u>	1.28	5.00	1	10/21/2019 11:04	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 11:04	WG1366365
4-Methyl-2-pentanone (MIBK)	U	<u>UJ</u> <u>JO</u>	0.823	5.00	1	10/21/2019 11:04	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 11:04	WG1366365
Naphthalene	U	<u>UJ</u> <u>JO</u>	0.174	2.50	1	10/21/2019 11:04	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 11:04	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 11:04	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 11:04	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 11:04	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 11:04	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 11:04	WG1366365
Toluene	4.38		0.412	0.500	1	10/21/2019 11:04	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 11:04	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 11:04	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 11:04	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 11:04	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 11:04	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 11:04	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 11:04	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 11:04	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 11:04	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 11:04	WG1366365
Vinyl acetate	U	<u>UJ</u> <u>JO</u>	0.645	5.00	1	10/21/2019 11:04	WG1366365
Vinyl chloride	20.3		0.118	0.500	1	10/21/2019 11:04	WG1366365
Xylenes, Total	U		0.316	1.50	1	10/21/2019 11:04	WG1366365
(S) Toluene-d8	95.8			80.0-120		10/21/2019 11:04	WG1366365
(S) 4-Bromofluorobenzene	91.9			77.0-126		10/21/2019 11:04	WG1366365
(S) 1,2-Dichloroethane-d4	85.9			70.0-130		10/21/2019 11:04	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/2/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	172000		2710	20000	1	10/18/2019 11:14	WG1365104

Sample Narrative:

L1149851-01 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	12800		51.9	1000	1	10/15/2019 22:42	WG1363086
Nitrate	U		22.7	100	1	10/15/2019 22:42	WG1363086
Sulfate	20300		77.4	5000	1	10/15/2019 22:42	WG1363086

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	10300		102	1000	1	10/17/2019 03:19	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	1850		15.0	100	1	10/21/2019 11:10	WG1364629
Manganese	406		0.250	5.00	1	10/21/2019 11:10	WG1364629

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/18/2019 04:37	WG1364938
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		10/18/2019 04:37	WG1364938

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	428		0.287	0.678	1	10/16/2019 13:10	WG1363432
Ethane	6.87		0.296	1.29	1	10/16/2019 13:10	WG1363432
Ethene	U		0.422	1.27	1	10/16/2019 13:10	WG1363432

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U	UJ JO	1.05	25.0	1	10/21/2019 11:44	WG1366365
Acrylonitrile	U	UJ JO	0.873	5.00	1	10/21/2019 11:44	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 11:44	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 11:44	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 11:44	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 11:44	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 11:44	WG1366365
Bromomethane	U	UJ JO	0.157	2.50	1	10/21/2019 11:44	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 11:44	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 11:44	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 11:44	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 11:44	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 11:44	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/21/2019 11:44	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 11:44	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 11:44	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 11:44	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 11:44	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 11:44	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 11:44	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 11:44	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 11:44	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 11:44	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 11:44	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 11:44	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 11:44	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 11:44	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 11:44	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 11:44	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 11:44	WG1366365
cis-1,2-Dichloroethene	7.78		0.0933	0.500	1	10/21/2019 11:44	WG1366365
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 11:44	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 11:44	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 11:44	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 11:44	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 11:44	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 11:44	WG1366365
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/21/2019 11:44	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 11:44	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 11:44	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 11:44	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 11:44	WG1366365
2-Hexanone	U	UJ JO	0.757	5.00	1	10/21/2019 11:44	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 11:44	WG1366365
Iodomethane	U	UJ JO	0.377	10.0	1	10/21/2019 11:44	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 11:44	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 11:44	WG1366365
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	10/21/2019 11:44	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 11:44	WG1366365
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/21/2019 11:44	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 11:44	WG1366365
Naphthalene	U	UJ JO	0.174	2.50	1	10/21/2019 11:44	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 11:44	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 11:44	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 11:44	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 11:44	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 11:44	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 11:44	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 11:44	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 11:44	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 11:44	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 11:44	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 11:44	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 11:44	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 11:44	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 11:44	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 11:44	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 11:44	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 11:44	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/2/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/21/2019 11:44	WG1366365
Vinyl chloride	0.994		0.118	0.500	1	10/21/2019 11:44	WG1366365
Xylenes, Total	U		0.316	1.50	1	10/21/2019 11:44	WG1366365
(S) Toluene-d8	96.6			80.0-120		10/21/2019 11:44	WG1366365
(S) 4-Bromofluorobenzene	94.2			77.0-126		10/21/2019 11:44	WG1366365
(S) 1,2-Dichloroethane-d4	85.9			70.0-130		10/21/2019 11:44	WG1366365

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/2/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	338000		2710	20000	1	10/18/2019 11:22	WG1365104

Sample Narrative:

L1149851-02 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	23300		51.9	1000	1	10/15/2019 22:56	WG1363086
Nitrate	U		22.7	100	1	10/15/2019 22:56	WG1363086
Sulfate	20600		77.4	5000	1	10/15/2019 22:56	WG1363086

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3630	B	102	1000	1	10/17/2019 03:41	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	2910		15.0	100	1	10/21/2019 11:25	WG1364629
Manganese	898		0.250	5.00	1	10/21/2019 11:25	WG1364629

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	1310		31.6	100	1	10/18/2019 05:01	WG1364938
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		10/18/2019 05:01	WG1364938

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	6190		0.287	0.678	1	10/16/2019 13:15	WG1363432
Ethane	U		0.296	1.29	1	10/16/2019 13:15	WG1363432
Ethene	394		0.422	1.27	1	10/16/2019 13:15	WG1363432

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U	UJ JO	1.05	25.0	1	10/21/2019 12:03	WG1366365
Acrylonitrile	U	UJ JO	0.873	5.00	1	10/21/2019 12:03	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 12:03	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 12:03	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 12:03	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 12:03	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 12:03	WG1366365
Bromomethane	U	UJ JO	0.157	2.50	1	10/21/2019 12:03	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 12:03	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 12:03	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 12:03	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 12:03	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 12:03	WG1366365

JC 12/2/19

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/21/2019 12:03	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 12:03	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 12:03	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 12:03	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 12:03	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 12:03	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 12:03	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 12:03	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 12:03	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 12:03	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 12:03	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 12:03	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 12:03	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 12:03	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 12:03	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 12:03	WG1366365
1,1-Dichloroethene	2.83		0.188	0.500	1	10/21/2019 12:03	WG1366365
cis-1,2-Dichloroethene	1350		9.33	50.0	100	10/23/2019 01:49	WG1367719
trans-1,2-Dichloroethene	7.85		0.152	0.500	1	10/21/2019 12:03	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 12:03	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 12:03	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 12:03	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 12:03	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 12:03	WG1366365
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/21/2019 12:03	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 12:03	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 12:03	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 12:03	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 12:03	WG1366365
2-Hexanone	U	UJ JO	0.757	5.00	1	10/21/2019 12:03	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 12:03	WG1366365
Iodomethane	U	UJ JO	0.377	10.0	1	10/21/2019 12:03	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 12:03	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 12:03	WG1366365
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	10/21/2019 12:03	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 12:03	WG1366365
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/21/2019 12:03	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 12:03	WG1366365
Naphthalene	U	UJ JO	0.174	2.50	1	10/21/2019 12:03	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 12:03	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 12:03	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 12:03	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 12:03	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 12:03	WG1366365
Tetrachloroethene	2.03		0.199	0.500	1	10/21/2019 12:03	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 12:03	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 12:03	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 12:03	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 12:03	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 12:03	WG1366365
Trichloroethene	6.77		0.153	0.500	1	10/21/2019 12:03	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 12:03	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 12:03	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 12:03	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 12:03	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 12:03	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/2/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/21/2019 12:03	WG1366365
Vinyl chloride	2830		11.8	50.0	100	10/23/2019 01:49	WG1367719
Xylenes, Total	U		0.316	1.50	1	10/21/2019 12:03	WG1366365
(S) Toluene-d8	94.4			80.0-120		10/21/2019 12:03	WG1366365
(S) Toluene-d8	96.6			80.0-120		10/23/2019 01:49	WG1367719
(S) 4-Bromofluorobenzene	92.3			77.0-126		10/21/2019 12:03	WG1366365
(S) 4-Bromofluorobenzene	107			77.0-126		10/23/2019 01:49	WG1367719
(S) 1,2-Dichloroethane-d4	81.9			70.0-130		10/21/2019 12:03	WG1366365
(S) 1,2-Dichloroethane-d4	103			70.0-130		10/23/2019 01:49	WG1367719

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/2/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	228000		2710	20000	1	10/18/2019 11:37	WG1365104

Sample Narrative:

L1149851-03 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	15100		51.9	1000	1	10/15/2019 23:54	WG1363086
Nitrate	U		22.7	100	1	10/15/2019 23:54	WG1363086
Sulfate	86500		77.4	5000	1	10/15/2019 23:54	WG1363086

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	2950	<u>B</u>	102	1000	1	10/17/2019 03:58	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	511		15.0	100	1	10/21/2019 11:29	WG1364629
Manganese	435		0.250	5.00	1	10/21/2019 11:29	WG1364629

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	105		0.287	0.678	1	10/16/2019 13:25	WG1363432
Ethane	U		0.296	1.29	1	10/16/2019 13:25	WG1363432
Ethene	U		0.422	1.27	1	10/16/2019 13:25	WG1363432

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U	<u>UJ</u> <u>JO</u>	1.05	25.0	1	10/21/2019 12:23	WG1366365
Acrylonitrile	U	<u>UJ</u> <u>JO</u>	0.873	5.00	1	10/21/2019 12:23	WG1366365
Benzene	0.295	<u>J</u>	0.0896	0.500	1	10/21/2019 12:23	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 12:23	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 12:23	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 12:23	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 12:23	WG1366365
Bromomethane	U	<u>UJ</u> <u>JO</u>	0.157	2.50	1	10/21/2019 12:23	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 12:23	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 12:23	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 12:23	WG1366365
Carbon disulfide	5.84		0.101	0.500	1	10/21/2019 12:23	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 12:23	WG1366365
Chlorobenzene	U		0.140	0.500	1	10/21/2019 12:23	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 12:23	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 12:23	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 12:23	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 12:23	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 12:23	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 12:23	WG1366365

JC 12/2/19

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 12:23	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 12:23	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 12:23	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 12:23	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 12:23	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 12:23	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 12:23	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 12:23	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 12:23	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 12:23	WG1366365
cis-1,2-Dichloroethene	1.47		0.0933	0.500	1	10/23/2019 02:10	WG1367719
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 12:23	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 12:23	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 12:23	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 12:23	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 12:23	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 12:23	WG1366365
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/21/2019 12:23	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 12:23	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 12:23	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 12:23	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 12:23	WG1366365
2-Hexanone	U	UJ JO	0.757	5.00	1	10/21/2019 12:23	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 12:23	WG1366365
Iodomethane	U	UJ JO	0.377	10.0	1	10/21/2019 12:23	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 12:23	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 12:23	WG1366365
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	10/21/2019 12:23	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 12:23	WG1366365
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/21/2019 12:23	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 12:23	WG1366365
Naphthalene	U	UJ JO	0.174	2.50	1	10/21/2019 12:23	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 12:23	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 12:23	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 12:23	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 12:23	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 12:23	WG1366365
Tetrachloroethene	1.11		0.199	0.500	1	10/21/2019 12:23	WG1366365
Toluene	2.01		0.412	0.500	1	10/21/2019 12:23	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 12:23	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 12:23	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 12:23	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 12:23	WG1366365
Trichloroethene	0.497	J	0.153	0.500	1	10/21/2019 12:23	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 12:23	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 12:23	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 12:23	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 12:23	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 12:23	WG1366365
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/21/2019 12:23	WG1366365
Vinyl chloride	6.37		0.118	0.500	1	10/23/2019 02:10	WG1367719
Xylenes, Total	U		0.316	1.50	1	10/21/2019 12:23	WG1366365
(S) Toluene-d8	99.9			80.0-120		10/21/2019 12:23	WG1366365
(S) Toluene-d8	96.5			80.0-120		10/23/2019 02:10	WG1367719
(S) 4-Bromofluorobenzene	95.2			77.0-126		10/21/2019 12:23	WG1366365
(S) 4-Bromofluorobenzene	102			77.0-126		10/23/2019 02:10	WG1367719

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/2/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	84.3			70.0-130		10/21/2019 12:23	WG1366365
(S) 1,2-Dichloroethane-d4	98.3			70.0-130		10/23/2019 02:10	WG1367719

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/2/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	197000		2710	20000	1	10/18/2019 11:44	WG1365104

Sample Narrative:

L1149851-04 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	17100		51.9	1000	1	10/16/2019 00:08	WG1363086
Nitrate	U		22.7	100	1	10/16/2019 00:08	WG1363086
Sulfate	37200		77.4	5000	1	10/16/2019 00:08	WG1363086

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3780	B	102	1000	1	10/17/2019 04:56	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	1330		15.0	100	1	10/21/2019 11:32	WG1364629
Manganese	838		0.250	5.00	1	10/21/2019 11:32	WG1364629

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/18/2019 05:24	WG1364938
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		10/18/2019 05:24	WG1364938

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	203		0.287	0.678	1	10/16/2019 13:27	WG1363432
Ethane	U		0.296	1.29	1	10/16/2019 13:27	WG1363432
Ethene	69.9		0.422	1.27	1	10/16/2019 13:27	WG1363432

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U	UJ JO	1.05	25.0	1	10/21/2019 12:43	WG1366365
Acrylonitrile	U	UJ JO	0.873	5.00	1	10/21/2019 12:43	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 12:43	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 12:43	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 12:43	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 12:43	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 12:43	WG1366365
Bromomethane	U	UJ JO	0.157	2.50	1	10/21/2019 12:43	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 12:43	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 12:43	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 12:43	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 12:43	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 12:43	WG1366365

JC 12/2/19

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/21/2019 12:43	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 12:43	WG1366365
Chloroethane	0.362	J	0.141	2.50	1	10/21/2019 12:43	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 12:43	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 12:43	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 12:43	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 12:43	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 12:43	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 12:43	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 12:43	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 12:43	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 12:43	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 12:43	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 12:43	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 12:43	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 12:43	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 12:43	WG1366365
cis-1,2-Dichloroethene	2.23		0.0933	0.500	1	10/23/2019 02:30	WG1367719
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 12:43	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 12:43	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 12:43	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 12:43	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 12:43	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 12:43	WG1366365
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/21/2019 12:43	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 12:43	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 12:43	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 12:43	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 12:43	WG1366365
2-Hexanone	U	UJ JO	0.757	5.00	1	10/21/2019 12:43	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 12:43	WG1366365
Iodomethane	U	UJ JO	0.377	10.0	1	10/21/2019 12:43	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 12:43	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 12:43	WG1366365
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	10/21/2019 12:43	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 12:43	WG1366365
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/21/2019 12:43	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 12:43	WG1366365
Naphthalene	U	UJ JO	0.174	2.50	1	10/21/2019 12:43	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 12:43	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 12:43	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 12:43	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 12:43	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 12:43	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 12:43	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 12:43	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 12:43	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 12:43	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 12:43	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 12:43	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 12:43	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 12:43	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 12:43	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 12:43	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 12:43	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 12:43	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/2/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/21/2019 12:43	WG1366365
Vinyl chloride	18.2		0.118	0.500	1	10/23/2019 02:30	WG1367719
Xylenes, Total	U		0.316	1.50	1	10/21/2019 12:43	WG1366365
(S) Toluene-d8	96.3			80.0-120		10/21/2019 12:43	WG1366365
(S) Toluene-d8	95.3			80.0-120		10/23/2019 02:30	WG1367719
(S) 4-Bromofluorobenzene	91.4			77.0-126		10/21/2019 12:43	WG1366365
(S) 4-Bromofluorobenzene	102			77.0-126		10/23/2019 02:30	WG1367719
(S) 1,2-Dichloroethane-d4	83.1			70.0-130		10/21/2019 12:43	WG1366365
(S) 1,2-Dichloroethane-d4	98.2			70.0-130		10/23/2019 02:30	WG1367719

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

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9 Sc

JC 12/2/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	186000		2710	20000	1	10/18/2019 11:52	WG1365104

Sample Narrative:

L1149851-05 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	18400		51.9	1000	1	10/16/2019 00:23	WG1363086
Nitrate	1580		22.7	100	1	10/16/2019 00:23	WG1363086
Sulfate	87800		77.4	5000	1	10/16/2019 00:23	WG1363086

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1920	B	102	1000	1	10/17/2019 05:16	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	173		15.0	100	1	10/21/2019 11:58	WG1364629
Manganese	129		0.250	5.00	1	10/21/2019 11:58	WG1364629

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/18/2019 05:48	WG1364938
(S) a,a,a-Trifluorotoluene(FID)	109			78.0-120		10/18/2019 05:48	WG1364938

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	U		0.287	0.678	1	10/17/2019 11:11	WG1364418
Ethane	U		0.296	1.29	1	10/17/2019 11:11	WG1364418
Ethene	U		0.422	1.27	1	10/17/2019 11:11	WG1364418

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U	UJ JO	1.05	25.0	1	10/21/2019 13:02	WG1366365
Acrylonitrile	U	UJ JO	0.873	5.00	1	10/21/2019 13:02	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 13:02	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 13:02	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 13:02	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 13:02	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 13:02	WG1366365
Bromomethane	U	UJ JO	0.157	2.50	1	10/21/2019 13:02	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 13:02	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 13:02	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 13:02	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 13:02	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 13:02	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/21/2019 13:02	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 13:02	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 13:02	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 13:02	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 13:02	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 13:02	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 13:02	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 13:02	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 13:02	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 13:02	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 13:02	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 13:02	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 13:02	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 13:02	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 13:02	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 13:02	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 13:02	WG1366365
cis-1,2-Dichloroethene	1.40		0.0933	0.500	1	10/23/2019 02:50	WG1367719
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 13:02	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 13:02	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 13:02	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 13:02	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 13:02	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 13:02	WG1366365
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/21/2019 13:02	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 13:02	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 13:02	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 13:02	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 13:02	WG1366365
2-Hexanone	U	UJ JO	0.757	5.00	1	10/21/2019 13:02	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 13:02	WG1366365
Iodomethane	U	UJ JO	0.377	10.0	1	10/21/2019 13:02	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 13:02	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 13:02	WG1366365
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	10/21/2019 13:02	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 13:02	WG1366365
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/21/2019 13:02	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 13:02	WG1366365
Naphthalene	U	UJ JO	0.174	2.50	1	10/21/2019 13:02	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 13:02	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 13:02	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 13:02	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 13:02	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 13:02	WG1366365
Tetrachloroethene	4.99		0.199	0.500	1	10/21/2019 13:02	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 13:02	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 13:02	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 13:02	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 13:02	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 13:02	WG1366365
Trichloroethene	0.445	J	0.153	0.500	1	10/21/2019 13:02	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 13:02	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 13:02	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 13:02	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 13:02	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 13:02	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/2/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/21/2019 13:02	WG1366365
Vinyl chloride	U		0.118	0.500	1	10/23/2019 02:50	WG1367719
Xylenes, Total	U		0.316	1.50	1	10/21/2019 13:02	WG1366365
(S) Toluene-d8	95.1			80.0-120		10/21/2019 13:02	WG1366365
(S) Toluene-d8	97.5			80.0-120		10/23/2019 02:50	WG1367719
(S) 4-Bromofluorobenzene	91.0			77.0-126		10/21/2019 13:02	WG1366365
(S) 4-Bromofluorobenzene	105			77.0-126		10/23/2019 02:50	WG1367719
(S) 1,2-Dichloroethane-d4	83.6			70.0-130		10/21/2019 13:02	WG1366365
(S) 1,2-Dichloroethane-d4	103			70.0-130		10/23/2019 02:50	WG1367719

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/2/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	182000		2710	20000	1	10/18/2019 11:59	WG1365104

Sample Narrative:

L1149851-06 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	7800		51.9	1000	1	10/15/2019 16:07	WG1363090
Nitrate	58.4	J	22.7	100	1	10/15/2019 16:07	WG1363090
Sulfate	5820		77.4	5000	1	10/15/2019 16:07	WG1363090

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	1190	B	102	1000	1	10/17/2019 05:34	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	348		15.0	100	1	10/21/2019 12:02	WG1364629
Manganese	212		0.250	5.00	1	10/21/2019 12:02	WG1364629

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	U		0.287	0.678	1	10/17/2019 11:14	WG1364418
Ethane	U		0.296	1.29	1	10/17/2019 11:14	WG1364418
Ethene	U		0.422	1.27	1	10/17/2019 11:14	WG1364418

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U	UJ JO	1.05	25.0	1	10/21/2019 13:22	WG1366365
Acrylonitrile	U	UJ JO	0.873	5.00	1	10/21/2019 13:22	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 13:22	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 13:22	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 13:22	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 13:22	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 13:22	WG1366365
Bromomethane	U	UJ JO	0.157	2.50	1	10/21/2019 13:22	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 13:22	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 13:22	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 13:22	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 13:22	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 13:22	WG1366365
Chlorobenzene	U		0.140	0.500	1	10/21/2019 13:22	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 13:22	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 13:22	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 13:22	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 13:22	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 13:22	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 13:22	WG1366365

JC 12/2/19

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 13:22	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 13:22	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 13:22	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 13:22	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 13:22	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 13:22	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 13:22	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 13:22	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 13:22	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 13:22	WG1366365
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/23/2019 03:11	WG1367719
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 13:22	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 13:22	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 13:22	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 13:22	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 13:22	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 13:22	WG1366365
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/21/2019 13:22	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 13:22	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 13:22	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 13:22	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 13:22	WG1366365
2-Hexanone	U	UJ JO	0.757	5.00	1	10/21/2019 13:22	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 13:22	WG1366365
Iodomethane	U	UJ JO	0.377	10.0	1	10/21/2019 13:22	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 13:22	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 13:22	WG1366365
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	10/21/2019 13:22	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 13:22	WG1366365
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/21/2019 13:22	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 13:22	WG1366365
Naphthalene	U	UJ JO	0.174	2.50	1	10/21/2019 13:22	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 13:22	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 13:22	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 13:22	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 13:22	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 13:22	WG1366365
Tetrachloroethene	0.223	J	0.199	0.500	1	10/21/2019 13:22	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 13:22	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 13:22	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 13:22	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 13:22	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 13:22	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 13:22	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 13:22	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 13:22	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 13:22	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 13:22	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 13:22	WG1366365
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/21/2019 13:22	WG1366365
Vinyl chloride	U		0.118	0.500	1	10/23/2019 03:11	WG1367719
Xylenes, Total	U		0.316	1.50	1	10/21/2019 13:22	WG1366365
(S) Toluene-d8	99.6			80.0-120		10/21/2019 13:22	WG1366365
(S) Toluene-d8	95.7			80.0-120		10/23/2019 03:11	WG1367719
(S) 4-Bromofluorobenzene	93.7			77.0-126		10/21/2019 13:22	WG1366365
(S) 4-Bromofluorobenzene	108			77.0-126		10/23/2019 03:11	WG1367719

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/2/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	83.3			70.0-130		10/21/2019 13:22	WG1366365
(S) 1,2-Dichloroethane-d4	102			70.0-130		10/23/2019 03:11	WG1367719

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/2/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	222000		2710	20000	1	10/18/2019 12:06	WG1365104

Sample Narrative:

L1149851-07 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	29100		51.9	1000	1	10/15/2019 16:33	WG1363090
Nitrate	U		22.7	100	1	10/15/2019 16:33	WG1363090
Sulfate	7700		77.4	5000	1	10/15/2019 16:33	WG1363090

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	1970	B	102	1000	1	10/17/2019 05:51	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	159		15.0	100	1	10/21/2019 12:05	WG1364629
Manganese	229		0.250	5.00	1	10/21/2019 12:05	WG1364629

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	324		0.287	0.678	1	10/17/2019 11:17	WG1364418
Ethane	20.9		0.296	1.29	1	10/17/2019 11:17	WG1364418
Ethene	20.1		0.422	1.27	1	10/17/2019 11:17	WG1364418

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
	ug/l		ug/l	ug/l		date / time		
Acetone	1.25	U	J JO	1.05	25.0	1	10/21/2019 13:41	WG1366365
Acrylonitrile	U	UJ	JO	0.873	5.00	1	10/21/2019 13:41	WG1366365
Benzene	U			0.0896	0.500	1	10/21/2019 13:41	WG1366365
Bromobenzene	U			0.133	0.500	1	10/21/2019 13:41	WG1366365
Bromodichloromethane	U			0.0800	0.500	1	10/21/2019 13:41	WG1366365
Bromochloromethane	U			0.145	0.500	1	10/21/2019 13:41	WG1366365
Bromoform	U			0.186	0.500	1	10/21/2019 13:41	WG1366365
Bromomethane	U	UJ	JO	0.157	2.50	1	10/21/2019 13:41	WG1366365
n-Butylbenzene	U			0.143	0.500	1	10/21/2019 13:41	WG1366365
sec-Butylbenzene	U			0.134	0.500	1	10/21/2019 13:41	WG1366365
tert-Butylbenzene	U			0.183	0.500	1	10/21/2019 13:41	WG1366365
Carbon disulfide	U			0.101	0.500	1	10/21/2019 13:41	WG1366365
Carbon tetrachloride	U			0.159	0.500	1	10/21/2019 13:41	WG1366365
Chlorobenzene	U			0.140	0.500	1	10/21/2019 13:41	WG1366365
Chlorodibromomethane	U			0.128	0.500	1	10/21/2019 13:41	WG1366365
Chloroethane	U			0.141	2.50	1	10/21/2019 13:41	WG1366365
Chloroform	U			0.0860	0.500	1	10/21/2019 13:41	WG1366365
Chloromethane	U			0.153	1.25	1	10/21/2019 13:41	WG1366365
2-Chlorotoluene	U			0.111	0.500	1	10/21/2019 13:41	WG1366365
4-Chlorotoluene	U			0.0972	0.500	1	10/21/2019 13:41	WG1366365

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1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 13:41	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 13:41	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 13:41	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 13:41	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 13:41	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 13:41	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 13:41	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 13:41	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 13:41	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 13:41	WG1366365
cis-1,2-Dichloroethene	0.413	J J	0.0933	0.500	1	10/23/2019 03:31	WG1367719
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 13:41	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 13:41	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 13:41	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 13:41	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 13:41	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 13:41	WG1366365
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/21/2019 13:41	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 13:41	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 13:41	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 13:41	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 13:41	WG1366365
2-Hexanone	U	UJ JO	0.757	5.00	1	10/21/2019 13:41	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 13:41	WG1366365
Iodomethane	U	UJ JO	0.377	10.0	1	10/21/2019 13:41	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 13:41	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 13:41	WG1366365
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	10/21/2019 13:41	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 13:41	WG1366365
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/21/2019 13:41	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 13:41	WG1366365
Naphthalene	U	UJ JO	0.174	2.50	1	10/21/2019 13:41	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 13:41	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 13:41	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 13:41	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 13:41	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 13:41	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 13:41	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 13:41	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 13:41	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 13:41	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 13:41	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 13:41	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 13:41	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 13:41	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 13:41	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 13:41	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 13:41	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 13:41	WG1366365
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/21/2019 13:41	WG1366365
Vinyl chloride	8.63		0.118	0.500	1	10/23/2019 03:31	WG1367719
Xylenes, Total	U		0.316	1.50	1	10/21/2019 13:41	WG1366365
(S) Toluene-d8	97.1			80.0-120		10/21/2019 13:41	WG1366365
(S) Toluene-d8	94.2			80.0-120		10/23/2019 03:31	WG1367719
(S) 4-Bromofluorobenzene	90.6			77.0-126		10/21/2019 13:41	WG1366365
(S) 4-Bromofluorobenzene	101			77.0-126		10/23/2019 03:31	WG1367719

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/2/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	81.7			70.0-130		10/21/2019 13:41	WG1366365
(S) 1,2-Dichloroethane-d4	108			70.0-130		10/23/2019 03:31	WG1367719

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/2/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	339000		2710	20000	1	10/18/2019 12:13	WG1365104

Sample Narrative:

L1149851-08 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	23200		51.9	1000	1	10/15/2019 17:38	WG1363090
Nitrate	U		22.7	100	1	10/15/2019 17:38	WG1363090
Sulfate	28000		77.4	5000	1	10/15/2019 17:38	WG1363090

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	6700	<u>B</u>	510	5000	5	10/17/2019 16:35	WG1364260

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	9370		15.0	100	1	10/21/2019 12:09	WG1364629
Manganese	919		0.250	5.00	1	10/21/2019 12:09	WG1364629

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	513		31.6	100	1	10/18/2019 06:12	WG1364938
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		10/18/2019 06:12	WG1364938

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	7830		2.87	6.78	10	10/18/2019 13:08	WG1365165
Ethane	2.94		0.296	1.29	1	10/17/2019 11:26	WG1364418
Ethene	457		0.422	1.27	1	10/17/2019 11:26	WG1364418

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U	<u>UJ</u> <u>JO</u>	1.05	25.0	1	10/21/2019 14:01	WG1366365
Acrylonitrile	U	<u>UJ</u> <u>JO</u>	0.873	5.00	1	10/21/2019 14:01	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 14:01	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 14:01	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 14:01	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 14:01	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 14:01	WG1366365
Bromomethane	U	<u>UJ</u> <u>JO</u>	0.157	2.50	1	10/21/2019 14:01	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 14:01	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 14:01	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 14:01	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 14:01	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 14:01	WG1366365

JC 12/2/19

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/21/2019 14:01	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 14:01	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 14:01	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 14:01	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 14:01	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 14:01	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 14:01	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 14:01	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 14:01	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 14:01	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 14:01	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 14:01	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 14:01	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 14:01	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 14:01	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 14:01	WG1366365
1,1-Dichloroethene	1.92		0.188	0.500	1	10/21/2019 14:01	WG1366365
cis-1,2-Dichloroethene	597		2.33	12.5	25	10/23/2019 03:51	WG1367719
trans-1,2-Dichloroethene	2.91		0.152	0.500	1	10/21/2019 14:01	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 14:01	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 14:01	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 14:01	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 14:01	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 14:01	WG1366365
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/21/2019 14:01	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 14:01	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 14:01	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 14:01	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 14:01	WG1366365
2-Hexanone	U	UJ JO	0.757	5.00	1	10/21/2019 14:01	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 14:01	WG1366365
Iodomethane	U	UJ JO	0.377	10.0	1	10/21/2019 14:01	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 14:01	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 14:01	WG1366365
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	10/21/2019 14:01	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 14:01	WG1366365
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/21/2019 14:01	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 14:01	WG1366365
Naphthalene	U	UJ JO	0.174	2.50	1	10/21/2019 14:01	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 14:01	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 14:01	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 14:01	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 14:01	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 14:01	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 14:01	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 14:01	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 14:01	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 14:01	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 14:01	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 14:01	WG1366365
Trichloroethene	3.38		0.153	0.500	1	10/21/2019 14:01	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 14:01	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 14:01	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 14:01	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 14:01	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 14:01	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/2/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/21/2019 14:01	WG1366365
Vinyl chloride	1410		2.95	12.5	25	10/23/2019 03:51	WG1367719
Xylenes, Total	U		0.316	1.50	1	10/21/2019 14:01	WG1366365
(S) Toluene-d8	98.9			80.0-120		10/21/2019 14:01	WG1366365
(S) Toluene-d8	96.4			80.0-120		10/23/2019 03:51	WG1367719
(S) 4-Bromofluorobenzene	95.6			77.0-126		10/21/2019 14:01	WG1366365
(S) 4-Bromofluorobenzene	102			77.0-126		10/23/2019 03:51	WG1367719
(S) 1,2-Dichloroethane-d4	81.8			70.0-130		10/21/2019 14:01	WG1366365
(S) 1,2-Dichloroethane-d4	102			70.0-130		10/23/2019 03:51	WG1367719

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/2/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	289000		2710	20000	1	10/18/2019 12:20	WG1365104

Sample Narrative:

L1149851-09 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	26000		51.9	1000	1	10/15/2019 17:51	WG1363090
Nitrate	U		22.7	100	1	10/15/2019 17:51	WG1363090
Sulfate	14400		77.4	5000	1	10/15/2019 17:51	WG1363090

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1280	B	102	1000	1	10/17/2019 16:53	WG1364260

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	1390		15.0	100	1	10/21/2019 12:13	WG1364629
Manganese	737		0.250	5.00	1	10/21/2019 12:13	WG1364629

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	54.7	U BJ	31.6	100	1	10/23/2019 02:14	WG1367521
(S) a,a,a-Trifluorotoluene(FID)	103			78.0-120		10/23/2019 02:14	WG1367521

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	226		0.287	0.678	1	10/17/2019 13:20	WG1364418
Ethane	U		0.296	1.29	1	10/17/2019 13:20	WG1364418
Ethene	U		0.422	1.27	1	10/17/2019 13:20	WG1364418

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U	UJ JO	1.05	25.0	1	10/21/2019 14:21	WG1366365
Acrylonitrile	U	UJ JO	0.873	5.00	1	10/21/2019 14:21	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 14:21	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 14:21	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 14:21	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 14:21	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 14:21	WG1366365
Bromomethane	U	UJ JO	0.157	2.50	1	10/21/2019 14:21	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 14:21	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 14:21	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 14:21	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 14:21	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 14:21	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/21/2019 14:21	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 14:21	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 14:21	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 14:21	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 14:21	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 14:21	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 14:21	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 14:21	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 14:21	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 14:21	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 14:21	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 14:21	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 14:21	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 14:21	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 14:21	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 14:21	WG1366365
1,1-Dichloroethene	0.451	<u>J</u>	0.188	0.500	1	10/21/2019 14:21	WG1366365
cis-1,2-Dichloroethene	1.30		0.0933	0.500	1	10/23/2019 04:11	WG1367719
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 14:21	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 14:21	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 14:21	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 14:21	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 14:21	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 14:21	WG1366365
trans-1,4-Dichloro-2-butene	U	<u>UJ</u> <u>JO</u>	0.257	5.00	1	10/21/2019 14:21	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 14:21	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 14:21	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 14:21	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 14:21	WG1366365
2-Hexanone	U	<u>UJ</u> <u>JO</u>	0.757	5.00	1	10/21/2019 14:21	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 14:21	WG1366365
Iodomethane	U	<u>UJ</u> <u>JO</u>	0.377	10.0	1	10/21/2019 14:21	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 14:21	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 14:21	WG1366365
2-Butanone (MEK)	U	<u>UJ</u> <u>JO</u>	1.28	5.00	1	10/21/2019 14:21	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 14:21	WG1366365
4-Methyl-2-pentanone (MIBK)	U	<u>UJ</u> <u>JO</u>	0.823	5.00	1	10/21/2019 14:21	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 14:21	WG1366365
Naphthalene	U	<u>UJ</u> <u>JO</u>	0.174	2.50	1	10/21/2019 14:21	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 14:21	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 14:21	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 14:21	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 14:21	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 14:21	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 14:21	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 14:21	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 14:21	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 14:21	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 14:21	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 14:21	WG1366365
Trichloroethene	0.978		0.153	0.500	1	10/21/2019 14:21	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 14:21	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 14:21	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 14:21	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 14:21	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 14:21	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/2/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/21/2019 14:21	WG1366365
Vinyl chloride	U		0.118	0.500	1	10/23/2019 04:11	WG1367719
Xylenes, Total	U		0.316	1.50	1	10/21/2019 14:21	WG1366365
(S) Toluene-d8	97.1			80.0-120		10/21/2019 14:21	WG1366365
(S) Toluene-d8	94.4			80.0-120		10/23/2019 04:11	WG1367719
(S) 4-Bromofluorobenzene	90.8			77.0-126		10/21/2019 14:21	WG1366365
(S) 4-Bromofluorobenzene	104			77.0-126		10/23/2019 04:11	WG1367719
(S) 1,2-Dichloroethane-d4	80.7			70.0-130		10/21/2019 14:21	WG1366365
(S) 1,2-Dichloroethane-d4	103			70.0-130		10/23/2019 04:11	WG1367719

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/2/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	302000		2710	20000	1	10/18/2019 12:27	WG1365104

Sample Narrative:

L1149851-10 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	27400		51.9	1000	1	10/15/2019 18:04	WG1363090
Nitrate	U		22.7	100	1	10/15/2019 18:04	WG1363090
Sulfate	25000		77.4	5000	1	10/15/2019 18:04	WG1363090

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	1550	B	102	1000	1	10/17/2019 17:20	WG1364260

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	948		15.0	100	1	10/21/2019 12:16	WG1364629
Manganese	870		0.250	5.00	1	10/21/2019 12:16	WG1364629

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	166		0.287	0.678	1	10/17/2019 13:23	WG1364418
Ethane	17.7		0.296	1.29	1	10/17/2019 13:23	WG1364418
Ethene	13.8		0.422	1.27	1	10/17/2019 13:23	WG1364418

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U	UJ JO	1.05	25.0	1	10/21/2019 14:40	WG1366365
Acrylonitrile	U	UJ JO	0.873	5.00	1	10/21/2019 14:40	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 14:40	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 14:40	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 14:40	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 14:40	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 14:40	WG1366365
Bromomethane	U	UJ JO	0.157	2.50	1	10/21/2019 14:40	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 14:40	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 14:40	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 14:40	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 14:40	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 14:40	WG1366365
Chlorobenzene	U		0.140	0.500	1	10/21/2019 14:40	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 14:40	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 14:40	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 14:40	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 14:40	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 14:40	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 14:40	WG1366365

JC 12/2/19

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 14:40	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 14:40	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 14:40	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 14:40	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 14:40	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 14:40	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 14:40	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 14:40	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 14:40	WG1366365
1,1-Dichloroethene	1.08		0.188	0.500	1	10/21/2019 14:40	WG1366365
cis-1,2-Dichloroethene	91.7		0.0933	0.500	1	10/21/2019 14:40	WG1366365
trans-1,2-Dichloroethene	0.158	J	0.152	0.500	1	10/21/2019 14:40	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 14:40	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 14:40	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 14:40	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 14:40	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 14:40	WG1366365
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/21/2019 14:40	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 14:40	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 14:40	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 14:40	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 14:40	WG1366365
2-Hexanone	U	UJ JO	0.757	5.00	1	10/21/2019 14:40	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 14:40	WG1366365
Iodomethane	U	UJ JO	0.377	10.0	1	10/21/2019 14:40	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 14:40	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 14:40	WG1366365
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	10/21/2019 14:40	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 14:40	WG1366365
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/21/2019 14:40	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 14:40	WG1366365
Naphthalene	U	UJ JO	0.174	2.50	1	10/21/2019 14:40	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 14:40	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 14:40	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 14:40	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 14:40	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 14:40	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 14:40	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 14:40	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 14:40	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 14:40	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 14:40	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 14:40	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 14:40	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 14:40	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 14:40	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 14:40	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 14:40	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 14:40	WG1366365
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/21/2019 14:40	WG1366365
Vinyl chloride	51.8		0.118	0.500	1	10/21/2019 14:40	WG1366365
Xylenes, Total	U		0.316	1.50	1	10/21/2019 14:40	WG1366365
(S) Toluene-d8	95.4			80.0-120		10/21/2019 14:40	WG1366365
(S) 4-Bromofluorobenzene	89.6			77.0-126		10/21/2019 14:40	WG1366365
(S) 1,2-Dichloroethane-d4	82.6			70.0-130		10/21/2019 14:40	WG1366365

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/2/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	200000		2710	20000	1	10/22/2019 05:44	WG1366027

Sample Narrative:

L1150336-01 WG1366027: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	7780		51.9	1000	1	10/16/2019 19:05	WG1363847
Nitrate	U		22.7	100	1	10/16/2019 19:05	WG1363847
Sulfate	3890	J	77.4	5000	1	10/16/2019 19:05	WG1363847

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	5050	B	102	1000	1	10/19/2019 18:45	WG1365601

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	388		15.0	100	1	10/22/2019 14:13	WG1364631
Manganese	327		0.250	5.00	1	10/22/2019 14:13	WG1364631

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	317		0.287	0.678	1	10/17/2019 15:34	WG1364420
Ethane	U		0.296	1.29	1	10/17/2019 15:34	WG1364420
Ethene	U		0.422	1.27	1	10/17/2019 15:34	WG1364420

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.34	J	1.05	25.0	1	10/24/2019 05:08	WG1368527
Acrylonitrile	U		0.873	5.00	1	10/24/2019 05:08	WG1368527
Benzene	U		0.0896	0.500	1	10/24/2019 05:08	WG1368527
Bromobenzene	U		0.133	0.500	1	10/24/2019 05:08	WG1368527
Bromodichloromethane	U		0.0800	0.500	1	10/24/2019 05:08	WG1368527
Bromochloromethane	U		0.145	0.500	1	10/24/2019 05:08	WG1368527
Bromoform	U		0.186	0.500	1	10/24/2019 05:08	WG1368527
Bromomethane	U		0.157	2.50	1	10/24/2019 05:08	WG1368527
n-Butylbenzene	U		0.143	0.500	1	10/24/2019 05:08	WG1368527
sec-Butylbenzene	U		0.134	0.500	1	10/24/2019 05:08	WG1368527
tert-Butylbenzene	U		0.183	0.500	1	10/24/2019 05:08	WG1368527
Carbon disulfide	U		0.101	0.500	1	10/24/2019 05:08	WG1368527
Carbon tetrachloride	U		0.159	0.500	1	10/24/2019 05:08	WG1368527
Chlorobenzene	U		0.140	0.500	1	10/24/2019 05:08	WG1368527
Chlorodibromomethane	U	UJ JO	0.128	0.500	1	10/24/2019 05:08	WG1368527
Chloroethane	U		0.141	2.50	1	10/24/2019 05:08	WG1368527
Chloroform	U		0.0860	0.500	1	10/24/2019 05:08	WG1368527
Chloromethane	U		0.153	1.25	1	10/24/2019 05:08	WG1368527
2-Chlorotoluene	U		0.111	0.500	1	10/24/2019 05:08	WG1368527
4-Chlorotoluene	U		0.0972	0.500	1	10/24/2019 05:08	WG1368527

JC 12/2/2019

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/24/2019 05:08	WG1368527
1,2-Dibromoethane	U		0.193	0.500	1	10/24/2019 05:08	WG1368527
Dibromomethane	U		0.117	0.500	1	10/24/2019 05:08	WG1368527
1,2-Dichlorobenzene	U	UJ JO	0.101	0.500	1	10/24/2019 05:08	WG1368527
1,3-Dichlorobenzene	U	UJ JO J4	0.130	0.500	1	10/24/2019 05:08	WG1368527
1,4-Dichlorobenzene	U	UJ JO J4	0.121	0.500	1	10/24/2019 05:08	WG1368527
Dichlorodifluoromethane	U		0.127	2.50	1	10/24/2019 05:08	WG1368527
1,1-Dichloroethane	U		0.114	0.500	1	10/24/2019 05:08	WG1368527
1,2-Dichloroethane	U		0.108	0.500	1	10/24/2019 05:08	WG1368527
1,1-Dichloroethene	U		0.188	0.500	1	10/24/2019 05:08	WG1368527
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/24/2019 05:08	WG1368527
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/24/2019 05:08	WG1368527
1,2-Dichloropropane	U		0.190	0.500	1	10/24/2019 05:08	WG1368527
1,1-Dichloropropene	U		0.128	0.500	1	10/24/2019 05:08	WG1368527
1,3-Dichloropropane	U	UJ JO J4	0.147	1.00	1	10/24/2019 05:08	WG1368527
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/24/2019 05:08	WG1368527
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/24/2019 05:08	WG1368527
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/24/2019 05:08	WG1368527
2,2-Dichloropropane	U		0.0929	0.500	1	10/24/2019 05:08	WG1368527
Di-isopropyl ether	U		0.0924	0.500	1	10/24/2019 05:08	WG1368527
Ethylbenzene	U		0.158	0.500	1	10/24/2019 05:08	WG1368527
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/24/2019 05:08	WG1368527
2-Hexanone	U		0.757	5.00	1	10/24/2019 05:08	WG1368527
n-Hexane	U	UJ JO	0.305	5.00	1	10/24/2019 05:08	WG1368527
Iodomethane	U		0.377	10.0	1	10/24/2019 05:08	WG1368527
Isopropylbenzene	U		0.126	0.500	1	10/24/2019 05:08	WG1368527
p-Isopropyltoluene	U		0.138	0.500	1	10/24/2019 05:08	WG1368527
2-Butanone (MEK)	U		1.28	5.00	1	10/24/2019 05:08	WG1368527
Methylene Chloride	U		1.07	2.50	1	10/24/2019 05:08	WG1368527
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/24/2019 05:08	WG1368527
Methyl tert-butyl ether	U		0.102	0.500	1	10/24/2019 05:08	WG1368527
Naphthalene	U		0.174	2.50	1	10/24/2019 05:08	WG1368527
n-Propylbenzene	U		0.162	0.500	1	10/24/2019 05:08	WG1368527
Styrene	U		0.117	0.500	1	10/24/2019 05:08	WG1368527
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/24/2019 05:08	WG1368527
1,1,2,2-Tetrachloroethane	U	UJ JO	0.130	0.500	1	10/24/2019 05:08	WG1368527
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/24/2019 05:08	WG1368527
Tetrachloroethene	U		0.199	0.500	1	10/24/2019 05:08	WG1368527
Toluene	U		0.412	0.500	1	10/24/2019 05:08	WG1368527
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/24/2019 05:08	WG1368527
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/24/2019 05:08	WG1368527
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/24/2019 05:08	WG1368527
1,1,2-Trichloroethane	U	UJ JO J4	0.186	0.500	1	10/24/2019 05:08	WG1368527
Trichloroethene	U		0.153	0.500	1	10/24/2019 05:08	WG1368527
Trichlorofluoromethane	U		0.130	2.50	1	10/24/2019 05:08	WG1368527
1,2,3-Trichloropropane	U		0.247	2.50	1	10/24/2019 05:08	WG1368527
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/24/2019 05:08	WG1368527
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/24/2019 05:08	WG1368527
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/24/2019 05:08	WG1368527
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/24/2019 05:08	WG1368527
Vinyl chloride	U		0.118	0.500	1	10/24/2019 05:08	WG1368527
Xylenes, Total	U		0.316	1.50	1	10/24/2019 05:08	WG1368527
(S) Toluene-d8	99.4			80.0-120		10/24/2019 05:08	WG1368527
(S) 4-Bromofluorobenzene	102			77.0-126		10/24/2019 05:08	WG1368527
(S) 1,2-Dichloroethane-d4	114			70.0-130		10/24/2019 05:08	WG1368527

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/2/2019



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	628000		2710	20000	1	10/22/2019 05:51	WG1366027

Sample Narrative:

L1150336-02 WG1366027: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	13700		51.9	1000	1	10/16/2019 19:18	WG1363847
Nitrate	U		22.7	100	1	10/16/2019 19:18	WG1363847
Sulfate	9120		77.4	5000	1	10/16/2019 19:18	WG1363847

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	10400		102	1000	1	10/19/2019 19:06	WG1365601

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	14400		15.0	100	1	10/22/2019 14:48	WG1364631
Manganese	4100		0.250	5.00	1	10/22/2019 14:48	WG1364631

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	4950		0.287	0.678	1	10/17/2019 15:37	WG1364420
Ethane	25.6		0.296	1.29	1	10/17/2019 15:37	WG1364420
Ethene	6.99		0.422	1.27	1	10/17/2019 15:37	WG1364420

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		1.05	25.0	1	10/24/2019 05:29	WG1368527
Acrylonitrile	U		0.873	5.00	1	10/24/2019 05:29	WG1368527
Benzene	U		0.0896	0.500	1	10/24/2019 05:29	WG1368527
Bromobenzene	U		0.133	0.500	1	10/24/2019 05:29	WG1368527
Bromodichloromethane	U		0.0800	0.500	1	10/24/2019 05:29	WG1368527
Bromochloromethane	U		0.145	0.500	1	10/24/2019 05:29	WG1368527
Bromoform	U		0.186	0.500	1	10/24/2019 05:29	WG1368527
Bromomethane	U		0.157	2.50	1	10/24/2019 05:29	WG1368527
n-Butylbenzene	U		0.143	0.500	1	10/24/2019 05:29	WG1368527
sec-Butylbenzene	U		0.134	0.500	1	10/24/2019 05:29	WG1368527
tert-Butylbenzene	U		0.183	0.500	1	10/24/2019 05:29	WG1368527
Carbon disulfide	U		0.101	0.500	1	10/24/2019 05:29	WG1368527
Carbon tetrachloride	U		0.159	0.500	1	10/24/2019 05:29	WG1368527
Chlorobenzene	U		0.140	0.500	1	10/24/2019 05:29	WG1368527
Chlorodibromomethane	U	UJ JO	0.128	0.500	1	10/24/2019 05:29	WG1368527
Chloroethane	U		0.141	2.50	1	10/24/2019 05:29	WG1368527
Chloroform	U		0.0860	0.500	1	10/24/2019 05:29	WG1368527
Chloromethane	U		0.153	1.25	1	10/24/2019 05:29	WG1368527
2-Chlorotoluene	U		0.111	0.500	1	10/24/2019 05:29	WG1368527
4-Chlorotoluene	U		0.0972	0.500	1	10/24/2019 05:29	WG1368527

JC 12/2/2019

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/24/2019 05:29	WG1368527
1,2-Dibromoethane	U		0.193	0.500	1	10/24/2019 05:29	WG1368527
Dibromomethane	U		0.117	0.500	1	10/24/2019 05:29	WG1368527
1,2-Dichlorobenzene	U	UJ JO	0.101	0.500	1	10/24/2019 05:29	WG1368527
1,3-Dichlorobenzene	U	UJ JO J4	0.130	0.500	1	10/24/2019 05:29	WG1368527
1,4-Dichlorobenzene	U	UJ JO J4	0.121	0.500	1	10/24/2019 05:29	WG1368527
Dichlorodifluoromethane	U		0.127	2.50	1	10/24/2019 05:29	WG1368527
1,1-Dichloroethane	U		0.114	0.500	1	10/24/2019 05:29	WG1368527
1,2-Dichloroethane	U		0.108	0.500	1	10/24/2019 05:29	WG1368527
1,1-Dichloroethene	0.768		0.188	0.500	1	10/24/2019 05:29	WG1368527
cis-1,2-Dichloroethene	397		1.87	10.0	20	10/24/2019 20:51	WG1369128
trans-1,2-Dichloroethene	0.891		0.152	0.500	1	10/24/2019 05:29	WG1368527
1,2-Dichloropropane	U		0.190	0.500	1	10/24/2019 05:29	WG1368527
1,1-Dichloropropene	U		0.128	0.500	1	10/24/2019 05:29	WG1368527
1,3-Dichloropropane	U	UJ JO J4	0.147	1.00	1	10/24/2019 05:29	WG1368527
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/24/2019 05:29	WG1368527
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/24/2019 05:29	WG1368527
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/24/2019 05:29	WG1368527
2,2-Dichloropropane	U		0.0929	0.500	1	10/24/2019 05:29	WG1368527
Di-isopropyl ether	U		0.0924	0.500	1	10/24/2019 05:29	WG1368527
Ethylbenzene	U		0.158	0.500	1	10/24/2019 05:29	WG1368527
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/24/2019 05:29	WG1368527
2-Hexanone	U		0.757	5.00	1	10/24/2019 05:29	WG1368527
n-Hexane	U	UJ JO	0.305	5.00	1	10/24/2019 05:29	WG1368527
Iodomethane	U		0.377	10.0	1	10/24/2019 05:29	WG1368527
Isopropylbenzene	U		0.126	0.500	1	10/24/2019 05:29	WG1368527
p-Isopropyltoluene	U		0.138	0.500	1	10/24/2019 05:29	WG1368527
2-Butanone (MEK)	U		1.28	5.00	1	10/24/2019 05:29	WG1368527
Methylene Chloride	U		1.07	2.50	1	10/24/2019 05:29	WG1368527
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/24/2019 05:29	WG1368527
Methyl tert-butyl ether	U		0.102	0.500	1	10/24/2019 05:29	WG1368527
Naphthalene	U		0.174	2.50	1	10/24/2019 05:29	WG1368527
n-Propylbenzene	U		0.162	0.500	1	10/24/2019 05:29	WG1368527
Styrene	U		0.117	0.500	1	10/24/2019 05:29	WG1368527
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/24/2019 05:29	WG1368527
1,1,2,2-Tetrachloroethane	U	UJ JO	0.130	0.500	1	10/24/2019 05:29	WG1368527
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/24/2019 05:29	WG1368527
Tetrachloroethene	U		0.199	0.500	1	10/24/2019 05:29	WG1368527
Toluene	U		0.412	0.500	1	10/24/2019 05:29	WG1368527
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/24/2019 05:29	WG1368527
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/24/2019 05:29	WG1368527
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/24/2019 05:29	WG1368527
1,1,2-Trichloroethane	U	UJ JO J4	0.186	0.500	1	10/24/2019 05:29	WG1368527
Trichloroethene	1.03		0.153	0.500	1	10/24/2019 05:29	WG1368527
Trichlorofluoromethane	U		0.130	2.50	1	10/24/2019 05:29	WG1368527
1,2,3-Trichloropropane	U		0.247	2.50	1	10/24/2019 05:29	WG1368527
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/24/2019 05:29	WG1368527
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/24/2019 05:29	WG1368527
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/24/2019 05:29	WG1368527
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/24/2019 05:29	WG1368527
Vinyl chloride	109		0.118	0.500	1	10/24/2019 05:29	WG1368527
Xylenes, Total	U		0.316	1.50	1	10/24/2019 05:29	WG1368527
(S) Toluene-d8	102			80.0-120		10/24/2019 05:29	WG1368527
(S) Toluene-d8	110			80.0-120		10/24/2019 20:51	WG1369128
(S) 4-Bromofluorobenzene	104			77.0-126		10/24/2019 05:29	WG1368527
(S) 4-Bromofluorobenzene	112			77.0-126		10/24/2019 20:51	WG1369128

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	112			70.0-130		10/24/2019 05:29	WG1368527
(S) 1,2-Dichloroethane-d4	108			70.0-130		10/24/2019 20:51	WG1369128

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

JC 12/2/2019

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	114000		2710	20000	1	10/22/2019 05:58	WG1366027

Sample Narrative:

L1150336-03 WG1366027: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	18000		51.9	1000	1	10/16/2019 19:31	WG1363847
Nitrate	1630		22.7	100	1	10/16/2019 19:31	WG1363847
Sulfate	28000		77.4	5000	1	10/16/2019 19:31	WG1363847

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3340	B	102	1000	1	10/19/2019 19:28	WG1365601

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	2580		15.0	100	1	10/22/2019 14:52	WG1364631
Manganese	197		0.250	5.00	1	10/22/2019 14:52	WG1364631

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/18/2019 14:44	WG1365317
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	107			78.0-120		10/18/2019 14:44	WG1365317

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	U		0.287	0.678	1	10/17/2019 16:04	WG1364420
Ethane	U		0.296	1.29	1	10/17/2019 16:04	WG1364420
Ethene	U		0.422	1.27	1	10/17/2019 16:04	WG1364420

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U		1.05	25.0	1	10/24/2019 05:50	WG1368527
Acrylonitrile	U		0.873	5.00	1	10/24/2019 05:50	WG1368527
Benzene	U		0.0896	0.500	1	10/24/2019 05:50	WG1368527
Bromobenzene	U		0.133	0.500	1	10/24/2019 05:50	WG1368527
Bromodichloromethane	U		0.0800	0.500	1	10/24/2019 05:50	WG1368527
Bromochloromethane	U		0.145	0.500	1	10/24/2019 05:50	WG1368527
Bromoform	U		0.186	0.500	1	10/24/2019 05:50	WG1368527
Bromomethane	U		0.157	2.50	1	10/24/2019 05:50	WG1368527
n-Butylbenzene	U		0.143	0.500	1	10/24/2019 05:50	WG1368527
sec-Butylbenzene	U		0.134	0.500	1	10/24/2019 05:50	WG1368527
tert-Butylbenzene	U		0.183	0.500	1	10/24/2019 05:50	WG1368527
Carbon disulfide	U		0.101	0.500	1	10/24/2019 05:50	WG1368527
Carbon tetrachloride	U		0.159	0.500	1	10/24/2019 05:50	WG1368527

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/24/2019 05:50	WG1368527
Chlorodibromomethane	U	UJ JO	0.128	0.500	1	10/24/2019 05:50	WG1368527
Chloroethane	U		0.141	2.50	1	10/24/2019 05:50	WG1368527
Chloroform	U		0.0860	0.500	1	10/24/2019 05:50	WG1368527
Chloromethane	U		0.153	1.25	1	10/24/2019 05:50	WG1368527
2-Chlorotoluene	U		0.111	0.500	1	10/24/2019 05:50	WG1368527
4-Chlorotoluene	U		0.0972	0.500	1	10/24/2019 05:50	WG1368527
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/24/2019 05:50	WG1368527
1,2-Dibromoethane	U		0.193	0.500	1	10/24/2019 05:50	WG1368527
Dibromomethane	U		0.117	0.500	1	10/24/2019 05:50	WG1368527
1,2-Dichlorobenzene	U	UJ JO	0.101	0.500	1	10/24/2019 05:50	WG1368527
1,3-Dichlorobenzene	U	UJ JO J4	0.130	0.500	1	10/24/2019 05:50	WG1368527
1,4-Dichlorobenzene	U	UJ JO J4	0.121	0.500	1	10/24/2019 05:50	WG1368527
Dichlorodifluoromethane	U		0.127	2.50	1	10/24/2019 05:50	WG1368527
1,1-Dichloroethane	U		0.114	0.500	1	10/24/2019 05:50	WG1368527
1,2-Dichloroethane	U		0.108	0.500	1	10/24/2019 05:50	WG1368527
1,1-Dichloroethene	U		0.188	0.500	1	10/24/2019 05:50	WG1368527
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/24/2019 21:11	WG1369128
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/24/2019 05:50	WG1368527
1,2-Dichloropropane	U		0.190	0.500	1	10/24/2019 05:50	WG1368527
1,1-Dichloropropene	U		0.128	0.500	1	10/24/2019 05:50	WG1368527
1,3-Dichloropropane	U	UJ JO J4	0.147	1.00	1	10/24/2019 05:50	WG1368527
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/24/2019 05:50	WG1368527
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/24/2019 05:50	WG1368527
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/24/2019 05:50	WG1368527
2,2-Dichloropropane	U		0.0929	0.500	1	10/24/2019 05:50	WG1368527
Di-isopropyl ether	U		0.0924	0.500	1	10/24/2019 05:50	WG1368527
Ethylbenzene	U		0.158	0.500	1	10/24/2019 05:50	WG1368527
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/24/2019 05:50	WG1368527
2-Hexanone	U		0.757	5.00	1	10/24/2019 05:50	WG1368527
n-Hexane	U	UJ JO	0.305	5.00	1	10/24/2019 05:50	WG1368527
Iodomethane	U		0.377	10.0	1	10/24/2019 05:50	WG1368527
Isopropylbenzene	U		0.126	0.500	1	10/24/2019 05:50	WG1368527
p-Isopropyltoluene	U		0.138	0.500	1	10/24/2019 05:50	WG1368527
2-Butanone (MEK)	U		1.28	5.00	1	10/24/2019 05:50	WG1368527
Methylene Chloride	U		1.07	2.50	1	10/24/2019 05:50	WG1368527
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/24/2019 05:50	WG1368527
Methyl tert-butyl ether	U		0.102	0.500	1	10/24/2019 05:50	WG1368527
Naphthalene	U		0.174	2.50	1	10/24/2019 05:50	WG1368527
n-Propylbenzene	U		0.162	0.500	1	10/24/2019 05:50	WG1368527
Styrene	U		0.117	0.500	1	10/24/2019 05:50	WG1368527
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/24/2019 05:50	WG1368527
1,1,2,2-Tetrachloroethane	U	UJ JO	0.130	0.500	1	10/24/2019 05:50	WG1368527
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/24/2019 05:50	WG1368527
Tetrachloroethene	U		0.199	0.500	1	10/24/2019 05:50	WG1368527
Toluene	U		0.412	0.500	1	10/24/2019 05:50	WG1368527
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/24/2019 05:50	WG1368527
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/24/2019 05:50	WG1368527
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/24/2019 05:50	WG1368527
1,1,2-Trichloroethane	U	UJ JO J4	0.186	0.500	1	10/24/2019 05:50	WG1368527
Trichloroethene	U		0.153	0.500	1	10/24/2019 05:50	WG1368527
Trichlorofluoromethane	U		0.130	2.50	1	10/24/2019 05:50	WG1368527
1,2,3-Trichloropropane	U		0.247	2.50	1	10/24/2019 05:50	WG1368527
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/24/2019 05:50	WG1368527
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/24/2019 05:50	WG1368527
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/24/2019 05:50	WG1368527

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/24/2019 05:50	WG1368527
Vinyl chloride	U		0.118	0.500	1	10/24/2019 05:50	WG1368527
Xylenes, Total	U		0.316	1.50	1	10/24/2019 05:50	WG1368527
(S) Toluene-d8	101			80.0-120		10/24/2019 05:50	WG1368527
(S) Toluene-d8	112			80.0-120		10/24/2019 21:11	WG1369128
(S) 4-Bromofluorobenzene	103			77.0-126		10/24/2019 05:50	WG1368527
(S) 4-Bromofluorobenzene	116			77.0-126		10/24/2019 21:11	WG1369128
(S) 1,2-Dichloroethane-d4	113			70.0-130		10/24/2019 05:50	WG1368527
(S) 1,2-Dichloroethane-d4	107			70.0-130		10/24/2019 21:11	WG1369128

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/2/2019



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	210000		2710	20000	1	10/21/2019 23:52	WG1366029

Sample Narrative:

L1150336-04 WG1366029: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	7540		51.9	1000	1	10/16/2019 19:44	WG1363847
Nitrate	U		22.7	100	1	10/16/2019 19:44	WG1363847
Sulfate	3620	J	77.4	5000	1	10/16/2019 19:44	WG1363847

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	5120	B	102	1000	1	10/19/2019 21:17	WG1365601

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	407		15.0	100	1	10/22/2019 14:55	WG1364631
Manganese	335		0.250	5.00	1	10/22/2019 14:55	WG1364631

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	277		0.287	0.678	1	10/17/2019 15:42	WG1364420
Ethane	U		0.296	1.29	1	10/17/2019 15:42	WG1364420
Ethene	U		0.422	1.27	1	10/17/2019 15:42	WG1364420

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.30	J	1.05	25.0	1	10/24/2019 06:10	WG1368527
Acrylonitrile	U		0.873	5.00	1	10/24/2019 06:10	WG1368527
Benzene	U		0.0896	0.500	1	10/24/2019 06:10	WG1368527
Bromobenzene	U		0.133	0.500	1	10/24/2019 06:10	WG1368527
Bromodichloromethane	U		0.0800	0.500	1	10/24/2019 06:10	WG1368527
Bromochloromethane	U		0.145	0.500	1	10/24/2019 06:10	WG1368527
Bromoform	U		0.186	0.500	1	10/24/2019 06:10	WG1368527
Bromomethane	U		0.157	2.50	1	10/24/2019 06:10	WG1368527
n-Butylbenzene	U		0.143	0.500	1	10/24/2019 06:10	WG1368527
sec-Butylbenzene	U		0.134	0.500	1	10/24/2019 06:10	WG1368527
tert-Butylbenzene	U		0.183	0.500	1	10/24/2019 06:10	WG1368527
Carbon disulfide	U		0.101	0.500	1	10/24/2019 06:10	WG1368527
Carbon tetrachloride	U		0.159	0.500	1	10/24/2019 06:10	WG1368527
Chlorobenzene	U		0.140	0.500	1	10/24/2019 06:10	WG1368527
Chlorodibromomethane	U	UJ JO	0.128	0.500	1	10/24/2019 06:10	WG1368527
Chloroethane	U		0.141	2.50	1	10/24/2019 06:10	WG1368527
Chloroform	U		0.0860	0.500	1	10/24/2019 06:10	WG1368527
Chloromethane	U		0.153	1.25	1	10/24/2019 06:10	WG1368527
2-Chlorotoluene	U		0.111	0.500	1	10/24/2019 06:10	WG1368527
4-Chlorotoluene	U		0.0972	0.500	1	10/24/2019 06:10	WG1368527

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/24/2019 06:10	WG1368527
1,2-Dibromoethane	U		0.193	0.500	1	10/24/2019 06:10	WG1368527
Dibromomethane	U		0.117	0.500	1	10/24/2019 06:10	WG1368527
1,2-Dichlorobenzene	U	UJ JO	0.101	0.500	1	10/24/2019 06:10	WG1368527
1,3-Dichlorobenzene	U	UJ JO J4	0.130	0.500	1	10/24/2019 06:10	WG1368527
1,4-Dichlorobenzene	U	JO J4	0.121	0.500	1	10/24/2019 06:10	WG1368527
Dichlorodifluoromethane	U		0.127	2.50	1	10/24/2019 06:10	WG1368527
1,1-Dichloroethane	U		0.114	0.500	1	10/24/2019 06:10	WG1368527
1,2-Dichloroethane	U		0.108	0.500	1	10/24/2019 06:10	WG1368527
1,1-Dichloroethene	U		0.188	0.500	1	10/24/2019 06:10	WG1368527
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/24/2019 06:10	WG1368527
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/24/2019 06:10	WG1368527
1,2-Dichloropropane	U		0.190	0.500	1	10/24/2019 06:10	WG1368527
1,1-Dichloropropene	U		0.128	0.500	1	10/24/2019 06:10	WG1368527
1,3-Dichloropropane	U	UJ JO J4	0.147	1.00	1	10/24/2019 06:10	WG1368527
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/24/2019 06:10	WG1368527
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/24/2019 06:10	WG1368527
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/24/2019 06:10	WG1368527
2,2-Dichloropropane	U		0.0929	0.500	1	10/24/2019 06:10	WG1368527
Di-isopropyl ether	U		0.0924	0.500	1	10/24/2019 06:10	WG1368527
Ethylbenzene	U		0.158	0.500	1	10/24/2019 06:10	WG1368527
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/24/2019 06:10	WG1368527
2-Hexanone	U		0.757	5.00	1	10/24/2019 06:10	WG1368527
n-Hexane	U	UJ JO	0.305	5.00	1	10/24/2019 06:10	WG1368527
Iodomethane	U		0.377	10.0	1	10/24/2019 06:10	WG1368527
Isopropylbenzene	U		0.126	0.500	1	10/24/2019 06:10	WG1368527
p-Isopropyltoluene	U		0.138	0.500	1	10/24/2019 06:10	WG1368527
2-Butanone (MEK)	U		1.28	5.00	1	10/24/2019 06:10	WG1368527
Methylene Chloride	U		1.07	2.50	1	10/24/2019 06:10	WG1368527
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/24/2019 06:10	WG1368527
Methyl tert-butyl ether	U		0.102	0.500	1	10/24/2019 06:10	WG1368527
Naphthalene	U		0.174	2.50	1	10/24/2019 06:10	WG1368527
n-Propylbenzene	U		0.162	0.500	1	10/24/2019 06:10	WG1368527
Styrene	U		0.117	0.500	1	10/24/2019 06:10	WG1368527
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/24/2019 06:10	WG1368527
1,1,2,2-Tetrachloroethane	U	UJ JO	0.130	0.500	1	10/24/2019 06:10	WG1368527
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/24/2019 06:10	WG1368527
Tetrachloroethene	U		0.199	0.500	1	10/24/2019 06:10	WG1368527
Toluene	U		0.412	0.500	1	10/24/2019 06:10	WG1368527
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/24/2019 06:10	WG1368527
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/24/2019 06:10	WG1368527
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/24/2019 06:10	WG1368527
1,1,2-Trichloroethane	U	UJ JO J4	0.186	0.500	1	10/24/2019 06:10	WG1368527
Trichloroethene	U		0.153	0.500	1	10/24/2019 06:10	WG1368527
Trichlorofluoromethane	U		0.130	2.50	1	10/24/2019 06:10	WG1368527
1,2,3-Trichloropropane	U		0.247	2.50	1	10/24/2019 06:10	WG1368527
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/24/2019 06:10	WG1368527
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/24/2019 06:10	WG1368527
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/24/2019 06:10	WG1368527
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/24/2019 06:10	WG1368527
Vinyl chloride	U		0.118	0.500	1	10/24/2019 06:10	WG1368527
Xylenes, Total	U		0.316	1.50	1	10/24/2019 06:10	WG1368527
(S) Toluene-d8	99.8			80.0-120		10/24/2019 06:10	WG1368527
(S) 4-Bromofluorobenzene	104			77.0-126		10/24/2019 06:10	WG1368527
(S) 1,2-Dichloroethane-d4	114			70.0-130		10/24/2019 06:10	WG1368527

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/2/2019



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	187000		2710	20000	1	10/21/2019 23:59	WG1366029

Sample Narrative:

L1150336-05 WG1366029: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	8790		51.9	1000	1	10/16/2019 20:22	WG1363847
Nitrate	U		22.7	100	1	10/16/2019 20:22	WG1363847
Sulfate	80900		77.4	5000	1	10/16/2019 20:22	WG1363847

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2320	P	102	1000	1	10/19/2019 21:31	WG1365601

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	3810		15.0	100	1	10/22/2019 14:59	WG1364631
Manganese	608		0.250	5.00	1	10/22/2019 14:59	WG1364631

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/18/2019 15:07	WG1365317
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	107			78.0-120		10/18/2019 15:07	WG1365317

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	U		0.287	0.678	1	10/17/2019 15:44	WG1364420
Ethane	U		0.296	1.29	1	10/17/2019 15:44	WG1364420
Ethene	U		0.422	1.27	1	10/17/2019 15:44	WG1364420

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U		1.05	25.0	1	10/24/2019 06:31	WG1368527
Acrylonitrile	U		0.873	5.00	1	10/24/2019 06:31	WG1368527
Benzene	U		0.0896	0.500	1	10/24/2019 06:31	WG1368527
Bromobenzene	U		0.133	0.500	1	10/24/2019 06:31	WG1368527
Bromodichloromethane	U		0.0800	0.500	1	10/24/2019 06:31	WG1368527
Bromochloromethane	U		0.145	0.500	1	10/24/2019 06:31	WG1368527
Bromoform	U		0.186	0.500	1	10/24/2019 06:31	WG1368527
Bromomethane	U		0.157	2.50	1	10/24/2019 06:31	WG1368527
n-Butylbenzene	U		0.143	0.500	1	10/24/2019 06:31	WG1368527 JC 12/2/2019
sec-Butylbenzene	U		0.134	0.500	1	10/24/2019 06:31	WG1368527
tert-Butylbenzene	U		0.183	0.500	1	10/24/2019 06:31	WG1368527
Carbon disulfide	U		0.101	0.500	1	10/24/2019 06:31	WG1368527
Carbon tetrachloride	U		0.159	0.500	1	10/24/2019 06:31	WG1368527

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/24/2019 06:31	WG1368527
Chlorodibromomethane	U	UJ JO	0.128	0.500	1	10/24/2019 06:31	WG1368527
Chloroethane	U		0.141	2.50	1	10/24/2019 06:31	WG1368527
Chloroform	U		0.0860	0.500	1	10/24/2019 06:31	WG1368527
Chloromethane	U		0.153	1.25	1	10/24/2019 06:31	WG1368527
2-Chlorotoluene	U		0.111	0.500	1	10/24/2019 06:31	WG1368527
4-Chlorotoluene	U		0.0972	0.500	1	10/24/2019 06:31	WG1368527
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/24/2019 06:31	WG1368527
1,2-Dibromoethane	U		0.193	0.500	1	10/24/2019 06:31	WG1368527
Dibromomethane	U		0.117	0.500	1	10/24/2019 06:31	WG1368527
1,2-Dichlorobenzene	U	UJ JO	0.101	0.500	1	10/24/2019 06:31	WG1368527
1,3-Dichlorobenzene	U	UJ JO J4	0.130	0.500	1	10/24/2019 06:31	WG1368527
1,4-Dichlorobenzene	U	UJ JO J4	0.121	0.500	1	10/24/2019 06:31	WG1368527
Dichlorodifluoromethane	U		0.127	2.50	1	10/24/2019 06:31	WG1368527
1,1-Dichloroethane	U		0.114	0.500	1	10/24/2019 06:31	WG1368527
1,2-Dichloroethane	U		0.108	0.500	1	10/24/2019 06:31	WG1368527
1,1-Dichloroethene	U		0.188	0.500	1	10/24/2019 06:31	WG1368527
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/24/2019 06:31	WG1368527
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/24/2019 06:31	WG1368527
1,2-Dichloropropane	U		0.190	0.500	1	10/24/2019 06:31	WG1368527
1,1-Dichloropropene	U		0.128	0.500	1	10/24/2019 06:31	WG1368527
1,3-Dichloropropane	U	UJ JO J4	0.147	1.00	1	10/24/2019 06:31	WG1368527
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/24/2019 06:31	WG1368527
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/24/2019 06:31	WG1368527
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/24/2019 06:31	WG1368527
2,2-Dichloropropane	U		0.0929	0.500	1	10/24/2019 06:31	WG1368527
Di-isopropyl ether	U		0.0924	0.500	1	10/24/2019 06:31	WG1368527
Ethylbenzene	U		0.158	0.500	1	10/24/2019 06:31	WG1368527
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/24/2019 06:31	WG1368527
2-Hexanone	U		0.757	5.00	1	10/24/2019 06:31	WG1368527
n-Hexane	U	UJ JO	0.305	5.00	1	10/24/2019 06:31	WG1368527
Iodomethane	U		0.377	10.0	1	10/24/2019 06:31	WG1368527
Isopropylbenzene	U		0.126	0.500	1	10/24/2019 06:31	WG1368527
p-Isopropyltoluene	U		0.138	0.500	1	10/24/2019 06:31	WG1368527
2-Butanone (MEK)	U		1.28	5.00	1	10/24/2019 06:31	WG1368527
Methylene Chloride	U		1.07	2.50	1	10/24/2019 06:31	WG1368527
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/24/2019 06:31	WG1368527
Methyl tert-butyl ether	U		0.102	0.500	1	10/24/2019 06:31	WG1368527
Naphthalene	U		0.174	2.50	1	10/24/2019 06:31	WG1368527
n-Propylbenzene	U		0.162	0.500	1	10/24/2019 06:31	WG1368527
Styrene	U		0.117	0.500	1	10/24/2019 06:31	WG1368527
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/24/2019 06:31	WG1368527
1,1,2,2-Tetrachloroethane	U	UJ JO	0.130	0.500	1	10/24/2019 06:31	WG1368527
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/24/2019 06:31	WG1368527
Tetrachloroethene	U		0.199	0.500	1	10/24/2019 06:31	WG1368527
Toluene	U		0.412	0.500	1	10/24/2019 06:31	WG1368527
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/24/2019 06:31	WG1368527
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/24/2019 06:31	WG1368527
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/24/2019 06:31	WG1368527
1,1,2-Trichloroethane	U	UJ JO J4	0.186	0.500	1	10/24/2019 06:31	WG1368527
Trichloroethene	U		0.153	0.500	1	10/24/2019 06:31	WG1368527
Trichlorofluoromethane	U		0.130	2.50	1	10/24/2019 06:31	WG1368527
1,2,3-Trichloropropane	U		0.247	2.50	1	10/24/2019 06:31	WG1368527
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/24/2019 06:31	WG1368527
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/24/2019 06:31	WG1368527
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/24/2019 06:31	WG1368527

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/2/2019



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/24/2019 06:31	WG1368527
Vinyl chloride	U		0.118	0.500	1	10/24/2019 06:31	WG1368527
Xylenes, Total	U		0.316	1.50	1	10/24/2019 06:31	WG1368527
(S) Toluene-d8	99.6			80.0-120		10/24/2019 06:31	WG1368527
(S) 4-Bromofluorobenzene	105			77.0-126		10/24/2019 06:31	WG1368527
(S) 1,2-Dichloroethane-d4	114			70.0-130		10/24/2019 06:31	WG1368527

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/2/2019



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	239000		2710	20000	1	10/22/2019 00:07	WG1366029

Sample Narrative:

L1150336-06 WG1366029: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	31600		51.9	1000	1	10/16/2019 20:35	WG1363847
Nitrate	U		22.7	100	1	10/16/2019 20:35	WG1363847
Sulfate	73800		77.4	5000	1	10/16/2019 20:35	WG1363847

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2490	B	102	1000	1	10/19/2019 22:38	WG1365601

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	1160		15.0	100	1	10/22/2019 15:03	WG1364631
Manganese	320		0.250	5.00	1	10/22/2019 15:03	WG1364631

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/18/2019 15:31	WG1365317
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	107			78.0-120		10/18/2019 15:31	WG1365317

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	384		0.287	0.678	1	10/17/2019 15:50	WG1364420
Ethane	U		0.296	1.29	1	10/17/2019 15:50	WG1364420
Ethene	U		0.422	1.27	1	10/17/2019 15:50	WG1364420

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U		1.05	25.0	1	10/24/2019 06:52	WG1368527
Acrylonitrile	U		0.873	5.00	1	10/24/2019 06:52	WG1368527
Benzene	U		0.0896	0.500	1	10/24/2019 06:52	WG1368527
Bromobenzene	U		0.133	0.500	1	10/24/2019 06:52	WG1368527
Bromodichloromethane	U		0.0800	0.500	1	10/24/2019 06:52	WG1368527
Bromochloromethane	U		0.145	0.500	1	10/24/2019 06:52	WG1368527
Bromoform	U		0.186	0.500	1	10/24/2019 06:52	WG1368527
Bromomethane	U		0.157	2.50	1	10/24/2019 06:52	WG1368527
n-Butylbenzene	U		0.143	0.500	1	10/24/2019 06:52	WG1368527
sec-Butylbenzene	U		0.134	0.500	1	10/24/2019 06:52	WG1368527
tert-Butylbenzene	U		0.183	0.500	1	10/24/2019 06:52	WG1368527
Carbon disulfide	U		0.101	0.500	1	10/24/2019 06:52	WG1368527
Carbon tetrachloride	U		0.159	0.500	1	10/24/2019 06:52	WG1368527

JC 12/2/2019

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Collected date/time: 10/15/19 12:20

L1150336

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/24/2019 06:52	WG1368527
Chlorodibromomethane	U	UJ JO	0.128	0.500	1	10/24/2019 06:52	WG1368527
Chloroethane	U		0.141	2.50	1	10/24/2019 06:52	WG1368527
Chloroform	U		0.0860	0.500	1	10/24/2019 06:52	WG1368527
Chloromethane	U		0.153	1.25	1	10/24/2019 06:52	WG1368527
2-Chlorotoluene	U		0.111	0.500	1	10/24/2019 06:52	WG1368527
4-Chlorotoluene	U		0.0972	0.500	1	10/24/2019 06:52	WG1368527
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/24/2019 06:52	WG1368527
1,2-Dibromoethane	U		0.193	0.500	1	10/24/2019 06:52	WG1368527
Dibromomethane	U		0.117	0.500	1	10/24/2019 06:52	WG1368527
1,2-Dichlorobenzene	U	JO	0.101	0.500	1	10/24/2019 06:52	WG1368527
1,3-Dichlorobenzene	U	UJ JO J4	0.130	0.500	1	10/24/2019 06:52	WG1368527
1,4-Dichlorobenzene	U	JO J4	0.121	0.500	1	10/24/2019 06:52	WG1368527
Dichlorodifluoromethane	U		0.127	2.50	1	10/24/2019 06:52	WG1368527
1,1-Dichloroethane	U		0.114	0.500	1	10/24/2019 06:52	WG1368527
1,2-Dichloroethane	U		0.108	0.500	1	10/24/2019 06:52	WG1368527
1,1-Dichloroethene	U		0.188	0.500	1	10/24/2019 06:52	WG1368527
cis-1,2-Dichloroethene	0.408	J	0.0933	0.500	1	10/24/2019 06:52	WG1368527
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/24/2019 06:52	WG1368527
1,2-Dichloropropane	U		0.190	0.500	1	10/24/2019 06:52	WG1368527
1,1-Dichloropropene	U		0.128	0.500	1	10/24/2019 06:52	WG1368527
1,3-Dichloropropane	U	UJ JO J4	0.147	1.00	1	10/24/2019 06:52	WG1368527
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/24/2019 06:52	WG1368527
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/24/2019 06:52	WG1368527
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/24/2019 06:52	WG1368527
2,2-Dichloropropane	U		0.0929	0.500	1	10/24/2019 06:52	WG1368527
Di-isopropyl ether	U		0.0924	0.500	1	10/24/2019 06:52	WG1368527
Ethylbenzene	U		0.158	0.500	1	10/24/2019 06:52	WG1368527
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/24/2019 06:52	WG1368527
2-Hexanone	U		0.757	5.00	1	10/24/2019 06:52	WG1368527
n-Hexane	U	UJ JO	0.305	5.00	1	10/24/2019 06:52	WG1368527
Iodomethane	U		0.377	10.0	1	10/24/2019 06:52	WG1368527
Isopropylbenzene	U		0.126	0.500	1	10/24/2019 06:52	WG1368527
p-Isopropyltoluene	U		0.138	0.500	1	10/24/2019 06:52	WG1368527
2-Butanone (MEK)	U		1.28	5.00	1	10/24/2019 06:52	WG1368527
Methylene Chloride	U		1.07	2.50	1	10/24/2019 06:52	WG1368527
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/24/2019 06:52	WG1368527
Methyl tert-butyl ether	U		0.102	0.500	1	10/24/2019 06:52	WG1368527
Naphthalene	U		0.174	2.50	1	10/24/2019 06:52	WG1368527
n-Propylbenzene	U		0.162	0.500	1	10/24/2019 06:52	WG1368527
Styrene	U		0.117	0.500	1	10/24/2019 06:52	WG1368527
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/24/2019 06:52	WG1368527
1,1,2,2-Tetrachloroethane	U	UJ JO	0.130	0.500	1	10/24/2019 06:52	WG1368527
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/24/2019 06:52	WG1368527
Tetrachloroethene	U		0.199	0.500	1	10/24/2019 06:52	WG1368527
Toluene	U		0.412	0.500	1	10/24/2019 06:52	WG1368527
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/24/2019 06:52	WG1368527
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/24/2019 06:52	WG1368527
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/24/2019 06:52	WG1368527
1,1,2-Trichloroethane	U	UJ JO J4	0.186	0.500	1	10/24/2019 06:52	WG1368527
Trichloroethene	0.350	J	0.153	0.500	1	10/24/2019 06:52	WG1368527
Trichlorofluoromethane	U		0.130	2.50	1	10/24/2019 06:52	WG1368527
1,2,3-Trichloropropane	U		0.247	2.50	1	10/24/2019 06:52	WG1368527
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/24/2019 06:52	WG1368527
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/24/2019 06:52	WG1368527
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/24/2019 06:52	WG1368527

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/2/2019



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/24/2019 06:52	WG1368527
Vinyl chloride	7.36		0.118	0.500	1	10/24/2019 06:52	WG1368527
Xylenes, Total	U		0.316	1.50	1	10/24/2019 06:52	WG1368527
(S) Toluene-d8	99.4			80.0-120		10/24/2019 06:52	WG1368527
(S) 4-Bromofluorobenzene	102			77.0-126		10/24/2019 06:52	WG1368527
(S) 1,2-Dichloroethane-d4	113			70.0-130		10/24/2019 06:52	WG1368527

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/2/2019



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	465000		2710	20000	1	10/22/2019 00:15	WG1366029

Sample Narrative:

L1150336-07 WG1366029: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	19300		51.9	1000	1	10/16/2019 20:47	WG1363847
Nitrate	U		22.7	100	1	10/16/2019 20:47	WG1363847
Sulfate	73200		77.4	5000	1	10/16/2019 20:47	WG1363847

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	7050		102	1000	1	10/19/2019 23:00	WG1365601

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	1290		15.0	100	1	10/22/2019 15:07	WG1364631
Manganese	3430		0.250	5.00	1	10/22/2019 15:07	WG1364631

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	5020		0.287	0.678	1	10/17/2019 15:53	WG1364420
Ethane	U		0.296	1.29	1	10/17/2019 15:53	WG1364420
Ethene	U		0.422	1.27	1	10/17/2019 15:53	WG1364420

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.11	J	1.05	25.0	1	10/24/2019 07:12	WG1368527
Acrylonitrile	U		0.873	5.00	1	10/24/2019 07:12	WG1368527
Benzene	0.233	J	0.0896	0.500	1	10/24/2019 07:12	WG1368527
Bromobenzene	U		0.133	0.500	1	10/24/2019 07:12	WG1368527
Bromodichloromethane	U		0.0800	0.500	1	10/24/2019 07:12	WG1368527
Bromochloromethane	U		0.145	0.500	1	10/24/2019 07:12	WG1368527
Bromoform	U		0.186	0.500	1	10/24/2019 07:12	WG1368527
Bromomethane	U		0.157	2.50	1	10/24/2019 07:12	WG1368527
n-Butylbenzene	U		0.143	0.500	1	10/24/2019 07:12	WG1368527
sec-Butylbenzene	U		0.134	0.500	1	10/24/2019 07:12	WG1368527
tert-Butylbenzene	U		0.183	0.500	1	10/24/2019 07:12	WG1368527
Carbon disulfide	U		0.101	0.500	1	10/24/2019 07:12	WG1368527
Carbon tetrachloride	U		0.159	0.500	1	10/24/2019 07:12	WG1368527
Chlorobenzene	U		0.140	0.500	1	10/24/2019 07:12	WG1368527
Chlorodibromomethane	U	UJ JO	0.128	0.500	1	10/24/2019 07:12	WG1368527
Chloroethane	U		0.141	2.50	1	10/24/2019 07:12	WG1368527
Chloroform	U		0.0860	0.500	1	10/24/2019 07:12	WG1368527
Chloromethane	U		0.153	1.25	1	10/24/2019 07:12	WG1368527
2-Chlorotoluene	U		0.111	0.500	1	10/24/2019 07:12	WG1368527
4-Chlorotoluene	U		0.0972	0.500	1	10/24/2019 07:12	WG1368527

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/2/2019



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/24/2019 07:12	WG1368527
1,2-Dibromoethane	U		0.193	0.500	1	10/24/2019 07:12	WG1368527
Dibromomethane	U		0.117	0.500	1	10/24/2019 07:12	WG1368527
1,2-Dichlorobenzene	U	UJ JO	0.101	0.500	1	10/24/2019 07:12	WG1368527
1,3-Dichlorobenzene	U	UJ JO J4	0.130	0.500	1	10/24/2019 07:12	WG1368527
1,4-Dichlorobenzene	U	UJ JO J4	0.121	0.500	1	10/24/2019 07:12	WG1368527
Dichlorodifluoromethane	U		0.127	2.50	1	10/24/2019 07:12	WG1368527
1,1-Dichloroethane	U		0.114	0.500	1	10/24/2019 07:12	WG1368527
1,2-Dichloroethane	U		0.108	0.500	1	10/24/2019 07:12	WG1368527
1,1-Dichloroethene	5.01		0.188	0.500	1	10/24/2019 07:12	WG1368527
cis-1,2-Dichloroethene	574		4.67	25.0	50	10/24/2019 21:32	WG1369128
trans-1,2-Dichloroethene	3.86		0.152	0.500	1	10/24/2019 07:12	WG1368527
1,2-Dichloropropane	U		0.190	0.500	1	10/24/2019 07:12	WG1368527
1,1-Dichloropropene	U		0.128	0.500	1	10/24/2019 07:12	WG1368527
1,3-Dichloropropane	U	UJ JO J4	0.147	1.00	1	10/24/2019 07:12	WG1368527
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/24/2019 07:12	WG1368527
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/24/2019 07:12	WG1368527
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/24/2019 07:12	WG1368527
2,2-Dichloropropane	U		0.0929	0.500	1	10/24/2019 07:12	WG1368527
Di-isopropyl ether	U		0.0924	0.500	1	10/24/2019 07:12	WG1368527
Ethylbenzene	U		0.158	0.500	1	10/24/2019 07:12	WG1368527
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/24/2019 07:12	WG1368527
2-Hexanone	U		0.757	5.00	1	10/24/2019 07:12	WG1368527
n-Hexane	U	UJ JO	0.305	5.00	1	10/24/2019 07:12	WG1368527
Iodomethane	U		0.377	10.0	1	10/24/2019 07:12	WG1368527
Isopropylbenzene	U		0.126	0.500	1	10/24/2019 07:12	WG1368527
p-Isopropyltoluene	U		0.138	0.500	1	10/24/2019 07:12	WG1368527
2-Butanone (MEK)	U		1.28	5.00	1	10/24/2019 07:12	WG1368527
Methylene Chloride	U		1.07	2.50	1	10/24/2019 07:12	WG1368527
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/24/2019 07:12	WG1368527
Methyl tert-butyl ether	U		0.102	0.500	1	10/24/2019 07:12	WG1368527
Naphthalene	U		0.174	2.50	1	10/24/2019 07:12	WG1368527
n-Propylbenzene	U		0.162	0.500	1	10/24/2019 07:12	WG1368527
Styrene	U		0.117	0.500	1	10/24/2019 07:12	WG1368527
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/24/2019 07:12	WG1368527
1,1,2,2-Tetrachloroethane	U	UJ JO	0.130	0.500	1	10/24/2019 07:12	WG1368527
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/24/2019 07:12	WG1368527
Tetrachloroethene	1180		9.95	25.0	50	10/24/2019 21:32	WG1369128
Toluene	U		0.412	0.500	1	10/24/2019 07:12	WG1368527
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/24/2019 07:12	WG1368527
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/24/2019 07:12	WG1368527
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/24/2019 07:12	WG1368527
1,1,2-Trichloroethane	U	UJ JO J4	0.186	0.500	1	10/24/2019 07:12	WG1368527
Trichloroethene	498		7.65	25.0	50	10/24/2019 21:32	WG1369128
Trichlorofluoromethane	U		0.130	2.50	1	10/24/2019 07:12	WG1368527
1,2,3-Trichloropropane	U		0.247	2.50	1	10/24/2019 07:12	WG1368527
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/24/2019 07:12	WG1368527
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/24/2019 07:12	WG1368527
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/24/2019 07:12	WG1368527
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/24/2019 07:12	WG1368527
Vinyl chloride	0.853		0.118	0.500	1	10/24/2019 07:12	WG1368527
Xylenes, Total	U		0.316	1.50	1	10/24/2019 07:12	WG1368527
(S) Toluene-d8	98.6			80.0-120		10/24/2019 07:12	WG1368527
(S) Toluene-d8	112			80.0-120		10/24/2019 21:32	WG1369128
(S) 4-Bromofluorobenzene	107			77.0-126		10/24/2019 07:12	WG1368527
(S) 4-Bromofluorobenzene	112			77.0-126		10/24/2019 21:32	WG1369128

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/2/2019



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	114			70.0-130		10/24/2019 07:12	WG1368527
(S) 1,2-Dichloroethane-d4	110			70.0-130		10/24/2019 21:32	WG1369128

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/2/2019



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	174000		2710	20000	1	10/22/2019 00:22	WG1366029

Sample Narrative:

L1150336-08 WG1366029: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	10500		51.9	1000	1	10/16/2019 21:00	WG1363847
Nitrate	U		22.7	100	1	10/16/2019 21:00	WG1363847
Sulfate	8290		77.4	5000	1	10/16/2019 21:00	WG1363847

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2320	B	102	1000	1	10/19/2019 23:20	WG1365601

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	6770		15.0	100	1	10/22/2019 15:10	WG1364631
Manganese	420		0.250	5.00	1	10/22/2019 15:10	WG1364631

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/18/2019 18:42	WG1365317
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		10/18/2019 18:42	WG1365317

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	20.2		0.287	0.678	1	10/18/2019 13:10	WG1365165
Ethane	U		0.296	1.29	1	10/18/2019 13:10	WG1365165
Ethene	U		0.422	1.27	1	10/18/2019 13:10	WG1365165

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U	UJ JO	1.05	25.0	1	10/25/2019 22:30	WG1369955
Acrylonitrile	U		0.873	5.00	1	10/25/2019 22:30	WG1369955
Benzene	U		0.0896	0.500	1	10/25/2019 22:30	WG1369955
Bromobenzene	U	UJ JO	0.133	0.500	1	10/25/2019 22:30	WG1369955
Bromodichloromethane	U		0.0800	0.500	1	10/25/2019 22:30	WG1369955
Bromochloromethane	U		0.145	0.500	1	10/25/2019 22:30	WG1369955
Bromoform	U		0.186	0.500	1	10/25/2019 22:30	WG1369955
Bromomethane	U		0.157	2.50	1	10/25/2019 22:30	WG1369955
n-Butylbenzene	U		0.143	0.500	1	10/25/2019 22:30	WG1369955
sec-Butylbenzene	U		0.134	0.500	1	10/25/2019 22:30	WG1369955
tert-Butylbenzene	U		0.183	0.500	1	10/25/2019 22:30	WG1369955
Carbon disulfide	U		0.101	0.500	1	10/25/2019 22:30	WG1369955
Carbon tetrachloride	U		0.159	0.500	1	10/25/2019 22:30	WG1369955

JC 12/2/2019

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/15/19 14:25

L1150336

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/25/2019 22:30	WG1369955
Chlorodibromomethane	U		0.128	0.500	1	10/25/2019 22:30	WG1369955
Chloroethane	U		0.141	2.50	1	10/25/2019 22:30	WG1369955
Chloroform	U		0.0860	0.500	1	10/25/2019 22:30	WG1369955
Chloromethane	U	UJ JO	0.153	1.25	1	10/25/2019 22:30	WG1369955
2-Chlorotoluene	U		0.111	0.500	1	10/25/2019 22:30	WG1369955
4-Chlorotoluene	U		0.0972	0.500	1	10/25/2019 22:30	WG1369955
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/25/2019 22:30	WG1369955
1,2-Dibromoethane	U		0.193	0.500	1	10/25/2019 22:30	WG1369955
Dibromomethane	U		0.117	0.500	1	10/25/2019 22:30	WG1369955
1,2-Dichlorobenzene	U		0.101	0.500	1	10/25/2019 22:30	WG1369955
1,3-Dichlorobenzene	U		0.130	0.500	1	10/25/2019 22:30	WG1369955
1,4-Dichlorobenzene	U		0.121	0.500	1	10/25/2019 22:30	WG1369955
Dichlorodifluoromethane	U		0.127	2.50	1	10/25/2019 22:30	WG1369955
1,1-Dichloroethane	U		0.114	0.500	1	10/25/2019 22:30	WG1369955
1,2-Dichloroethane	U		0.108	0.500	1	10/25/2019 22:30	WG1369955
1,1-Dichloroethene	U		0.188	0.500	1	10/25/2019 22:30	WG1369955
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/25/2019 22:30	WG1369955
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/25/2019 22:30	WG1369955
1,2-Dichloropropane	U		0.190	0.500	1	10/25/2019 22:30	WG1369955
1,1-Dichloropropene	U		0.128	0.500	1	10/25/2019 22:30	WG1369955
1,3-Dichloropropane	U		0.147	1.00	1	10/25/2019 22:30	WG1369955
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/25/2019 22:30	WG1369955
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/25/2019 22:30	WG1369955
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/25/2019 22:30	WG1369955
2,2-Dichloropropane	U		0.0929	0.500	1	10/25/2019 22:30	WG1369955
Di-isopropyl ether	U		0.0924	0.500	1	10/25/2019 22:30	WG1369955
Ethylbenzene	U		0.158	0.500	1	10/25/2019 22:30	WG1369955
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/25/2019 22:30	WG1369955
2-Hexanone	U		0.757	5.00	1	10/25/2019 22:30	WG1369955
n-Hexane	U		0.305	5.00	1	10/25/2019 22:30	WG1369955
Iodomethane	U		0.377	10.0	1	10/25/2019 22:30	WG1369955
Isopropylbenzene	U		0.126	0.500	1	10/25/2019 22:30	WG1369955
p-Isopropyltoluene	U		0.138	0.500	1	10/25/2019 22:30	WG1369955
2-Butanone (MEK)	U		1.28	5.00	1	10/25/2019 22:30	WG1369955
Methylene Chloride	U		1.07	2.50	1	10/25/2019 22:30	WG1369955
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/25/2019 22:30	WG1369955
Methyl tert-butyl ether	U		0.102	0.500	1	10/25/2019 22:30	WG1369955
Naphthalene	U		0.174	2.50	1	10/25/2019 22:30	WG1369955
n-Propylbenzene	U		0.162	0.500	1	10/25/2019 22:30	WG1369955
Styrene	U		0.117	0.500	1	10/25/2019 22:30	WG1369955
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/25/2019 22:30	WG1369955
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/25/2019 22:30	WG1369955
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/25/2019 22:30	WG1369955
Tetrachloroethene	U		0.199	0.500	1	10/25/2019 22:30	WG1369955
Toluene	U		0.412	0.500	1	10/25/2019 22:30	WG1369955
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/25/2019 22:30	WG1369955
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/25/2019 22:30	WG1369955
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/25/2019 22:30	WG1369955
1,1,2-Trichloroethane	U		0.186	0.500	1	10/25/2019 22:30	WG1369955
Trichloroethene	U		0.153	0.500	1	10/25/2019 22:30	WG1369955
Trichlorofluoromethane	U		0.130	2.50	1	10/25/2019 22:30	WG1369955
1,2,3-Trichloropropane	U		0.247	2.50	1	10/25/2019 22:30	WG1369955
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/25/2019 22:30	WG1369955
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/25/2019 22:30	WG1369955
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/25/2019 22:30	WG1369955

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/2/2019



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/25/2019 22:30	WG1369955
Vinyl chloride	U		0.118	0.500	1	10/25/2019 22:30	WG1369955
Xylenes, Total	U		0.316	1.50	1	10/25/2019 22:30	WG1369955
<i>(S) Toluene-d8</i>	112			80.0-120		10/25/2019 22:30	WG1369955
<i>(S) 4-Bromofluorobenzene</i>	113			77.0-126		10/25/2019 22:30	WG1369955
<i>(S) 1,2-Dichloroethane-d4</i>	102			70.0-130		10/25/2019 22:30	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/2/2019



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	667000		2710	20000	1	10/22/2019 00:30	WG1366029

Sample Narrative:

L1150336-09 WG1366029: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	26100		51.9	1000	1	10/16/2019 21:13	WG1363847
Nitrate	U		22.7	100	1	10/16/2019 21:13	WG1363847
Sulfate	68700		77.4	5000	1	10/16/2019 21:13	WG1363847

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	11300		102	1000	1	10/19/2019 23:45	WG1365601

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	4600		15.0	100	1	10/22/2019 15:14	WG1364631
Manganese	1170		0.250	5.00	1	10/22/2019 15:14	WG1364631

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	365		31.6	100	1	10/18/2019 19:06	WG1365317
(S) a,a,a-Trifluorotoluene(FID)	108			78.0-120		10/18/2019 19:06	WG1365317

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	12900		2.87	6.78	10	10/18/2019 13:13	WG1365165
Ethane	34.1		0.296	1.29	1	10/17/2019 15:55	WG1364420
Ethene	29.6		0.422	1.27	1	10/17/2019 15:55	WG1364420

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch	
Acetone	1.21	J	J JO	1.05	25.0	1	10/25/2019 22:50	WG1369955
Acrylonitrile	U		0.873	5.00	1	10/25/2019 22:50	WG1369955	
Benzene	0.167	J	J	0.0896	0.500	1	10/25/2019 22:50	WG1369955
Bromobenzene	U	UJ	JO	0.133	0.500	1	10/25/2019 22:50	WG1369955
Bromodichloromethane	U		0.0800	0.500	1	10/25/2019 22:50	WG1369955	
Bromochloromethane	U		0.145	0.500	1	10/25/2019 22:50	WG1369955	
Bromoform	U		0.186	0.500	1	10/25/2019 22:50	WG1369955	
Bromomethane	U		0.157	2.50	1	10/25/2019 22:50	WG1369955	
n-Butylbenzene	U		0.143	0.500	1	10/25/2019 22:50	WG1369955	
sec-Butylbenzene	U		0.134	0.500	1	10/25/2019 22:50	WG1369955	
tert-Butylbenzene	U		0.183	0.500	1	10/25/2019 22:50	WG1369955	
Carbon disulfide	0.342	U	U	0.101	0.500	1	10/25/2019 22:50	WG1369955
Carbon tetrachloride	U		0.159	0.500	1	10/25/2019 22:50	WG1369955	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/2/2019



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/25/2019 22:50	WG1369955
Chlorodibromomethane	U		0.128	0.500	1	10/25/2019 22:50	WG1369955
Chloroethane	3.45		0.141	2.50	1	10/25/2019 22:50	WG1369955
Chloroform	U		0.0860	0.500	1	10/25/2019 22:50	WG1369955
Chloromethane	U	UJ JO	0.153	1.25	1	10/25/2019 22:50	WG1369955
2-Chlorotoluene	U		0.111	0.500	1	10/25/2019 22:50	WG1369955
4-Chlorotoluene	U		0.0972	0.500	1	10/25/2019 22:50	WG1369955
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/25/2019 22:50	WG1369955
1,2-Dibromoethane	U		0.193	0.500	1	10/25/2019 22:50	WG1369955
Dibromomethane	U		0.117	0.500	1	10/25/2019 22:50	WG1369955
1,2-Dichlorobenzene	U		0.101	0.500	1	10/25/2019 22:50	WG1369955
1,3-Dichlorobenzene	U		0.130	0.500	1	10/25/2019 22:50	WG1369955
1,4-Dichlorobenzene	U		0.121	0.500	1	10/25/2019 22:50	WG1369955
Dichlorodifluoromethane	U		0.127	2.50	1	10/25/2019 22:50	WG1369955
1,1-Dichloroethane	U		0.114	0.500	1	10/25/2019 22:50	WG1369955
1,2-Dichloroethane	U		0.108	0.500	1	10/25/2019 22:50	WG1369955
1,1-Dichloroethene	3.27		0.188	0.500	1	10/25/2019 22:50	WG1369955
cis-1,2-Dichloroethene	333		0.933	5.00	10	10/27/2019 15:29	WG1370146
trans-1,2-Dichloroethene	7.04		0.152	0.500	1	10/25/2019 22:50	WG1369955
1,2-Dichloropropane	U		0.190	0.500	1	10/25/2019 22:50	WG1369955
1,1-Dichloropropene	U		0.128	0.500	1	10/25/2019 22:50	WG1369955
1,3-Dichloropropane	U		0.147	1.00	1	10/25/2019 22:50	WG1369955
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/25/2019 22:50	WG1369955
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/25/2019 22:50	WG1369955
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/25/2019 22:50	WG1369955
2,2-Dichloropropane	U		0.0929	0.500	1	10/25/2019 22:50	WG1369955
Di-isopropyl ether	U		0.0924	0.500	1	10/25/2019 22:50	WG1369955
Ethylbenzene	U		0.158	0.500	1	10/25/2019 22:50	WG1369955
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/25/2019 22:50	WG1369955
2-Hexanone	U		0.757	5.00	1	10/25/2019 22:50	WG1369955
n-Hexane	U		0.305	5.00	1	10/25/2019 22:50	WG1369955
Iodomethane	U		0.377	10.0	1	10/25/2019 22:50	WG1369955
Isopropylbenzene	U		0.126	0.500	1	10/25/2019 22:50	WG1369955
p-Isopropyltoluene	U		0.138	0.500	1	10/25/2019 22:50	WG1369955
2-Butanone (MEK)	U		1.28	5.00	1	10/25/2019 22:50	WG1369955
Methylene Chloride	U		1.07	2.50	1	10/25/2019 22:50	WG1369955
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/25/2019 22:50	WG1369955
Methyl tert-butyl ether	U		0.102	0.500	1	10/25/2019 22:50	WG1369955
Naphthalene	U		0.174	2.50	1	10/25/2019 22:50	WG1369955
n-Propylbenzene	U		0.162	0.500	1	10/25/2019 22:50	WG1369955
Styrene	U		0.117	0.500	1	10/25/2019 22:50	WG1369955
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/25/2019 22:50	WG1369955
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/25/2019 22:50	WG1369955
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/25/2019 22:50	WG1369955
Tetrachloroethene	41.7		0.199	0.500	1	10/25/2019 22:50	WG1369955
Toluene	0.572		0.412	0.500	1	10/25/2019 22:50	WG1369955
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/25/2019 22:50	WG1369955
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/25/2019 22:50	WG1369955
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/25/2019 22:50	WG1369955
1,1,2-Trichloroethane	U		0.186	0.500	1	10/25/2019 22:50	WG1369955
Trichloroethene	138		0.153	0.500	1	10/25/2019 22:50	WG1369955
Trichlorofluoromethane	U		0.130	2.50	1	10/25/2019 22:50	WG1369955
1,2,3-Trichloropropane	U		0.247	2.50	1	10/25/2019 22:50	WG1369955
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/25/2019 22:50	WG1369955
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/25/2019 22:50	WG1369955
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/25/2019 22:50	WG1369955

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/2/2019



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/25/2019 22:50	WG1369955
Vinyl chloride	216		1.18	5.00	10	10/27/2019 15:29	WG1370146
Xylenes, Total	U		0.316	1.50	1	10/25/2019 22:50	WG1369955
(S) Toluene-d8	111			80.0-120		10/25/2019 22:50	WG1369955
(S) Toluene-d8	95.1			80.0-120		10/27/2019 15:29	WG1370146
(S) 4-Bromofluorobenzene	112			77.0-126		10/25/2019 22:50	WG1369955
(S) 4-Bromofluorobenzene	92.2			77.0-126		10/27/2019 15:29	WG1370146
(S) 1,2-Dichloroethane-d4	104			70.0-130		10/25/2019 22:50	WG1369955
(S) 1,2-Dichloroethane-d4	101			70.0-130		10/27/2019 15:29	WG1370146

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/2/2019



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	267000		2710	20000	1	10/22/2019 16:15	WG1366946

Sample Narrative:

L1150936-01 WG1366946: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	16100		51.9	1000	1	10/17/2019 16:54	WG1364616
Nitrate	4120		22.7	100	1	10/17/2019 16:54	WG1364616
Sulfate	94300		77.4	5000	1	10/17/2019 16:54	WG1364616

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3660	B	102	1000	1	10/18/2019 21:14	WG1365383

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	119		15.0	100	1	10/23/2019 14:11	WG1366325
Manganese	71.6		0.250	5.00	1	10/23/2019 14:11	WG1366325

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/19/2019 04:53	WG1365594
(S) a,a,a-Trifluorotoluene(FID)	108			78.0-120		10/19/2019 04:53	WG1365594

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	36.1		0.287	0.678	1	10/18/2019 11:50	WG1365164
Ethane	17.5		0.296	1.29	1	10/18/2019 11:50	WG1365164
Ethene	U		0.422	1.27	1	10/18/2019 11:50	WG1365164

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	1.06	U	1.05	25.0	1	10/25/2019 23:11	WG1369955
Acrylonitrile	U		0.873	5.00	1	10/25/2019 23:11	WG1369955
Benzene	U		0.0896	0.500	1	10/25/2019 23:11	WG1369955
Bromobenzene	U	UJ	0.133	0.500	1	10/25/2019 23:11	WG1369955
Bromodichloromethane	U		0.0800	0.500	1	10/25/2019 23:11	WG1369955
Bromochloromethane	U		0.145	0.500	1	10/25/2019 23:11	WG1369955
Bromoform	U		0.186	0.500	1	10/25/2019 23:11	WG1369955
Bromomethane	U		0.157	2.50	1	10/25/2019 23:11	WG1369955
n-Butylbenzene	U		0.143	0.500	1	10/25/2019 23:11	WG1369955
sec-Butylbenzene	U		0.134	0.500	1	10/25/2019 23:11	WG1369955
tert-Butylbenzene	U		0.183	0.500	1	10/25/2019 23:11	WG1369955
Carbon disulfide	U		0.101	0.500	1	10/25/2019 23:11	WG1369955
Carbon tetrachloride	U		0.159	0.500	1	10/25/2019 23:11	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/16/19 10:15

L1150936

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/25/2019 23:11	WG1369955
Chlorodibromomethane	U		0.128	0.500	1	10/25/2019 23:11	WG1369955
Chloroethane	U		0.141	2.50	1	10/25/2019 23:11	WG1369955
Chloroform	U		0.0860	0.500	1	10/25/2019 23:11	WG1369955
Chloromethane	U	UJ JO	0.153	1.25	1	10/25/2019 23:11	WG1369955
2-Chlorotoluene	U		0.111	0.500	1	10/25/2019 23:11	WG1369955
4-Chlorotoluene	U		0.0972	0.500	1	10/25/2019 23:11	WG1369955
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/25/2019 23:11	WG1369955
1,2-Dibromoethane	U		0.193	0.500	1	10/25/2019 23:11	WG1369955
Dibromomethane	U		0.117	0.500	1	10/25/2019 23:11	WG1369955
1,2-Dichlorobenzene	U		0.101	0.500	1	10/25/2019 23:11	WG1369955
1,3-Dichlorobenzene	U		0.130	0.500	1	10/25/2019 23:11	WG1369955
1,4-Dichlorobenzene	U		0.121	0.500	1	10/25/2019 23:11	WG1369955
Dichlorodifluoromethane	U		0.127	2.50	1	10/25/2019 23:11	WG1369955
1,1-Dichloroethane	U		0.114	0.500	1	10/25/2019 23:11	WG1369955
1,2-Dichloroethane	U		0.108	0.500	1	10/25/2019 23:11	WG1369955
1,1-Dichloroethene	U		0.188	0.500	1	10/25/2019 23:11	WG1369955
cis-1,2-Dichloroethene	36.2		0.0933	0.500	1	10/25/2019 23:11	WG1369955
trans-1,2-Dichloroethene	0.160	U J	0.152	0.500	1	10/25/2019 23:11	WG1369955
1,2-Dichloropropane	U		0.190	0.500	1	10/25/2019 23:11	WG1369955
1,1-Dichloropropene	U		0.128	0.500	1	10/25/2019 23:11	WG1369955
1,3-Dichloropropane	U		0.147	1.00	1	10/25/2019 23:11	WG1369955
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/25/2019 23:11	WG1369955
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/25/2019 23:11	WG1369955
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/25/2019 23:11	WG1369955
2,2-Dichloropropane	U		0.0929	0.500	1	10/25/2019 23:11	WG1369955
Di-isopropyl ether	U		0.0924	0.500	1	10/25/2019 23:11	WG1369955
Ethylbenzene	U		0.158	0.500	1	10/25/2019 23:11	WG1369955
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/25/2019 23:11	WG1369955
2-Hexanone	U		0.757	5.00	1	10/25/2019 23:11	WG1369955
n-Hexane	U		0.305	5.00	1	10/25/2019 23:11	WG1369955
Iodomethane	U		0.377	10.0	1	10/25/2019 23:11	WG1369955
Isopropylbenzene	U		0.126	0.500	1	10/25/2019 23:11	WG1369955
p-Isopropyltoluene	U		0.138	0.500	1	10/25/2019 23:11	WG1369955
2-Butanone (MEK)	U		1.28	5.00	1	10/25/2019 23:11	WG1369955
Methylene Chloride	U		1.07	2.50	1	10/25/2019 23:11	WG1369955
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/25/2019 23:11	WG1369955
Methyl tert-butyl ether	U		0.102	0.500	1	10/25/2019 23:11	WG1369955
Naphthalene	U		0.174	2.50	1	10/25/2019 23:11	WG1369955
n-Propylbenzene	U		0.162	0.500	1	10/25/2019 23:11	WG1369955
Styrene	U		0.117	0.500	1	10/25/2019 23:11	WG1369955
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/25/2019 23:11	WG1369955
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/25/2019 23:11	WG1369955
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/25/2019 23:11	WG1369955
Tetrachloroethene	121		0.199	0.500	1	10/25/2019 23:11	WG1369955
Toluene	U		0.412	0.500	1	10/25/2019 23:11	WG1369955
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/25/2019 23:11	WG1369955
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/25/2019 23:11	WG1369955
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/25/2019 23:11	WG1369955
1,1,2-Trichloroethane	U		0.186	0.500	1	10/25/2019 23:11	WG1369955
Trichloroethene	27.6		0.153	0.500	1	10/25/2019 23:11	WG1369955
Trichlorofluoromethane	U		0.130	2.50	1	10/25/2019 23:11	WG1369955
1,2,3-Trichloropropane	U		0.247	2.50	1	10/25/2019 23:11	WG1369955
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/25/2019 23:11	WG1369955
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/25/2019 23:11	WG1369955
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/25/2019 23:11	WG1369955

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

12/9/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/25/2019 23:11	WG1369955
Vinyl chloride	U		0.118	0.500	1	10/25/2019 23:11	WG1369955
Xylenes, Total	U		0.316	1.50	1	10/25/2019 23:11	WG1369955
<i>(S) Toluene-d8</i>	110			80.0-120		10/25/2019 23:11	WG1369955
<i>(S) 4-Bromofluorobenzene</i>	113			77.0-126		10/25/2019 23:11	WG1369955
<i>(S) 1,2-Dichloroethane-d4</i>	104			70.0-130		10/25/2019 23:11	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

12/9/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	327000		2710	20000	1	10/22/2019 16:21	WG1366946

Sample Narrative:

L1150936-02 WG1366946: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	24500		51.9	1000	1	10/17/2019 17:58	WG1364616
Nitrate	33.0	J	22.7	100	1	10/17/2019 17:58	WG1364616
Sulfate	20400		77.4	5000	1	10/17/2019 17:58	WG1364616

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	4460	B	102	1000	1	10/18/2019 22:18	WG1365383

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	5460		15.0	100	1	10/23/2019 14:47	WG1366325
Manganese	350		0.250	5.00	1	10/23/2019 14:47	WG1366325

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/19/2019 05:17	WG1365594
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		10/19/2019 05:17	WG1365594

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	115		0.287	0.678	1	10/18/2019 11:52	WG1365164
Ethane	20.1		0.296	1.29	1	10/18/2019 11:52	WG1365164
Ethene	7.24		0.422	1.27	1	10/18/2019 11:52	WG1365164

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U	UJ JO	1.05	25.0	1	10/25/2019 23:31	WG1369955
Acrylonitrile	U		0.873	5.00	1	10/25/2019 23:31	WG1369955 12/9/19
Benzene	U		0.0896	0.500	1	10/25/2019 23:31	WG1369955
Bromobenzene	U	UJ JO	0.133	0.500	1	10/25/2019 23:31	WG1369955
Bromodichloromethane	U		0.0800	0.500	1	10/25/2019 23:31	WG1369955
Bromochloromethane	U		0.145	0.500	1	10/25/2019 23:31	WG1369955
Bromoform	U		0.186	0.500	1	10/25/2019 23:31	WG1369955
Bromomethane	U		0.157	2.50	1	10/25/2019 23:31	WG1369955
n-Butylbenzene	U		0.143	0.500	1	10/25/2019 23:31	WG1369955
sec-Butylbenzene	U		0.134	0.500	1	10/25/2019 23:31	WG1369955
tert-Butylbenzene	U		0.183	0.500	1	10/25/2019 23:31	WG1369955
Carbon disulfide	U		0.101	0.500	1	10/25/2019 23:31	WG1369955
Carbon tetrachloride	U		0.159	0.500	1	10/25/2019 23:31	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/16/19 10:30

L1150936

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/25/2019 23:31	WG1369955
Chlorodibromomethane	U		0.128	0.500	1	10/25/2019 23:31	WG1369955
Chloroethane	U		0.141	2.50	1	10/25/2019 23:31	WG1369955
Chloroform	U		0.0860	0.500	1	10/25/2019 23:31	WG1369955
Chloromethane	U	UJ JO	0.153	1.25	1	10/25/2019 23:31	WG1369955
2-Chlorotoluene	U		0.111	0.500	1	10/25/2019 23:31	WG1369955
4-Chlorotoluene	U		0.0972	0.500	1	10/25/2019 23:31	WG1369955
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/25/2019 23:31	WG1369955
1,2-Dibromoethane	U		0.193	0.500	1	10/25/2019 23:31	WG1369955
Dibromomethane	U		0.117	0.500	1	10/25/2019 23:31	WG1369955
1,2-Dichlorobenzene	U		0.101	0.500	1	10/25/2019 23:31	WG1369955
1,3-Dichlorobenzene	U		0.130	0.500	1	10/25/2019 23:31	WG1369955
1,4-Dichlorobenzene	U		0.121	0.500	1	10/25/2019 23:31	WG1369955
Dichlorodifluoromethane	U		0.127	2.50	1	10/25/2019 23:31	WG1369955
1,1-Dichloroethane	U		0.114	0.500	1	10/25/2019 23:31	WG1369955
1,2-Dichloroethane	U		0.108	0.500	1	10/25/2019 23:31	WG1369955
1,1-Dichloroethene	U		0.188	0.500	1	10/25/2019 23:31	WG1369955
cis-1,2-Dichloroethene	0.848		0.0933	0.500	1	10/25/2019 23:31	WG1369955
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/25/2019 23:31	WG1369955
1,2-Dichloropropane	U		0.190	0.500	1	10/25/2019 23:31	WG1369955
1,1-Dichloropropene	U		0.128	0.500	1	10/25/2019 23:31	WG1369955
1,3-Dichloropropane	U		0.147	1.00	1	10/25/2019 23:31	WG1369955
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/25/2019 23:31	WG1369955
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/25/2019 23:31	WG1369955
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/25/2019 23:31	WG1369955
2,2-Dichloropropane	U		0.0929	0.500	1	10/25/2019 23:31	WG1369955
Di-isopropyl ether	U		0.0924	0.500	1	10/25/2019 23:31	WG1369955
Ethylbenzene	U		0.158	0.500	1	10/25/2019 23:31	WG1369955
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/25/2019 23:31	WG1369955
2-Hexanone	U		0.757	5.00	1	10/25/2019 23:31	WG1369955
n-Hexane	U		0.305	5.00	1	10/25/2019 23:31	WG1369955
Iodomethane	U		0.377	10.0	1	10/25/2019 23:31	WG1369955
Isopropylbenzene	U		0.126	0.500	1	10/25/2019 23:31	WG1369955
p-Isopropyltoluene	U		0.138	0.500	1	10/25/2019 23:31	WG1369955
2-Butanone (MEK)	U		1.28	5.00	1	10/25/2019 23:31	WG1369955
Methylene Chloride	U		1.07	2.50	1	10/25/2019 23:31	WG1369955
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/25/2019 23:31	WG1369955
Methyl tert-butyl ether	U		0.102	0.500	1	10/25/2019 23:31	WG1369955
Naphthalene	U		0.174	2.50	1	10/25/2019 23:31	WG1369955
n-Propylbenzene	U		0.162	0.500	1	10/25/2019 23:31	WG1369955
Styrene	U		0.117	0.500	1	10/25/2019 23:31	WG1369955
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/25/2019 23:31	WG1369955
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/25/2019 23:31	WG1369955
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/25/2019 23:31	WG1369955
Tetrachloroethene	U		0.199	0.500	1	10/25/2019 23:31	WG1369955
Toluene	U		0.412	0.500	1	10/25/2019 23:31	WG1369955
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/25/2019 23:31	WG1369955
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/25/2019 23:31	WG1369955
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/25/2019 23:31	WG1369955
1,1,2-Trichloroethane	U		0.186	0.500	1	10/25/2019 23:31	WG1369955
Trichloroethene	0.318	J	0.153	0.500	1	10/25/2019 23:31	WG1369955
Trichlorofluoromethane	U		0.130	2.50	1	10/25/2019 23:31	WG1369955
1,2,3-Trichloropropane	U		0.247	2.50	1	10/25/2019 23:31	WG1369955
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/25/2019 23:31	WG1369955
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/25/2019 23:31	WG1369955
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/25/2019 23:31	WG1369955

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

12/9/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/25/2019 23:31	WG1369955
Vinyl chloride	2.18		0.118	0.500	1	10/25/2019 23:31	WG1369955
Xylenes, Total	U		0.316	1.50	1	10/25/2019 23:31	WG1369955
<i>(S) Toluene-d8</i>	110			80.0-120		10/25/2019 23:31	WG1369955
<i>(S) 4-Bromofluorobenzene</i>	111			77.0-126		10/25/2019 23:31	WG1369955
<i>(S) 1,2-Dichloroethane-d4</i>	103			70.0-130		10/25/2019 23:31	WG1369955

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

12/9/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	812000		2710	20000	1	10/22/2019 16:38	WG1366946

Sample Narrative:

L1150936-03 WG1366946: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	14900		51.9	1000	1	10/17/2019 18:11	WG1364616
Nitrate	U		22.7	100	1	10/17/2019 18:11	WG1364616
Sulfate	15900		77.4	5000	1	10/17/2019 18:11	WG1364616

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	4760	B	102	1000	1	10/18/2019 22:37	WG1365383

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	5400		15.0	100	1	10/23/2019 14:51	WG1366325
Manganese	3440		0.250	5.00	1	10/23/2019 14:51	WG1366325

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/19/2019 05:41	WG1365594
(S) a,a,a-Trifluorotoluene(FID)	108			78.0-120		10/19/2019 05:41	WG1365594

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	766		0.287	0.678	1	10/18/2019 11:54	WG1365164
Ethane	47.8		0.296	1.29	1	10/18/2019 11:54	WG1365164
Ethene	U		0.422	1.27	1	10/18/2019 11:54	WG1365164

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch	
Acetone	1.46	U	J JO	1.05	25.0	1	10/25/2019 23:51	WG1369955
Acrylonitrile	U		0.873	5.00	1	10/25/2019 23:51	WG1369955	
Benzene	0.380		J	0.0896	0.500	1	10/25/2019 23:51	WG1369955
Bromobenzene	U	UJ	JO	0.133	0.500	1	10/25/2019 23:51	WG1369955
Bromodichloromethane	U		0.0800	0.500	1	10/25/2019 23:51	WG1369955	
Bromochloromethane	U		0.145	0.500	1	10/25/2019 23:51	WG1369955	
Bromoform	U		0.186	0.500	1	10/25/2019 23:51	WG1369955	
Bromomethane	U		0.157	2.50	1	10/25/2019 23:51	WG1369955	
n-Butylbenzene	U		0.143	0.500	1	10/25/2019 23:51	WG1369955	
sec-Butylbenzene	U		0.134	0.500	1	10/25/2019 23:51	WG1369955	
tert-Butylbenzene	U		0.183	0.500	1	10/25/2019 23:51	WG1369955	
Carbon disulfide	U		0.101	0.500	1	10/25/2019 23:51	WG1369955	
Carbon tetrachloride	U		0.159	0.500	1	10/25/2019 23:51	WG1369955	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/25/2019 23:51	WG1369955
Chlorodibromomethane	U		0.128	0.500	1	10/25/2019 23:51	WG1369955
Chloroethane	U		0.141	2.50	1	10/25/2019 23:51	WG1369955
Chloroform	U		0.0860	0.500	1	10/25/2019 23:51	WG1369955
Chloromethane	U	UJ JO	0.153	1.25	1	10/25/2019 23:51	WG1369955
2-Chlorotoluene	U		0.111	0.500	1	10/25/2019 23:51	WG1369955
4-Chlorotoluene	U		0.0972	0.500	1	10/25/2019 23:51	WG1369955
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/25/2019 23:51	WG1369955
1,2-Dibromoethane	U		0.193	0.500	1	10/25/2019 23:51	WG1369955
Dibromomethane	U		0.117	0.500	1	10/25/2019 23:51	WG1369955
1,2-Dichlorobenzene	U		0.101	0.500	1	10/25/2019 23:51	WG1369955
1,3-Dichlorobenzene	U		0.130	0.500	1	10/25/2019 23:51	WG1369955
1,4-Dichlorobenzene	U		0.121	0.500	1	10/25/2019 23:51	WG1369955
Dichlorodifluoromethane	U		0.127	2.50	1	10/25/2019 23:51	WG1369955
1,1-Dichloroethane	U		0.114	0.500	1	10/25/2019 23:51	WG1369955
1,2-Dichloroethane	U		0.108	0.500	1	10/25/2019 23:51	WG1369955
1,1-Dichloroethene	U		0.188	0.500	1	10/25/2019 23:51	WG1369955
cis-1,2-Dichloroethene	50.4		0.0933	0.500	1	10/25/2019 23:51	WG1369955
trans-1,2-Dichloroethene	0.282	U J	0.152	0.500	1	10/25/2019 23:51	WG1369955
1,2-Dichloropropane	U		0.190	0.500	1	10/25/2019 23:51	WG1369955
1,1-Dichloropropene	U		0.128	0.500	1	10/25/2019 23:51	WG1369955
1,3-Dichloropropane	U		0.147	1.00	1	10/25/2019 23:51	WG1369955
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/25/2019 23:51	WG1369955
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/25/2019 23:51	WG1369955
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/25/2019 23:51	WG1369955
2,2-Dichloropropane	U		0.0929	0.500	1	10/25/2019 23:51	WG1369955
Di-isopropyl ether	U		0.0924	0.500	1	10/25/2019 23:51	WG1369955
Ethylbenzene	U		0.158	0.500	1	10/25/2019 23:51	WG1369955
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/25/2019 23:51	WG1369955
2-Hexanone	U		0.757	5.00	1	10/25/2019 23:51	WG1369955
n-Hexane	U		0.305	5.00	1	10/25/2019 23:51	WG1369955
Iodomethane	U		0.377	10.0	1	10/25/2019 23:51	WG1369955
Isopropylbenzene	U		0.126	0.500	1	10/25/2019 23:51	WG1369955
p-Isopropyltoluene	U		0.138	0.500	1	10/25/2019 23:51	WG1369955
2-Butanone (MEK)	U		1.28	5.00	1	10/25/2019 23:51	WG1369955
Methylene Chloride	U		1.07	2.50	1	10/25/2019 23:51	WG1369955
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/25/2019 23:51	WG1369955 12/9/19
Methyl tert-butyl ether	U		0.102	0.500	1	10/25/2019 23:51	WG1369955
Naphthalene	U		0.174	2.50	1	10/25/2019 23:51	WG1369955
n-Propylbenzene	U		0.162	0.500	1	10/25/2019 23:51	WG1369955
Styrene	U		0.117	0.500	1	10/25/2019 23:51	WG1369955
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/25/2019 23:51	WG1369955
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/25/2019 23:51	WG1369955
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/25/2019 23:51	WG1369955
Tetrachloroethene	U		0.199	0.500	1	10/25/2019 23:51	WG1369955
Toluene	U		0.412	0.500	1	10/25/2019 23:51	WG1369955
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/25/2019 23:51	WG1369955
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/25/2019 23:51	WG1369955
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/25/2019 23:51	WG1369955
1,1,2-Trichloroethane	U		0.186	0.500	1	10/25/2019 23:51	WG1369955
Trichloroethene	0.360	J	0.153	0.500	1	10/25/2019 23:51	WG1369955
Trichlorofluoromethane	U		0.130	2.50	1	10/25/2019 23:51	WG1369955
1,2,3-Trichloropropane	U		0.247	2.50	1	10/25/2019 23:51	WG1369955
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/25/2019 23:51	WG1369955
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/25/2019 23:51	WG1369955
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/25/2019 23:51	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/25/2019 23:51	WG1369955
Vinyl chloride	11.3		0.118	0.500	1	10/25/2019 23:51	WG1369955
Xylenes, Total	U		0.316	1.50	1	10/25/2019 23:51	WG1369955
<i>(S) Toluene-d8</i>	112			80.0-120		10/25/2019 23:51	WG1369955
<i>(S) 4-Bromofluorobenzene</i>	112			77.0-126		10/25/2019 23:51	WG1369955
<i>(S) 1,2-Dichloroethane-d4</i>	102			70.0-130		10/25/2019 23:51	WG1369955

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

12/9/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	163000		2710	20000	1	10/22/2019 16:45	WG1366946

Sample Narrative:

L1150936-04 WG1366946: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	18000		51.9	1000	1	10/17/2019 18:23	WG1364616
Nitrate	32.6	J	22.7	100	1	10/17/2019 18:23	WG1364616
Sulfate	198000		387	25000	5	10/17/2019 18:36	WG1364616

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	4480	B	102	1000	1	10/19/2019 00:24	WG1365383

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	2240		15.0	100	1	10/23/2019 14:54	WG1366325
Manganese	498		0.250	5.00	1	10/23/2019 14:54	WG1366325

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/19/2019 06:05	WG1365594
(S) a,a,a-Trifluorotoluene(FID)	108			78.0-120		10/19/2019 06:05	WG1365594

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	2050		0.287	0.678	1	10/18/2019 11:57	WG1365164
Ethane	6.03		0.296	1.29	1	10/18/2019 11:57	WG1365164
Ethene	U		0.422	1.27	1	10/18/2019 11:57	WG1365164

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U	UJ	1.05	25.0	1	10/26/2019 00:12	WG1369955
Acrylonitrile	U		0.873	5.00	1	10/26/2019 00:12	WG1369955
Benzene	U		0.0896	0.500	1	10/26/2019 00:12	WG1369955
Bromobenzene	U	UJ	0.133	0.500	1	10/26/2019 00:12	WG1369955
Bromodichloromethane	U		0.0800	0.500	1	10/26/2019 00:12	WG1369955
Bromochloromethane	U		0.145	0.500	1	10/26/2019 00:12	WG1369955
Bromoform	U		0.186	0.500	1	10/26/2019 00:12	WG1369955
Bromomethane	U		0.157	2.50	1	10/26/2019 00:12	WG1369955
n-Butylbenzene	U		0.143	0.500	1	10/26/2019 00:12	WG1369955
sec-Butylbenzene	U		0.134	0.500	1	10/26/2019 00:12	WG1369955
tert-Butylbenzene	U		0.183	0.500	1	10/26/2019 00:12	WG1369955
Carbon disulfide	U		0.101	0.500	1	10/26/2019 00:12	WG1369955
Carbon tetrachloride	U		0.159	0.500	1	10/26/2019 00:12	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

12/9/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/26/2019 00:12	WG1369955
Chlorodibromomethane	U		0.128	0.500	1	10/26/2019 00:12	WG1369955
Chloroethane	U		0.141	2.50	1	10/26/2019 00:12	WG1369955
Chloroform	U		0.0860	0.500	1	10/26/2019 00:12	WG1369955
Chloromethane	U	UJ JO	0.153	1.25	1	10/26/2019 00:12	WG1369955
2-Chlorotoluene	U		0.111	0.500	1	10/26/2019 00:12	WG1369955
4-Chlorotoluene	U		0.0972	0.500	1	10/26/2019 00:12	WG1369955
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/26/2019 00:12	WG1369955
1,2-Dibromoethane	U		0.193	0.500	1	10/26/2019 00:12	WG1369955
Dibromomethane	U		0.117	0.500	1	10/26/2019 00:12	WG1369955
1,2-Dichlorobenzene	U		0.101	0.500	1	10/26/2019 00:12	WG1369955
1,3-Dichlorobenzene	U		0.130	0.500	1	10/26/2019 00:12	WG1369955
1,4-Dichlorobenzene	U		0.121	0.500	1	10/26/2019 00:12	WG1369955
Dichlorodifluoromethane	U		0.127	2.50	1	10/26/2019 00:12	WG1369955
1,1-Dichloroethane	U		0.114	0.500	1	10/26/2019 00:12	WG1369955
1,2-Dichloroethane	U		0.108	0.500	1	10/26/2019 00:12	WG1369955
1,1-Dichloroethene	U		0.188	0.500	1	10/26/2019 00:12	WG1369955
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/26/2019 00:12	WG1369955
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/26/2019 00:12	WG1369955
1,2-Dichloropropane	U		0.190	0.500	1	10/26/2019 00:12	WG1369955
1,1-Dichloropropene	U		0.128	0.500	1	10/26/2019 00:12	WG1369955
1,3-Dichloropropane	U		0.147	1.00	1	10/26/2019 00:12	WG1369955
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/26/2019 00:12	WG1369955
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/26/2019 00:12	WG1369955
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/26/2019 00:12	WG1369955
2,2-Dichloropropane	U		0.0929	0.500	1	10/26/2019 00:12	WG1369955
Di-isopropyl ether	U		0.0924	0.500	1	10/26/2019 00:12	WG1369955
Ethylbenzene	U		0.158	0.500	1	10/26/2019 00:12	WG1369955
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/26/2019 00:12	WG1369955
2-Hexanone	U		0.757	5.00	1	10/26/2019 00:12	WG1369955
n-Hexane	U		0.305	5.00	1	10/26/2019 00:12	WG1369955
Iodomethane	U		0.377	10.0	1	10/26/2019 00:12	WG1369955
Isopropylbenzene	U		0.126	0.500	1	10/26/2019 00:12	WG1369955
p-Isopropyltoluene	U		0.138	0.500	1	10/26/2019 00:12	WG1369955
2-Butanone (MEK)	U		1.28	5.00	1	10/26/2019 00:12	WG1369955
Methylene Chloride	U		1.07	2.50	1	10/26/2019 00:12	WG1369955
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/26/2019 00:12	WG1369955
Methyl tert-butyl ether	U		0.102	0.500	1	10/26/2019 00:12	WG1369955
Naphthalene	U		0.174	2.50	1	10/26/2019 00:12	WG1369955
n-Propylbenzene	U		0.162	0.500	1	10/26/2019 00:12	WG1369955
Styrene	U		0.117	0.500	1	10/26/2019 00:12	WG1369955
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/26/2019 00:12	WG1369955
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/26/2019 00:12	WG1369955
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/26/2019 00:12	WG1369955
Tetrachloroethene	U		0.199	0.500	1	10/26/2019 00:12	WG1369955
Toluene	U		0.412	0.500	1	10/26/2019 00:12	WG1369955
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/26/2019 00:12	WG1369955
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/26/2019 00:12	WG1369955
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/26/2019 00:12	WG1369955
1,1,2-Trichloroethane	U		0.186	0.500	1	10/26/2019 00:12	WG1369955
Trichloroethene	U		0.153	0.500	1	10/26/2019 00:12	WG1369955
Trichlorofluoromethane	U		0.130	2.50	1	10/26/2019 00:12	WG1369955
1,2,3-Trichloropropane	U		0.247	2.50	1	10/26/2019 00:12	WG1369955
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/26/2019 00:12	WG1369955
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/26/2019 00:12	WG1369955
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/26/2019 00:12	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

12/9/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/26/2019 00:12	WG1369955
Vinyl chloride	0.463	↓	0.118	0.500	1	10/26/2019 00:12	WG1369955
Xylenes, Total	U		0.316	1.50	1	10/26/2019 00:12	WG1369955
(S) Toluene-d8	110			80.0-120		10/26/2019 00:12	WG1369955
(S) 4-Bromofluorobenzene	110			77.0-126		10/26/2019 00:12	WG1369955
(S) 1,2-Dichloroethane-d4	104			70.0-130		10/26/2019 00:12	WG1369955

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

12/9/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	408000		2710	20000	1	10/22/2019 17:03	WG1366946

Sample Narrative:

L1150936-06 WG1366946: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	22800		51.9	1000	1	10/17/2019 19:02	WG1364616
Nitrate	441		22.7	100	1	10/17/2019 19:02	WG1364616
Sulfate	5720		77.4	5000	1	10/17/2019 19:02	WG1364616

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	7170		102	1000	1	10/19/2019 01:45	WG1365383

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	1680		15.0	100	1	10/23/2019 15:02	WG1366325
Manganese	403		0.250	5.00	1	10/23/2019 15:02	WG1366325

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/19/2019 06:53	WG1365594
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		10/19/2019 06:53	WG1365594

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	4670		0.287	0.678	1	10/18/2019 12:04	WG1365164
Ethane	78.6		0.296	1.29	1	10/18/2019 12:04	WG1365164
Ethene	U		0.422	1.27	1	10/18/2019 12:04	WG1365164

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U	UJ JO	1.05	25.0	1	10/26/2019 00:52	WG1369955
Acrylonitrile	U		0.873	5.00	1	10/26/2019 00:52	WG1369955
Benzene	U		0.0896	0.500	1	10/26/2019 00:52	WG1369955
Bromobenzene	U	UJ JO	0.133	0.500	1	10/26/2019 00:52	WG1369955
Bromodichloromethane	U		0.0800	0.500	1	10/26/2019 00:52	WG1369955
Bromochloromethane	U		0.145	0.500	1	10/26/2019 00:52	WG1369955
Bromoform	U		0.186	0.500	1	10/26/2019 00:52	WG1369955
Bromomethane	U		0.157	2.50	1	10/26/2019 00:52	WG1369955 12/9/19
n-Butylbenzene	U		0.143	0.500	1	10/26/2019 00:52	WG1369955
sec-Butylbenzene	U		0.134	0.500	1	10/26/2019 00:52	WG1369955
tert-Butylbenzene	U		0.183	0.500	1	10/26/2019 00:52	WG1369955
Carbon disulfide	U		0.101	0.500	1	10/26/2019 00:52	WG1369955
Carbon tetrachloride	U		0.159	0.500	1	10/26/2019 00:52	WG1369955

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/26/2019 00:52	WG1369955
Chlorodibromomethane	U		0.128	0.500	1	10/26/2019 00:52	WG1369955
Chloroethane	U		0.141	2.50	1	10/26/2019 00:52	WG1369955
Chloroform	U		0.0860	0.500	1	10/26/2019 00:52	WG1369955
Chloromethane	U	UJ JO	0.153	1.25	1	10/26/2019 00:52	WG1369955
2-Chlorotoluene	U		0.111	0.500	1	10/26/2019 00:52	WG1369955
4-Chlorotoluene	U		0.0972	0.500	1	10/26/2019 00:52	WG1369955
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/26/2019 00:52	WG1369955
1,2-Dibromoethane	U		0.193	0.500	1	10/26/2019 00:52	WG1369955
Dibromomethane	U		0.117	0.500	1	10/26/2019 00:52	WG1369955
1,2-Dichlorobenzene	U		0.101	0.500	1	10/26/2019 00:52	WG1369955
1,3-Dichlorobenzene	U		0.130	0.500	1	10/26/2019 00:52	WG1369955
1,4-Dichlorobenzene	U		0.121	0.500	1	10/26/2019 00:52	WG1369955
Dichlorodifluoromethane	U		0.127	2.50	1	10/26/2019 00:52	WG1369955
1,1-Dichloroethane	U		0.114	0.500	1	10/26/2019 00:52	WG1369955
1,2-Dichloroethane	U		0.108	0.500	1	10/26/2019 00:52	WG1369955
1,1-Dichloroethene	U		0.188	0.500	1	10/26/2019 00:52	WG1369955
cis-1,2-Dichloroethene	0.188	U	0.0933	0.500	1	10/26/2019 00:52	WG1369955
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/26/2019 00:52	WG1369955
1,2-Dichloropropane	U		0.190	0.500	1	10/26/2019 00:52	WG1369955
1,1-Dichloropropene	U		0.128	0.500	1	10/26/2019 00:52	WG1369955
1,3-Dichloropropane	U		0.147	1.00	1	10/26/2019 00:52	WG1369955
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/26/2019 00:52	WG1369955
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/26/2019 00:52	WG1369955
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/26/2019 00:52	WG1369955
2,2-Dichloropropane	U		0.0929	0.500	1	10/26/2019 00:52	WG1369955
Di-isopropyl ether	U		0.0924	0.500	1	10/26/2019 00:52	WG1369955
Ethylbenzene	U		0.158	0.500	1	10/26/2019 00:52	WG1369955
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/26/2019 00:52	WG1369955
2-Hexanone	U		0.757	5.00	1	10/26/2019 00:52	WG1369955
n-Hexane	U		0.305	5.00	1	10/26/2019 00:52	WG1369955
Iodomethane	U		0.377	10.0	1	10/26/2019 00:52	WG1369955
Isopropylbenzene	U		0.126	0.500	1	10/26/2019 00:52	WG1369955
p-Isopropyltoluene	U		0.138	0.500	1	10/26/2019 00:52	WG1369955
2-Butanone (MEK)	U		1.28	5.00	1	10/26/2019 00:52	WG1369955
Methylene Chloride	U		1.07	2.50	1	10/26/2019 00:52	WG1369955
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/26/2019 00:52	WG1369955
Methyl tert-butyl ether	U		0.102	0.500	1	10/26/2019 00:52	WG1369955
Naphthalene	U		0.174	2.50	1	10/26/2019 00:52	WG1369955
n-Propylbenzene	U		0.162	0.500	1	10/26/2019 00:52	WG1369955
Styrene	0.141	U	0.117	0.500	1	10/26/2019 00:52	WG1369955
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/26/2019 00:52	WG1369955
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/26/2019 00:52	WG1369955
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/26/2019 00:52	WG1369955
Tetrachloroethene	U		0.199	0.500	1	10/26/2019 00:52	WG1369955
Toluene	0.561		0.412	0.500	1	10/26/2019 00:52	WG1369955
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/26/2019 00:52	WG1369955
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/26/2019 00:52	WG1369955
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/26/2019 00:52	WG1369955
1,1,2-Trichloroethane	U		0.186	0.500	1	10/26/2019 00:52	WG1369955
Trichloroethene	U		0.153	0.500	1	10/26/2019 00:52	WG1369955
Trichlorofluoromethane	U		0.130	2.50	1	10/26/2019 00:52	WG1369955
1,2,3-Trichloropropane	U		0.247	2.50	1	10/26/2019 00:52	WG1369955
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/26/2019 00:52	WG1369955
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/26/2019 00:52	WG1369955
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/26/2019 00:52	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

12/9/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/26/2019 00:52	WG1369955
Vinyl chloride	U		0.118	0.500	1	10/26/2019 00:52	WG1369955
Xylenes, Total	U		0.316	1.50	1	10/26/2019 00:52	WG1369955
<i>(S) Toluene-d8</i>	112			80.0-120		10/26/2019 00:52	WG1369955
<i>(S) 4-Bromofluorobenzene</i>	112			77.0-126		10/26/2019 00:52	WG1369955
<i>(S) 1,2-Dichloroethane-d4</i>	102			70.0-130		10/26/2019 00:52	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

12/9/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	518000		2710	20000	1	10/22/2019 17:10	WG1366946

Sample Narrative:

L1150936-07 WG1366946: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	35800		51.9	1000	1	10/17/2019 19:14	WG1364616
Nitrate	U		22.7	100	1	10/17/2019 19:14	WG1364616
Sulfate	67700		77.4	5000	1	10/17/2019 19:14	WG1364616

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	20900		102	1000	1	10/19/2019 02:08	WG1365383

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	8540		15.0	100	1	10/23/2019 15:05	WG1366325
Manganese	2090		0.250	5.00	1	10/23/2019 15:05	WG1366325

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	2000		31.6	100	1	10/19/2019 07:17	WG1365594
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	109			78.0-120		10/19/2019 07:17	WG1365594

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	5780		0.287	0.678	1	10/18/2019 13:25	WG1365165
Ethane	62.6		0.296	1.29	1	10/18/2019 13:25	WG1365165
Ethene	110		0.422	1.27	1	10/18/2019 13:25	WG1365165

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	1.18	U J JO	1.05	25.0	1	10/26/2019 01:13	WG1369955
Acrylonitrile	U		0.873	5.00	1	10/26/2019 01:13	WG1369955
Benzene	0.211	J	0.0896	0.500	1	10/26/2019 01:13	WG1369955
Bromobenzene	U	UJ JO	0.133	0.500	1	10/26/2019 01:13	WG1369955
Bromodichloromethane	U		0.0800	0.500	1	10/26/2019 01:13	WG1369955
Bromochloromethane	U		0.145	0.500	1	10/26/2019 01:13	WG1369955
Bromoform	U		0.186	0.500	1	10/26/2019 01:13	WG1369955
Bromomethane	U		0.157	2.50	1	10/26/2019 01:13	WG1369955
n-Butylbenzene	U		0.143	0.500	1	10/26/2019 01:13	WG1369955
sec-Butylbenzene	U		0.134	0.500	1	10/26/2019 01:13	WG1369955
tert-Butylbenzene	U		0.183	0.500	1	10/26/2019 01:13	WG1369955
Carbon disulfide	U		0.101	0.500	1	10/26/2019 01:13	WG1369955
Carbon tetrachloride	U		0.159	0.500	1	10/26/2019 01:13	WG1369955

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/26/2019 01:13	WG1369955
Chlorodibromomethane	U		0.128	0.500	1	10/26/2019 01:13	WG1369955
Chloroethane	U		0.141	2.50	1	10/26/2019 01:13	WG1369955
Chloroform	U		0.0860	0.500	1	10/26/2019 01:13	WG1369955
Chloromethane	U	UJ JO	0.153	1.25	1	10/26/2019 01:13	WG1369955
2-Chlorotoluene	U		0.111	0.500	1	10/26/2019 01:13	WG1369955
4-Chlorotoluene	U		0.0972	0.500	1	10/26/2019 01:13	WG1369955
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/26/2019 01:13	WG1369955
1,2-Dibromoethane	U		0.193	0.500	1	10/26/2019 01:13	WG1369955
Dibromomethane	U		0.117	0.500	1	10/26/2019 01:13	WG1369955
1,2-Dichlorobenzene	U		0.101	0.500	1	10/26/2019 01:13	WG1369955
1,3-Dichlorobenzene	U		0.130	0.500	1	10/26/2019 01:13	WG1369955
1,4-Dichlorobenzene	U		0.121	0.500	1	10/26/2019 01:13	WG1369955
Dichlorodifluoromethane	U		0.127	2.50	1	10/26/2019 01:13	WG1369955
1,1-Dichloroethane	U		0.114	0.500	1	10/26/2019 01:13	WG1369955
1,2-Dichloroethane	U		0.108	0.500	1	10/26/2019 01:13	WG1369955
1,1-Dichloroethene	8.47		0.188	0.500	1	10/26/2019 01:13	WG1369955
cis-1,2-Dichloroethene	2510		18.7	100	200	10/27/2019 15:49	WG1370146
trans-1,2-Dichloroethene	11.0		0.152	0.500	1	10/26/2019 01:13	WG1369955
1,2-Dichloropropane	U		0.190	0.500	1	10/26/2019 01:13	WG1369955
1,1-Dichloropropene	U		0.128	0.500	1	10/26/2019 01:13	WG1369955
1,3-Dichloropropane	U		0.147	1.00	1	10/26/2019 01:13	WG1369955
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/26/2019 01:13	WG1369955
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/26/2019 01:13	WG1369955
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/26/2019 01:13	WG1369955
2,2-Dichloropropane	U		0.0929	0.500	1	10/26/2019 01:13	WG1369955
Di-isopropyl ether	U		0.0924	0.500	1	10/26/2019 01:13	WG1369955
Ethylbenzene	U		0.158	0.500	1	10/26/2019 01:13	WG1369955
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/26/2019 01:13	WG1369955
2-Hexanone	U		0.757	5.00	1	10/26/2019 01:13	WG1369955
n-Hexane	U		0.305	5.00	1	10/26/2019 01:13	WG1369955
Iodomethane	U		0.377	10.0	1	10/26/2019 01:13	WG1369955
Isopropylbenzene	U		0.126	0.500	1	10/26/2019 01:13	WG1369955
p-Isopropyltoluene	U		0.138	0.500	1	10/26/2019 01:13	WG1369955
2-Butanone (MEK)	U		1.28	5.00	1	10/26/2019 01:13	WG1369955
Methylene Chloride	U		1.07	2.50	1	10/26/2019 01:13	WG1369955
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/26/2019 01:13	WG1369955
Methyl tert-butyl ether	U		0.102	0.500	1	10/26/2019 01:13	WG1369955
Naphthalene	U		0.174	2.50	1	10/26/2019 01:13	WG1369955
n-Propylbenzene	U		0.162	0.500	1	10/26/2019 01:13	WG1369955
Styrene	U		0.117	0.500	1	10/26/2019 01:13	WG1369955
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/26/2019 01:13	WG1369955
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/26/2019 01:13	WG1369955
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/26/2019 01:13	WG1369955
Tetrachloroethene	2.35		0.199	0.500	1	10/26/2019 01:13	WG1369955
Toluene	U		0.412	0.500	1	10/26/2019 01:13	WG1369955
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/26/2019 01:13	WG1369955
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/26/2019 01:13	WG1369955
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/26/2019 01:13	WG1369955
1,1,2-Trichloroethane	U		0.186	0.500	1	10/26/2019 01:13	WG1369955
Trichloroethene	28.0		0.153	0.500	1	10/26/2019 01:13	WG1369955
Trichlorofluoromethane	U		0.130	2.50	1	10/26/2019 01:13	WG1369955
1,2,3-Trichloropropane	U		0.247	2.50	1	10/26/2019 01:13	WG1369955
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/26/2019 01:13	WG1369955
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/26/2019 01:13	WG1369955
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/26/2019 01:13	WG1369955

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/26/2019 01:13	WG1369955
Vinyl chloride	1180		23.6	100	200	10/27/2019 15:49	WG1370146
Xylenes, Total	U		0.316	1.50	1	10/26/2019 01:13	WG1369955
<i>(S) Toluene-d8</i>	111			80.0-120		10/26/2019 01:13	WG1369955
<i>(S) Toluene-d8</i>	94.2			80.0-120		10/27/2019 15:49	WG1370146
<i>(S) 4-Bromofluorobenzene</i>	112			77.0-126		10/26/2019 01:13	WG1369955
<i>(S) 4-Bromofluorobenzene</i>	92.6			77.0-126		10/27/2019 15:49	WG1370146
<i>(S) 1,2-Dichloroethane-d4</i>	105			70.0-130		10/26/2019 01:13	WG1369955
<i>(S) 1,2-Dichloroethane-d4</i>	103			70.0-130		10/27/2019 15:49	WG1370146

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

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Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	264000		2710	20000	1	10/23/2019 19:22	WG1367736

Sample Narrative:

L1151401-01 WG1367736: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	22000		51.9	1000	1	10/18/2019 18:09	WG1365245
Nitrate	473		22.7	100	1	10/18/2019 18:09	WG1365245
Sulfate	120000		387	25000	5	10/19/2019 09:09	WG1365245

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3680	B	102	1000	1	10/22/2019 18:09	WG1367168

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	930		15.0	100	1	10/23/2019 09:24	WG1366327
Manganese	637		0.250	5.00	1	10/23/2019 09:24	WG1366327

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	113	B	31.6	100	1	10/23/2019 17:20	WG1367716
(S) a,a,a-Trifluorotoluene(FID)	103			78.0-120		10/23/2019 17:20	WG1367716

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	43.9	J	0.287	0.678	1	10/22/2019 05:44	WG1366961
Ethane	U		0.296	1.29	1	10/22/2019 05:44	WG1366961
Ethene	U		0.422	1.27	1	10/22/2019 05:44	WG1366961

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch	
Acetone	1.20	U	J JO	1.05	25.0	1	10/26/2019 01:33	WG1369955
Acrylonitrile	U		0.873	5.00	1	10/26/2019 01:33	WG1369955	
Benzene	U		0.0896	0.500	1	10/26/2019 01:33	WG1369955	
Bromobenzene	U	UJ	JO	0.133	0.500	1	10/26/2019 01:33	WG1369955
Bromodichloromethane	U		0.0800	0.500	1	10/26/2019 01:33	WG1369955	
Bromochloromethane	U		0.145	0.500	1	10/26/2019 01:33	WG1369955	
Bromoform	U		0.186	0.500	1	10/26/2019 01:33	WG1369955	
Bromomethane	U		0.157	2.50	1	10/26/2019 01:33	WG1369955	
n-Butylbenzene	U		0.143	0.500	1	10/26/2019 01:33	WG1369955	
sec-Butylbenzene	U		0.134	0.500	1	10/26/2019 01:33	WG1369955	
tert-Butylbenzene	U		0.183	0.500	1	10/26/2019 01:33	WG1369955	
Carbon disulfide	U		0.101	0.500	1	10/26/2019 01:33	WG1369955	
Carbon tetrachloride	U		0.159	0.500	1	10/26/2019 01:33	WG1369955	

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- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/26/2019 01:33	WG1369955
Chlorodibromomethane	U		0.128	0.500	1	10/26/2019 01:33	WG1369955
Chloroethane	U		0.141	2.50	1	10/26/2019 01:33	WG1369955
Chloroform	U		0.0860	0.500	1	10/26/2019 01:33	WG1369955
Chloromethane	U	UJ JO	0.153	1.25	1	10/26/2019 01:33	WG1369955
2-Chlorotoluene	U		0.111	0.500	1	10/26/2019 01:33	WG1369955
4-Chlorotoluene	U		0.0972	0.500	1	10/26/2019 01:33	WG1369955
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/26/2019 01:33	WG1369955
1,2-Dibromoethane	U		0.193	0.500	1	10/26/2019 01:33	WG1369955
Dibromomethane	U		0.117	0.500	1	10/26/2019 01:33	WG1369955
1,2-Dichlorobenzene	U		0.101	0.500	1	10/26/2019 01:33	WG1369955
1,3-Dichlorobenzene	U		0.130	0.500	1	10/26/2019 01:33	WG1369955
1,4-Dichlorobenzene	U		0.121	0.500	1	10/26/2019 01:33	WG1369955
Dichlorodifluoromethane	U		0.127	2.50	1	10/26/2019 01:33	WG1369955
1,1-Dichloroethane	1.29		0.114	0.500	1	10/26/2019 01:33	WG1369955
1,2-Dichloroethane	0.485	U	0.108	0.500	1	10/26/2019 01:33	WG1369955
1,1-Dichloroethene	0.478	U	0.188	0.500	1	10/26/2019 01:33	WG1369955
cis-1,2-Dichloroethene	49.8		0.0933	0.500	1	10/27/2019 16:09	WG1370146
trans-1,2-Dichloroethene	0.243	U	0.152	0.500	1	10/26/2019 01:33	WG1369955
1,2-Dichloropropane	U	UJ	0.190	0.500	1	10/26/2019 01:33	WG1369955
1,1-Dichloropropene	U		0.128	0.500	1	10/26/2019 01:33	WG1369955
1,3-Dichloropropane	U		0.147	1.00	1	10/26/2019 01:33	WG1369955
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/26/2019 01:33	WG1369955
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/26/2019 01:33	WG1369955
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/26/2019 01:33	WG1369955
2,2-Dichloropropane	U		0.0929	0.500	1	10/26/2019 01:33	WG1369955
Di-isopropyl ether	U		0.0924	0.500	1	10/26/2019 01:33	WG1369955
Ethylbenzene	U		0.158	0.500	1	10/26/2019 01:33	WG1369955
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/26/2019 01:33	WG1369955
2-Hexanone	U		0.757	5.00	1	10/26/2019 01:33	WG1369955
n-Hexane	U		0.305	5.00	1	10/26/2019 01:33	WG1369955
Iodomethane	U		0.377	10.0	1	10/26/2019 01:33	WG1369955
Isopropylbenzene	U		0.126	0.500	1	10/26/2019 01:33	WG1369955
p-Isopropyltoluene	U		0.138	0.500	1	10/26/2019 01:33	WG1369955
2-Butanone (MEK)	U		1.28	5.00	1	10/26/2019 01:33	WG1369955
Methylene Chloride	U		1.07	2.50	1	10/26/2019 01:33	WG1369955
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/26/2019 01:33	WG1369955
Methyl tert-butyl ether	U		0.102	0.500	1	10/26/2019 01:33	WG1369955
Naphthalene	U		0.174	2.50	1	10/26/2019 01:33	WG1369955
n-Propylbenzene	U		0.162	0.500	1	10/26/2019 01:33	WG1369955
Styrene	U		0.117	0.500	1	10/26/2019 01:33	WG1369955
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/26/2019 01:33	WG1369955
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/26/2019 01:33	WG1369955
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/26/2019 01:33	WG1369955
Tetrachloroethene	73.9		0.199	0.500	1	10/26/2019 01:33	WG1369955
Toluene	U		0.412	0.500	1	10/26/2019 01:33	WG1369955
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/26/2019 01:33	WG1369955
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/26/2019 01:33	WG1369955
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/26/2019 01:33	WG1369955
1,1,2-Trichloroethane	U		0.186	0.500	1	10/26/2019 01:33	WG1369955
Trichloroethene	26.9		0.153	0.500	1	10/26/2019 01:33	WG1369955
Trichlorofluoromethane	U		0.130	2.50	1	10/26/2019 01:33	WG1369955
1,2,3-Trichloropropane	U		0.247	2.50	1	10/26/2019 01:33	WG1369955
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/26/2019 01:33	WG1369955
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/26/2019 01:33	WG1369955
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/26/2019 01:33	WG1369955

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/26/2019 01:33	WG1369955
Vinyl chloride	2.25		0.118	0.500	1	10/27/2019 16:09	WG1370146
Xylenes, Total	U		0.316	1.50	1	10/26/2019 01:33	WG1369955
(S) Toluene-d8	112			80.0-120		10/26/2019 01:33	WG1369955
(S) Toluene-d8	92.6			80.0-120		10/27/2019 16:09	WG1370146
(S) 4-Bromofluorobenzene	112			77.0-126		10/26/2019 01:33	WG1369955
(S) 4-Bromofluorobenzene	90.8			77.0-126		10/27/2019 16:09	WG1370146
(S) 1,2-Dichloroethane-d4	109			70.0-130		10/26/2019 01:33	WG1369955
(S) 1,2-Dichloroethane-d4	106			70.0-130		10/27/2019 16:09	WG1370146

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

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Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	633000		2710	20000	1	10/23/2019 19:29	WG1367736

Sample Narrative:

L1151401-02 WG1367736: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	46000		51.9	1000	1	10/18/2019 18:26	WG1365245
Nitrate	U		22.7	100	1	10/18/2019 18:26	WG1365245
Sulfate	83300		77.4	5000	1	10/18/2019 18:26	WG1365245

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	19300		102	1000	1	10/22/2019 18:32	WG1367168

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	3440		15.0	100	1	10/23/2019 09:28	WG1366327
Manganese	3830		0.250	5.00	1	10/23/2019 09:28	WG1366327

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	1450		316	1000	10	10/23/2019 23:15	WG1367716
(S) a,a,a-Trifluorotoluene(FID)	103			78.0-120		10/23/2019 23:15	WG1367716

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	2490		0.287	0.678	1	10/22/2019 05:47	WG1366961
Ethane	179		0.296	1.29	1	10/22/2019 05:47	WG1366961
Ethene	U		0.422	1.27	1	10/22/2019 05:47	WG1366961

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch	
Acetone	12.9	U	J JO	10.5	250	10	10/26/2019 01:53	WG1369955
Acrylonitrile	U		8.73	50.0	10	10/26/2019 01:53	WG1369955	
Benzene	U		0.896	5.00	10	10/26/2019 01:53	WG1369955	
Bromobenzene	U	UJ	JO	1.33	5.00	10	10/26/2019 01:53	WG1369955
Bromodichloromethane	U		0.800	5.00	10	10/26/2019 01:53	WG1369955	
Bromochloromethane	U		1.45	5.00	10	10/26/2019 01:53	WG1369955	
Bromoform	U		1.86	5.00	10	10/26/2019 01:53	WG1369955	
Bromomethane	U		1.57	25.0	10	10/26/2019 01:53	WG1369955	
n-Butylbenzene	U		1.43	5.00	10	10/26/2019 01:53	WG1369955	
sec-Butylbenzene	U		1.34	5.00	10	10/26/2019 01:53	WG1369955	
tert-Butylbenzene	U		1.83	5.00	10	10/26/2019 01:53	WG1369955	
Carbon disulfide	U		1.01	5.00	10	10/26/2019 01:53	WG1369955	
Carbon tetrachloride	U		1.59	5.00	10	10/26/2019 01:53	WG1369955	

JC 12/9/19

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		1.40	5.00	10	10/26/2019 01:53	WG1369955
Chlorodibromomethane	U		1.28	5.00	10	10/26/2019 01:53	WG1369955
Chloroethane	U		1.41	25.0	10	10/26/2019 01:53	WG1369955
Chloroform	U		0.860	5.00	10	10/26/2019 01:53	WG1369955
Chloromethane	U	UJ JO	1.53	12.5	10	10/26/2019 01:53	WG1369955
2-Chlorotoluene	U		1.11	5.00	10	10/26/2019 01:53	WG1369955
4-Chlorotoluene	U		0.972	5.00	10	10/26/2019 01:53	WG1369955
1,2-Dibromo-3-Chloropropane	U		3.25	25.0	10	10/26/2019 01:53	WG1369955
1,2-Dibromoethane	U		1.93	5.00	10	10/26/2019 01:53	WG1369955
Dibromomethane	U		1.17	5.00	10	10/26/2019 01:53	WG1369955
1,2-Dichlorobenzene	U		1.01	5.00	10	10/26/2019 01:53	WG1369955
1,3-Dichlorobenzene	U		1.30	5.00	10	10/26/2019 01:53	WG1369955
1,4-Dichlorobenzene	U		1.21	5.00	10	10/26/2019 01:53	WG1369955
Dichlorodifluoromethane	U		1.27	25.0	10	10/26/2019 01:53	WG1369955
1,1-Dichloroethane	U		1.14	5.00	10	10/26/2019 01:53	WG1369955
1,2-Dichloroethane	U		1.08	5.00	10	10/26/2019 01:53	WG1369955
1,1-Dichloroethene	6.70		1.88	5.00	10	10/26/2019 01:53	WG1369955
cis-1,2-Dichloroethene	1420		0.933	5.00	10	10/26/2019 01:53	WG1369955
trans-1,2-Dichloroethene	6.04		1.52	5.00	10	10/26/2019 01:53	WG1369955
1,2-Dichloropropane	U		1.90	5.00	10	10/26/2019 01:53	WG1369955
1,1-Dichloropropene	U		1.28	5.00	10	10/26/2019 01:53	WG1369955
1,3-Dichloropropane	U		1.47	10.0	10	10/26/2019 01:53	WG1369955
cis-1,3-Dichloropropene	U		0.976	5.00	10	10/26/2019 01:53	WG1369955
trans-1,3-Dichloropropene	U		2.22	5.00	10	10/26/2019 01:53	WG1369955
trans-1,4-Dichloro-2-butene	U	UJ JO	2.57	50.0	10	10/26/2019 01:53	WG1369955
2,2-Dichloropropane	U		0.929	5.00	10	10/26/2019 01:53	WG1369955
Di-isopropyl ether	U		0.924	5.00	10	10/26/2019 01:53	WG1369955
Ethylbenzene	U		1.58	5.00	10	10/26/2019 01:53	WG1369955
Hexachloro-1,3-butadiene	U		1.57	10.0	10	10/26/2019 01:53	WG1369955
2-Hexanone	U		7.57	50.0	10	10/26/2019 01:53	WG1369955
n-Hexane	U		3.05	50.0	10	10/26/2019 01:53	WG1369955
Iodomethane	U		3.77	100	10	10/26/2019 01:53	WG1369955
Isopropylbenzene	U		1.26	5.00	10	10/26/2019 01:53	WG1369955
p-Isopropyltoluene	U		1.38	5.00	10	10/26/2019 01:53	WG1369955
2-Butanone (MEK)	U		12.8	50.0	10	10/26/2019 01:53	WG1369955
Methylene Chloride	U		10.7	25.0	10	10/26/2019 01:53	WG1369955
4-Methyl-2-pentanone (MIBK)	U		8.23	50.0	10	10/26/2019 01:53	WG1369955
Methyl tert-butyl ether	U		1.02	5.00	10	10/26/2019 01:53	WG1369955
Naphthalene	U		1.74	25.0	10	10/26/2019 01:53	WG1369955
n-Propylbenzene	U		1.62	5.00	10	10/26/2019 01:53	WG1369955
Styrene	U		1.17	5.00	10	10/26/2019 01:53	WG1369955
1,1,1,2-Tetrachloroethane	U		1.20	5.00	10	10/26/2019 01:53	WG1369955
1,1,2,2-Tetrachloroethane	U		1.30	5.00	10	10/26/2019 01:53	WG1369955
1,1,2-Trichlorotrifluoroethane	U		1.64	5.00	10	10/26/2019 01:53	WG1369955
Tetrachloroethene	682		1.99	5.00	10	10/26/2019 01:53	WG1369955
Toluene	U		4.12	5.00	10	10/26/2019 01:53	WG1369955
1,2,3-Trichlorobenzene	U		1.64	5.00	10	10/26/2019 01:53	WG1369955
1,2,4-Trichlorobenzene	U		3.55	5.00	10	10/26/2019 01:53	WG1369955
1,1,1-Trichloroethane	U		0.940	5.00	10	10/26/2019 01:53	WG1369955
1,1,2-Trichloroethane	U		1.86	5.00	10	10/26/2019 01:53	WG1369955
Trichloroethene	430		1.53	5.00	10	10/26/2019 01:53	WG1369955
Trichlorofluoromethane	U		1.30	25.0	10	10/26/2019 01:53	WG1369955
1,2,3-Trichloropropane	U		2.47	25.0	10	10/26/2019 01:53	WG1369955
1,2,4-Trimethylbenzene	1.36	J	1.23	5.00	10	10/26/2019 01:53	WG1369955
1,2,3-Trimethylbenzene	U		0.739	5.00	10	10/26/2019 01:53	WG1369955
1,3,5-Trimethylbenzene	U		1.24	5.00	10	10/26/2019 01:53	WG1369955

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/9/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		6.45	50.0	10	10/26/2019 01:53	WG1369955
Vinyl chloride	51.1		1.18	5.00	10	10/26/2019 01:53	WG1369955
Xylenes, Total	U		3.16	15.0	10	10/26/2019 01:53	WG1369955
<i>(S) Toluene-d8</i>	111			80.0-120		10/26/2019 01:53	WG1369955
<i>(S) 4-Bromofluorobenzene</i>	111			77.0-126		10/26/2019 01:53	WG1369955
<i>(S) 1,2-Dichloroethane-d4</i>	108			70.0-130		10/26/2019 01:53	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/9/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	612000		2710	20000	1	10/23/2019 19:35	WG1367736

Sample Narrative:

L1151401-03 WG1367736: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	20000		51.9	1000	1	10/18/2019 18:58	WG1365245
Nitrate	U		22.7	100	1	10/18/2019 18:58	WG1365245
Sulfate	U		77.4	5000	1	10/18/2019 18:58	WG1365245

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	4420	B	102	1000	1	10/22/2019 18:51	WG1367168

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	21600		15.0	100	1	10/23/2019 09:31	WG1366327
Manganese	3760		0.250	5.00	1	10/23/2019 09:31	WG1366327

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	62.0	U B J	31.6	100	1	10/23/2019 17:42	WG1367716
(S) a,a,a-Trifluorotoluene(FID)	103			78.0-120		10/23/2019 17:42	WG1367716

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	1770		0.287	0.678	1	10/22/2019 05:51	WG1366961
Ethane	8.51		0.296	1.29	1	10/22/2019 05:51	WG1366961
Ethene	U		0.422	1.27	1	10/22/2019 05:51	WG1366961

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U	U J	1.05	25.0	1	10/26/2019 02:14	WG1369955
Acrylonitrile	U		0.873	5.00	1	10/26/2019 02:14	WG1369955
Benzene	U		0.0896	0.500	1	10/26/2019 02:14	WG1369955
Bromobenzene	U	U J	0.133	0.500	1	10/26/2019 02:14	WG1369955
Bromodichloromethane	U		0.0800	0.500	1	10/26/2019 02:14	WG1369955
Bromochloromethane	U		0.145	0.500	1	10/26/2019 02:14	WG1369955
Bromoform	U		0.186	0.500	1	10/26/2019 02:14	WG1369955
Bromomethane	U		0.157	2.50	1	10/26/2019 02:14	WG1369955
n-Butylbenzene	U		0.143	0.500	1	10/26/2019 02:14	WG1369955
sec-Butylbenzene	U		0.134	0.500	1	10/26/2019 02:14	WG1369955
tert-Butylbenzene	U		0.183	0.500	1	10/26/2019 02:14	WG1369955
Carbon disulfide	U		0.101	0.500	1	10/26/2019 02:14	WG1369955
Carbon tetrachloride	U		0.159	0.500	1	10/26/2019 02:14	WG1369955

JC 12/9/19

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/26/2019 02:14	WG1369955
Chlorodibromomethane	U		0.128	0.500	1	10/26/2019 02:14	WG1369955
Chloroethane	U		0.141	2.50	1	10/26/2019 02:14	WG1369955
Chloroform	U		0.0860	0.500	1	10/26/2019 02:14	WG1369955
Chloromethane	U	UJ JO	0.153	1.25	1	10/26/2019 02:14	WG1369955
2-Chlorotoluene	U		0.111	0.500	1	10/26/2019 02:14	WG1369955
4-Chlorotoluene	U		0.0972	0.500	1	10/26/2019 02:14	WG1369955
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/26/2019 02:14	WG1369955
1,2-Dibromoethane	U		0.193	0.500	1	10/26/2019 02:14	WG1369955
Dibromomethane	U		0.117	0.500	1	10/26/2019 02:14	WG1369955
1,2-Dichlorobenzene	U		0.101	0.500	1	10/26/2019 02:14	WG1369955
1,3-Dichlorobenzene	U		0.130	0.500	1	10/26/2019 02:14	WG1369955
1,4-Dichlorobenzene	U		0.121	0.500	1	10/26/2019 02:14	WG1369955
Dichlorodifluoromethane	U		0.127	2.50	1	10/26/2019 02:14	WG1369955
1,1-Dichloroethane	U		0.114	0.500	1	10/26/2019 02:14	WG1369955
1,2-Dichloroethane	U		0.108	0.500	1	10/26/2019 02:14	WG1369955
1,1-Dichloroethene	U		0.188	0.500	1	10/26/2019 02:14	WG1369955
cis-1,2-Dichloroethene	0.786		0.0933	0.500	1	10/26/2019 02:14	WG1369955
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/26/2019 02:14	WG1369955
1,2-Dichloropropane	U		0.190	0.500	1	10/26/2019 02:14	WG1369955
1,1-Dichloropropene	U		0.128	0.500	1	10/26/2019 02:14	WG1369955
1,3-Dichloropropane	U		0.147	1.00	1	10/26/2019 02:14	WG1369955
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/26/2019 02:14	WG1369955
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/26/2019 02:14	WG1369955
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/26/2019 02:14	WG1369955
2,2-Dichloropropane	U		0.0929	0.500	1	10/26/2019 02:14	WG1369955
Di-isopropyl ether	U		0.0924	0.500	1	10/26/2019 02:14	WG1369955
Ethylbenzene	U		0.158	0.500	1	10/26/2019 02:14	WG1369955
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/26/2019 02:14	WG1369955
2-Hexanone	U		0.757	5.00	1	10/26/2019 02:14	WG1369955
n-Hexane	U		0.305	5.00	1	10/26/2019 02:14	WG1369955
Iodomethane	U		0.377	10.0	1	10/26/2019 02:14	WG1369955
Isopropylbenzene	U		0.126	0.500	1	10/26/2019 02:14	WG1369955
p-Isopropyltoluene	U		0.138	0.500	1	10/26/2019 02:14	WG1369955
2-Butanone (MEK)	U		1.28	5.00	1	10/26/2019 02:14	WG1369955
Methylene Chloride	U		1.07	2.50	1	10/26/2019 02:14	WG1369955
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/26/2019 02:14	WG1369955
Methyl tert-butyl ether	U		0.102	0.500	1	10/26/2019 02:14	WG1369955
Naphthalene	U		0.174	2.50	1	10/26/2019 02:14	WG1369955
n-Propylbenzene	U		0.162	0.500	1	10/26/2019 02:14	WG1369955
Styrene	U		0.117	0.500	1	10/26/2019 02:14	WG1369955
1,1,1-Tetrachloroethane	U		0.120	0.500	1	10/26/2019 02:14	WG1369955
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/26/2019 02:14	WG1369955
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/26/2019 02:14	WG1369955
Tetrachloroethene	U		0.199	0.500	1	10/26/2019 02:14	WG1369955
Toluene	U		0.412	0.500	1	10/26/2019 02:14	WG1369955
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/26/2019 02:14	WG1369955
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/26/2019 02:14	WG1369955
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/26/2019 02:14	WG1369955
1,1,2-Trichloroethane	U		0.186	0.500	1	10/26/2019 02:14	WG1369955
Trichloroethene	U		0.153	0.500	1	10/26/2019 02:14	WG1369955
Trichlorofluoromethane	U		0.130	2.50	1	10/26/2019 02:14	WG1369955
1,2,3-Trichloropropane	U		0.247	2.50	1	10/26/2019 02:14	WG1369955
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/26/2019 02:14	WG1369955
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/26/2019 02:14	WG1369955
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/26/2019 02:14	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/9/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/26/2019 02:14	WG1369955
Vinyl chloride	0.416	↓	0.118	0.500	1	10/26/2019 02:14	WG1369955
Xylenes, Total	U		0.316	1.50	1	10/26/2019 02:14	WG1369955
(S) Toluene-d8	110			80.0-120		10/26/2019 02:14	WG1369955
(S) 4-Bromofluorobenzene	115			77.0-126		10/26/2019 02:14	WG1369955
(S) 1,2-Dichloroethane-d4	108			70.0-130		10/26/2019 02:14	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/9/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	264000		2710	20000	1	10/23/2019 19:42	WG1367736

Sample Narrative:

L1151401-04 WG1367736: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	22000		51.9	1000	1	10/18/2019 19:15	WG1365245
Nitrate	472		22.7	100	1	10/18/2019 19:15	WG1365245
Sulfate	119000		387	25000	5	10/19/2019 09:25	WG1365245

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3640	<u>B</u>	102	1000	1	10/22/2019 19:53	WG1367168

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	937		15.0	100	1	10/23/2019 09:35	WG1366327
Manganese	637		0.250	5.00	1	10/23/2019 09:35	WG1366327

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	106	<u>B</u>	31.6	100	1	10/26/2019 16:56	WG1369652
(S) a,a,a-Trifluorotoluene(FID)	96.8			78.0-120		10/26/2019 16:56	WG1369652

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	86.4	J	0.287	0.678	1	10/22/2019 06:06	WG1366961
Ethane	U		0.296	1.29	1	10/22/2019 06:06	WG1366961
Ethene	U		0.422	1.27	1	10/22/2019 06:06	WG1366961

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U		1.05	25.0	1	10/27/2019 16:28	WG1370146
Acrylonitrile	U		0.873	5.00	1	10/27/2019 16:28	WG1370146
Benzene	U		0.0896	0.500	1	10/27/2019 16:28	WG1370146
Bromobenzene	U		0.133	0.500	1	10/27/2019 16:28	WG1370146
Bromodichloromethane	U		0.0800	0.500	1	10/27/2019 16:28	WG1370146
Bromochloromethane	U		0.145	0.500	1	10/27/2019 16:28	WG1370146
Bromoform	U		0.186	0.500	1	10/27/2019 16:28	WG1370146
Bromomethane	U	UJ JO	0.157	2.50	1	10/27/2019 16:28	WG1370146
n-Butylbenzene	U		0.143	0.500	1	10/27/2019 16:28	WG1370146
sec-Butylbenzene	U		0.134	0.500	1	10/27/2019 16:28	WG1370146
tert-Butylbenzene	U		0.183	0.500	1	10/27/2019 16:28	WG1370146
Carbon disulfide	U		0.101	0.500	1	10/27/2019 16:28	WG1370146
Carbon tetrachloride	U		0.159	0.500	1	10/27/2019 16:28	WG1370146

JC 12/9/19

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/27/2019 16:28	WG1370146
Chlorodibromomethane	U		0.128	0.500	1	10/27/2019 16:28	WG1370146
Chloroethane	U		0.141	2.50	1	10/27/2019 16:28	WG1370146
Chloroform	U		0.0860	0.500	1	10/27/2019 16:28	WG1370146
Chloromethane	U		0.153	1.25	1	10/27/2019 16:28	WG1370146
2-Chlorotoluene	U		0.111	0.500	1	10/27/2019 16:28	WG1370146
4-Chlorotoluene	U		0.0972	0.500	1	10/27/2019 16:28	WG1370146
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/27/2019 16:28	WG1370146
1,2-Dibromoethane	U		0.193	0.500	1	10/27/2019 16:28	WG1370146
Dibromomethane	U		0.117	0.500	1	10/27/2019 16:28	WG1370146
1,2-Dichlorobenzene	U		0.101	0.500	1	10/27/2019 16:28	WG1370146
1,3-Dichlorobenzene	U		0.130	0.500	1	10/27/2019 16:28	WG1370146
1,4-Dichlorobenzene	U		0.121	0.500	1	10/27/2019 16:28	WG1370146
Dichlorodifluoromethane	U	UJ JO	0.127	2.50	1	10/27/2019 16:28	WG1370146
1,1-Dichloroethane	1.52		0.114	0.500	1	10/27/2019 16:28	WG1370146
1,2-Dichloroethane	0.605		0.108	0.500	1	10/27/2019 16:28	WG1370146
1,1-Dichloroethene	0.552		0.188	0.500	1	10/27/2019 16:28	WG1370146
cis-1,2-Dichloroethene	48.8		0.0933	0.500	1	10/27/2019 16:28	WG1370146
trans-1,2-Dichloroethene	0.220	J	0.152	0.500	1	10/27/2019 16:28	WG1370146
1,2-Dichloropropane	1.12		0.190	0.500	1	10/27/2019 16:28	WG1370146
1,1-Dichloropropene	U		0.128	0.500	1	10/27/2019 16:28	WG1370146
1,3-Dichloropropane	U		0.147	1.00	1	10/27/2019 16:28	WG1370146
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/27/2019 16:28	WG1370146
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/27/2019 16:28	WG1370146
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/27/2019 16:28	WG1370146
2,2-Dichloropropane	U		0.0929	0.500	1	10/27/2019 16:28	WG1370146
Di-isopropyl ether	U		0.0924	0.500	1	10/27/2019 16:28	WG1370146
Ethylbenzene	U		0.158	0.500	1	10/27/2019 16:28	WG1370146
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/27/2019 16:28	WG1370146
2-Hexanone	U		0.757	5.00	1	10/27/2019 16:28	WG1370146
n-Hexane	U		0.305	5.00	1	10/27/2019 16:28	WG1370146
Iodomethane	U	UJ JO	0.377	10.0	1	10/27/2019 16:28	WG1370146
Isopropylbenzene	U		0.126	0.500	1	10/27/2019 16:28	WG1370146
p-Isopropyltoluene	U		0.138	0.500	1	10/27/2019 16:28	WG1370146
2-Butanone (MEK)	U		1.28	5.00	1	10/27/2019 16:28	WG1370146
Methylene Chloride	U		1.07	2.50	1	10/27/2019 16:28	WG1370146
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/27/2019 16:28	WG1370146
Methyl tert-butyl ether	U		0.102	0.500	1	10/27/2019 16:28	WG1370146
Naphthalene	U		0.174	2.50	1	10/27/2019 16:28	WG1370146
n-Propylbenzene	U		0.162	0.500	1	10/27/2019 16:28	WG1370146
Styrene	U		0.117	0.500	1	10/27/2019 16:28	WG1370146
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/27/2019 16:28	WG1370146
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/27/2019 16:28	WG1370146
1,1,2-Trichlorotrifluoroethane	U	UJ JO	0.164	0.500	1	10/27/2019 16:28	WG1370146
Tetrachloroethene	61.5		0.199	0.500	1	10/27/2019 16:28	WG1370146
Toluene	U		0.412	0.500	1	10/27/2019 16:28	WG1370146
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/27/2019 16:28	WG1370146
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/27/2019 16:28	WG1370146
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/27/2019 16:28	WG1370146
1,1,2-Trichloroethane	U		0.186	0.500	1	10/27/2019 16:28	WG1370146
Trichloroethene	22.3		0.153	0.500	1	10/27/2019 16:28	WG1370146
Trichlorofluoromethane	U		0.130	2.50	1	10/27/2019 16:28	WG1370146
1,2,3-Trichloropropane	U		0.247	2.50	1	10/27/2019 16:28	WG1370146
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/27/2019 16:28	WG1370146
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/27/2019 16:28	WG1370146
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/27/2019 16:28	WG1370146

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/9/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/27/2019 16:28	WG1370146
Vinyl chloride	2.31		0.118	0.500	1	10/27/2019 16:28	WG1370146
Xylenes, Total	U		0.316	1.50	1	10/27/2019 16:28	WG1370146
<i>(S) Toluene-d8</i>	96.1			80.0-120		10/27/2019 16:28	WG1370146
<i>(S) 4-Bromofluorobenzene</i>	97.0			77.0-126		10/27/2019 16:28	WG1370146
<i>(S) 1,2-Dichloroethane-d4</i>	101			70.0-130		10/27/2019 16:28	WG1370146

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/9/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	183000		2710	20000	1	10/23/2019 19:49	WG1367736

Sample Narrative:

L1151401-05 WG1367736: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	8210		51.9	1000	1	10/18/2019 19:31	WG1365245
Nitrate	U		22.7	100	1	10/18/2019 19:31	WG1365245
Sulfate	2060	J	77.4	5000	1	10/18/2019 19:31	WG1365245

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2310	B	102	1000	1	10/22/2019 20:09	WG1367168

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	10500		15.0	100	1	10/23/2019 09:39	WG1366327
Manganese	522		0.250	5.00	1	10/23/2019 09:39	WG1366327

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/24/2019 19:35	WG1368064
(S) a,a,a-Trifluorotoluene(FID)	97.1			78.0-120		10/24/2019 19:35	WG1368064

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	537		0.287	0.678	1	10/22/2019 06:11	WG1366961
Ethane	U		0.296	1.29	1	10/22/2019 06:11	WG1366961
Ethene	U		0.422	1.27	1	10/22/2019 06:11	WG1366961

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch	
Acetone	3.26	U	J JO	1.05	25.0	1	10/26/2019 02:54	WG1369955
Acrylonitrile	U		0.873	5.00	1	10/26/2019 02:54	WG1369955	
Benzene	U		0.0896	0.500	1	10/26/2019 02:54	WG1369955	
Bromobenzene	U	UJ	JO	0.133	0.500	1	10/26/2019 02:54	WG1369955
Bromodichloromethane	U		0.0800	0.500	1	10/26/2019 02:54	WG1369955	
Bromochloromethane	U		0.145	0.500	1	10/26/2019 02:54	WG1369955	
Bromoform	U		0.186	0.500	1	10/26/2019 02:54	WG1369955	
Bromomethane	U		0.157	2.50	1	10/26/2019 02:54	WG1369955	
n-Butylbenzene	U		0.143	0.500	1	10/26/2019 02:54	WG1369955	
sec-Butylbenzene	U		0.134	0.500	1	10/26/2019 02:54	WG1369955	
tert-Butylbenzene	U		0.183	0.500	1	10/26/2019 02:54	WG1369955	
Carbon disulfide	U		0.101	0.500	1	10/26/2019 02:54	WG1369955	
Carbon tetrachloride	U		0.159	0.500	1	10/26/2019 02:54	WG1369955	

JC 12/9/19

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/26/2019 02:54	WG1369955
Chlorodibromomethane	U		0.128	0.500	1	10/26/2019 02:54	WG1369955
Chloroethane	U		0.141	2.50	1	10/26/2019 02:54	WG1369955
Chloroform	U		0.0860	0.500	1	10/26/2019 02:54	WG1369955
Chloromethane	U	UJ JO	0.153	1.25	1	10/26/2019 02:54	WG1369955
2-Chlorotoluene	U		0.111	0.500	1	10/26/2019 02:54	WG1369955
4-Chlorotoluene	U		0.0972	0.500	1	10/26/2019 02:54	WG1369955
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/26/2019 02:54	WG1369955
1,2-Dibromoethane	U		0.193	0.500	1	10/26/2019 02:54	WG1369955
Dibromomethane	U		0.117	0.500	1	10/26/2019 02:54	WG1369955
1,2-Dichlorobenzene	U		0.101	0.500	1	10/26/2019 02:54	WG1369955
1,3-Dichlorobenzene	U		0.130	0.500	1	10/26/2019 02:54	WG1369955
1,4-Dichlorobenzene	U		0.121	0.500	1	10/26/2019 02:54	WG1369955
Dichlorodifluoromethane	U		0.127	2.50	1	10/26/2019 02:54	WG1369955
1,1-Dichloroethane	U		0.114	0.500	1	10/26/2019 02:54	WG1369955
1,2-Dichloroethane	U		0.108	0.500	1	10/26/2019 02:54	WG1369955
1,1-Dichloroethene	U		0.188	0.500	1	10/26/2019 02:54	WG1369955
cis-1,2-Dichloroethene	0.445	J	0.0933	0.500	1	10/26/2019 02:54	WG1369955
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/26/2019 02:54	WG1369955
1,2-Dichloropropane	U		0.190	0.500	1	10/26/2019 02:54	WG1369955
1,1-Dichloropropene	U		0.128	0.500	1	10/26/2019 02:54	WG1369955
1,3-Dichloropropane	U		0.147	1.00	1	10/26/2019 02:54	WG1369955
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/26/2019 02:54	WG1369955
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/26/2019 02:54	WG1369955
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/26/2019 02:54	WG1369955
2,2-Dichloropropane	U		0.0929	0.500	1	10/26/2019 02:54	WG1369955
Di-isopropyl ether	U		0.0924	0.500	1	10/26/2019 02:54	WG1369955
Ethylbenzene	U		0.158	0.500	1	10/26/2019 02:54	WG1369955
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/26/2019 02:54	WG1369955
2-Hexanone	U		0.757	5.00	1	10/26/2019 02:54	WG1369955
n-Hexane	U		0.305	5.00	1	10/26/2019 02:54	WG1369955
Iodomethane	U		0.377	10.0	1	10/26/2019 02:54	WG1369955
Isopropylbenzene	U		0.126	0.500	1	10/26/2019 02:54	WG1369955
p-Isopropyltoluene	U		0.138	0.500	1	10/26/2019 02:54	WG1369955
2-Butanone (MEK)	U		1.28	5.00	1	10/26/2019 02:54	WG1369955
Methylene Chloride	U		1.07	2.50	1	10/26/2019 02:54	WG1369955
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/26/2019 02:54	WG1369955
Methyl tert-butyl ether	U		0.102	0.500	1	10/26/2019 02:54	WG1369955
Naphthalene	U		0.174	2.50	1	10/26/2019 02:54	WG1369955
n-Propylbenzene	U		0.162	0.500	1	10/26/2019 02:54	WG1369955
Styrene	U		0.117	0.500	1	10/26/2019 02:54	WG1369955
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/26/2019 02:54	WG1369955
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/26/2019 02:54	WG1369955
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/26/2019 02:54	WG1369955
Tetrachloroethene	U		0.199	0.500	1	10/26/2019 02:54	WG1369955
Toluene	U		0.412	0.500	1	10/26/2019 02:54	WG1369955
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/26/2019 02:54	WG1369955
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/26/2019 02:54	WG1369955
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/26/2019 02:54	WG1369955
1,1,2-Trichloroethane	U		0.186	0.500	1	10/26/2019 02:54	WG1369955
Trichloroethene	U		0.153	0.500	1	10/26/2019 02:54	WG1369955
Trichlorofluoromethane	U		0.130	2.50	1	10/26/2019 02:54	WG1369955
1,2,3-Trichloropropane	U		0.247	2.50	1	10/26/2019 02:54	WG1369955
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/26/2019 02:54	WG1369955
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/26/2019 02:54	WG1369955
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/26/2019 02:54	WG1369955

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/9/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/26/2019 02:54	WG1369955
Vinyl chloride	U		0.118	0.500	1	10/26/2019 02:54	WG1369955
Xylenes, Total	U		0.316	1.50	1	10/26/2019 02:54	WG1369955
<i>(S) Toluene-d8</i>	113			80.0-120		10/26/2019 02:54	WG1369955
<i>(S) 4-Bromofluorobenzene</i>	112			77.0-126		10/26/2019 02:54	WG1369955
<i>(S) 1,2-Dichloroethane-d4</i>	111			70.0-130		10/26/2019 02:54	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/9/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	133000		2710	20000	1	10/23/2019 19:57	WG1367736

Sample Narrative:

L1151401-06 WG1367736: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	27200		51.9	1000	1	10/18/2019 20:21	WG1365245
Nitrate	323		22.7	100	1	10/18/2019 20:21	WG1365245
Sulfate	71600		77.4	5000	1	10/18/2019 20:21	WG1365245

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1900	B	102	1000	1	10/22/2019 22:04	WG1367168

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	920		15.0	100	1	10/23/2019 09:42	WG1366327
Manganese	161		0.250	5.00	1	10/23/2019 09:42	WG1366327

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/24/2019 19:58	WG1368064
(S) a,a,a-Trifluorotoluene(FID)	96.6			78.0-120		10/24/2019 19:58	WG1368064

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	U		0.287	0.678	1	10/22/2019 06:13	WG1366961
Ethane	U		0.296	1.29	1	10/22/2019 06:13	WG1366961
Ethene	U		0.422	1.27	1	10/22/2019 06:13	WG1366961

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch	
Acetone	1.43	U	J JO	1.05	25.0	1	10/26/2019 03:15	WG1369955
Acrylonitrile	U		0.873	5.00	1	10/26/2019 03:15	WG1369955	
Benzene	U		0.0896	0.500	1	10/26/2019 03:15	WG1369955	
Bromobenzene	U	UJ	JO	0.133	0.500	1	10/26/2019 03:15	WG1369955
Bromodichloromethane	U		0.0800	0.500	1	10/26/2019 03:15	WG1369955	
Bromochloromethane	U		0.145	0.500	1	10/26/2019 03:15	WG1369955	
Bromoform	U		0.186	0.500	1	10/26/2019 03:15	WG1369955	
Bromomethane	U		0.157	2.50	1	10/26/2019 03:15	WG1369955	
n-Butylbenzene	U		0.143	0.500	1	10/26/2019 03:15	WG1369955	
sec-Butylbenzene	U		0.134	0.500	1	10/26/2019 03:15	WG1369955	
tert-Butylbenzene	U		0.183	0.500	1	10/26/2019 03:15	WG1369955	
Carbon disulfide	U		0.101	0.500	1	10/26/2019 03:15	WG1369955	
Carbon tetrachloride	U		0.159	0.500	1	10/26/2019 03:15	WG1369955	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/9/19



Collected date/time: 10/17/19 14:22

L1151401

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/26/2019 03:15	WG1369955
Chlorodibromomethane	U		0.128	0.500	1	10/26/2019 03:15	WG1369955
Chloroethane	U		0.141	2.50	1	10/26/2019 03:15	WG1369955
Chloroform	U		0.0860	0.500	1	10/26/2019 03:15	WG1369955
Chloromethane	U	UJ JO	0.153	1.25	1	10/26/2019 03:15	WG1369955
2-Chlorotoluene	U		0.111	0.500	1	10/26/2019 03:15	WG1369955
4-Chlorotoluene	U		0.0972	0.500	1	10/26/2019 03:15	WG1369955
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/26/2019 03:15	WG1369955
1,2-Dibromoethane	U		0.193	0.500	1	10/26/2019 03:15	WG1369955
Dibromomethane	U		0.117	0.500	1	10/26/2019 03:15	WG1369955
1,2-Dichlorobenzene	U		0.101	0.500	1	10/26/2019 03:15	WG1369955
1,3-Dichlorobenzene	U		0.130	0.500	1	10/26/2019 03:15	WG1369955
1,4-Dichlorobenzene	U		0.121	0.500	1	10/26/2019 03:15	WG1369955
Dichlorodifluoromethane	U		0.127	2.50	1	10/26/2019 03:15	WG1369955
1,1-Dichloroethane	0.547		0.114	0.500	1	10/26/2019 03:15	WG1369955
1,2-Dichloroethane	U		0.108	0.500	1	10/26/2019 03:15	WG1369955
1,1-Dichloroethene	U		0.188	0.500	1	10/26/2019 03:15	WG1369955
cis-1,2-Dichloroethene	0.656		0.0933	0.500	1	10/26/2019 03:15	WG1369955
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/26/2019 03:15	WG1369955
1,2-Dichloropropane	U		0.190	0.500	1	10/26/2019 03:15	WG1369955
1,1-Dichloropropene	U		0.128	0.500	1	10/26/2019 03:15	WG1369955
1,3-Dichloropropane	U		0.147	1.00	1	10/26/2019 03:15	WG1369955
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/26/2019 03:15	WG1369955
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/26/2019 03:15	WG1369955
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/26/2019 03:15	WG1369955
2,2-Dichloropropane	U		0.0929	0.500	1	10/26/2019 03:15	WG1369955
Di-isopropyl ether	U		0.0924	0.500	1	10/26/2019 03:15	WG1369955
Ethylbenzene	U		0.158	0.500	1	10/26/2019 03:15	WG1369955
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/26/2019 03:15	WG1369955
2-Hexanone	U		0.757	5.00	1	10/26/2019 03:15	WG1369955
n-Hexane	U		0.305	5.00	1	10/26/2019 03:15	WG1369955
Iodomethane	U		0.377	10.0	1	10/26/2019 03:15	WG1369955
Isopropylbenzene	U		0.126	0.500	1	10/26/2019 03:15	WG1369955
p-Isopropyltoluene	U		0.138	0.500	1	10/26/2019 03:15	WG1369955
2-Butanone (MEK)	U		1.28	5.00	1	10/26/2019 03:15	WG1369955
Methylene Chloride	U		1.07	2.50	1	10/26/2019 03:15	WG1369955
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/26/2019 03:15	WG1369955
Methyl tert-butyl ether	U		0.102	0.500	1	10/26/2019 03:15	WG1369955
Naphthalene	U		0.174	2.50	1	10/26/2019 03:15	WG1369955
n-Propylbenzene	U		0.162	0.500	1	10/26/2019 03:15	WG1369955
Styrene	U		0.117	0.500	1	10/26/2019 03:15	WG1369955
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/26/2019 03:15	WG1369955
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/26/2019 03:15	WG1369955
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/26/2019 03:15	WG1369955
Tetrachloroethene	U		0.199	0.500	1	10/26/2019 03:15	WG1369955
Toluene	U		0.412	0.500	1	10/26/2019 03:15	WG1369955
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/26/2019 03:15	WG1369955
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/26/2019 03:15	WG1369955
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/26/2019 03:15	WG1369955
1,1,2-Trichloroethane	U		0.186	0.500	1	10/26/2019 03:15	WG1369955
Trichloroethene	U		0.153	0.500	1	10/26/2019 03:15	WG1369955
Trichlorofluoromethane	U		0.130	2.50	1	10/26/2019 03:15	WG1369955
1,2,3-Trichloropropane	U		0.247	2.50	1	10/26/2019 03:15	WG1369955
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/26/2019 03:15	WG1369955
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/26/2019 03:15	WG1369955
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/26/2019 03:15	WG1369955

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/9/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/26/2019 03:15	WG1369955
Vinyl chloride	U		0.118	0.500	1	10/26/2019 03:15	WG1369955
Xylenes, Total	U		0.316	1.50	1	10/26/2019 03:15	WG1369955
<i>(S) Toluene-d8</i>	112			80.0-120		10/26/2019 03:15	WG1369955
<i>(S) 4-Bromofluorobenzene</i>	112			77.0-126		10/26/2019 03:15	WG1369955
<i>(S) 1,2-Dichloroethane-d4</i>	112			70.0-130		10/26/2019 03:15	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/9/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	409000		2710	20000	1	10/24/2019 17:52	WG1368516

Sample Narrative:

L1151886-01 WG1368516: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	22900		51.9	1000	1	10/19/2019 15:43	WG1365799
Nitrate	U		22.7	100	1	10/19/2019 15:43	WG1365799
Sulfate	5610		77.4	5000	1	10/19/2019 15:43	WG1365799

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	5560		102	1000	1	10/25/2019 13:47	WG1368322

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	5140		150	1000	10	10/28/2019 11:15	WG1366331
Manganese	1860		2.50	50.0	10	10/28/2019 11:15	WG1366331

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	4380		0.287	0.678	1	10/22/2019 08:04	WG1366962
Ethane	U		0.296	1.29	1	10/22/2019 08:04	WG1366962
Ethene	U		0.422	1.27	1	10/22/2019 08:04	WG1366962

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	3.19	J	1.05	25.0	1	10/26/2019 19:23	WG1370189
Acrylonitrile	U		0.873	5.00	1	10/26/2019 19:23	WG1370189
Benzene	U		0.0896	0.500	1	10/26/2019 19:23	WG1370189
Bromobenzene	U		0.133	0.500	1	10/26/2019 19:23	WG1370189
Bromodichloromethane	U		0.0800	0.500	1	10/26/2019 19:23	WG1370189
Bromochloromethane	U		0.145	0.500	1	10/26/2019 19:23	WG1370189
Bromoform	U		0.186	0.500	1	10/26/2019 19:23	WG1370189
Bromomethane	U	UJ JO	0.157	2.50	1	10/26/2019 19:23	WG1370189
n-Butylbenzene	U		0.143	0.500	1	10/26/2019 19:23	WG1370189
sec-Butylbenzene	U		0.134	0.500	1	10/26/2019 19:23	WG1370189
tert-Butylbenzene	U		0.183	0.500	1	10/26/2019 19:23	WG1370189
Carbon disulfide	U		0.101	0.500	1	10/26/2019 19:23	WG1370189
Carbon tetrachloride	U		0.159	0.500	1	10/26/2019 19:23	WG1370189
Chlorobenzene	U		0.140	0.500	1	10/26/2019 19:23	WG1370189
Chlorodibromomethane	U		0.128	0.500	1	10/26/2019 19:23	WG1370189
Chloroethane	U		0.141	2.50	1	10/26/2019 19:23	WG1370189
Chloroform	U		0.0860	0.500	1	10/26/2019 19:23	WG1370189
Chloromethane	U		0.153	1.25	1	10/26/2019 19:23	WG1370189
2-Chlorotoluene	U		0.111	0.500	1	10/26/2019 19:23	WG1370189
4-Chlorotoluene	U		0.0972	0.500	1	10/26/2019 19:23	WG1370189

JC 12/9/19

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/26/2019 19:23	WG1370189
1,2-Dibromoethane	U		0.193	0.500	1	10/26/2019 19:23	WG1370189
Dibromomethane	U		0.117	0.500	1	10/26/2019 19:23	WG1370189
1,2-Dichlorobenzene	U		0.101	0.500	1	10/26/2019 19:23	WG1370189
1,3-Dichlorobenzene	U		0.130	0.500	1	10/26/2019 19:23	WG1370189
1,4-Dichlorobenzene	U		0.121	0.500	1	10/26/2019 19:23	WG1370189
Dichlorodifluoromethane	U		0.127	2.50	1	10/26/2019 19:23	WG1370189
1,1-Dichloroethane	U		0.114	0.500	1	10/26/2019 19:23	WG1370189
1,2-Dichloroethane	U		0.108	0.500	1	10/26/2019 19:23	WG1370189
1,1-Dichloroethene	U		0.188	0.500	1	10/26/2019 19:23	WG1370189
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/26/2019 19:23	WG1370189
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/26/2019 19:23	WG1370189
1,2-Dichloropropane	U		0.190	0.500	1	10/26/2019 19:23	WG1370189
1,1-Dichloropropene	U		0.128	0.500	1	10/26/2019 19:23	WG1370189
1,3-Dichloropropane	U		0.147	1.00	1	10/26/2019 19:23	WG1370189
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/26/2019 19:23	WG1370189
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/26/2019 19:23	WG1370189
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/26/2019 19:23	WG1370189
2,2-Dichloropropane	U		0.0929	0.500	1	10/26/2019 19:23	WG1370189
Di-isopropyl ether	0.163	<u>J</u>	0.0924	0.500	1	10/26/2019 19:23	WG1370189
Ethylbenzene	U		0.158	0.500	1	10/26/2019 19:23	WG1370189
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/26/2019 19:23	WG1370189
2-Hexanone	U		0.757	5.00	1	10/26/2019 19:23	WG1370189
n-Hexane	U		0.305	5.00	1	10/26/2019 19:23	WG1370189
Iodomethane	U	<u>UJ</u> <u>JO</u>	0.377	10.0	1	10/26/2019 19:23	WG1370189
Isopropylbenzene	U	<u>UJ</u> <u>JO</u>	0.126	0.500	1	10/26/2019 19:23	WG1370189
p-Isopropyltoluene	U		0.138	0.500	1	10/26/2019 19:23	WG1370189
2-Butanone (MEK)	U		1.28	5.00	1	10/26/2019 19:23	WG1370189
Methylene Chloride	U		1.07	2.50	1	10/26/2019 19:23	WG1370189
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/26/2019 19:23	WG1370189
Methyl tert-butyl ether	U		0.102	0.500	1	10/26/2019 19:23	WG1370189
Naphthalene	U		0.174	2.50	1	10/26/2019 19:23	WG1370189
n-Propylbenzene	U		0.162	0.500	1	10/26/2019 19:23	WG1370189
Styrene	U		0.117	0.500	1	10/26/2019 19:23	WG1370189
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/26/2019 19:23	WG1370189
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/26/2019 19:23	WG1370189
1,1,2-Trichlorotrifluoroethane	U	<u>UJ</u> <u>JO</u>	0.164	0.500	1	10/26/2019 19:23	WG1370189
Tetrachloroethene	U		0.199	0.500	1	10/26/2019 19:23	WG1370189
Toluene	U		0.412	0.500	1	10/26/2019 19:23	WG1370189
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/26/2019 19:23	WG1370189
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/26/2019 19:23	WG1370189
1,1,1-Trichloroethane	U	<u>UJ</u> <u>JO</u>	0.0940	0.500	1	10/26/2019 19:23	WG1370189
1,1,2-Trichloroethane	U		0.186	0.500	1	10/26/2019 19:23	WG1370189
Trichloroethene	U	<u>UJ</u> <u>JO</u>	0.153	0.500	1	10/26/2019 19:23	WG1370189
Trichlorofluoromethane	U		0.130	2.50	1	10/26/2019 19:23	WG1370189
1,2,3-Trichloropropane	U		0.247	2.50	1	10/26/2019 19:23	WG1370189
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/26/2019 19:23	WG1370189
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/26/2019 19:23	WG1370189
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/26/2019 19:23	WG1370189
Vinyl acetate	U		0.645	5.00	1	10/26/2019 19:23	WG1370189
Vinyl chloride	U		0.118	0.500	1	10/26/2019 19:23	WG1370189
Xylenes, Total	U		0.316	1.50	1	10/26/2019 19:23	WG1370189
(S) Toluene-d8	97.6			80.0-120		10/26/2019 19:23	WG1370189
(S) 4-Bromofluorobenzene	93.7			77.0-126		10/26/2019 19:23	WG1370189
(S) 1,2-Dichloroethane-d4	101			70.0-130		10/26/2019 19:23	WG1370189

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/9/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	481000		2710	20000	1	10/24/2019 18:00	WG1368516

Sample Narrative:

L1151886-02 WG1368516: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	10900		51.9	1000	1	10/19/2019 16:34	WG1365799
Nitrate	31.9	J	22.7	100	1	10/19/2019 16:34	WG1365799
Sulfate	17100		77.4	5000	1	10/19/2019 16:34	WG1365799

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	15300		102	1000	1	10/25/2019 14:06	WG1368322

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	11700		300	2000	20	10/28/2019 11:19	WG1366331
Manganese	3670		5.00	100	20	10/28/2019 11:19	WG1366331

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/24/2019 23:09	WG1368064
(S) a,a,a-Trifluorotoluene(FID)	96.7			78.0-120		10/24/2019 23:09	WG1368064

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	997		0.287	0.678	1	10/22/2019 08:07	WG1366962
Ethane	U		0.296	1.29	1	10/22/2019 08:07	WG1366962
Ethene	U		0.422	1.27	1	10/22/2019 08:07	WG1366962

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.79	J	1.05	25.0	1	10/26/2019 19:43	WG1370189
Acrylonitrile	U		0.873	5.00	1	10/26/2019 19:43	WG1370189
Benzene	U		0.0896	0.500	1	10/26/2019 19:43	WG1370189
Bromobenzene	U		0.133	0.500	1	10/26/2019 19:43	WG1370189
Bromodichloromethane	U		0.0800	0.500	1	10/26/2019 19:43	WG1370189
Bromochloromethane	U		0.145	0.500	1	10/26/2019 19:43	WG1370189
Bromoform	U		0.186	0.500	1	10/26/2019 19:43	WG1370189
Bromomethane	U	UJ JO	0.157	2.50	1	10/26/2019 19:43	WG1370189
n-Butylbenzene	U		0.143	0.500	1	10/26/2019 19:43	WG1370189
sec-Butylbenzene	U		0.134	0.500	1	10/26/2019 19:43	WG1370189
tert-Butylbenzene	U		0.183	0.500	1	10/26/2019 19:43	WG1370189
Carbon disulfide	U		0.101	0.500	1	10/26/2019 19:43	WG1370189
Carbon tetrachloride	U		0.159	0.500	1	10/26/2019 19:43	WG1370189

JC 12/9/19

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/26/2019 19:43	WG1370189
Chlorodibromomethane	U		0.128	0.500	1	10/26/2019 19:43	WG1370189
Chloroethane	U		0.141	2.50	1	10/26/2019 19:43	WG1370189
Chloroform	U		0.0860	0.500	1	10/26/2019 19:43	WG1370189
Chloromethane	U		0.153	1.25	1	10/26/2019 19:43	WG1370189
2-Chlorotoluene	U		0.111	0.500	1	10/26/2019 19:43	WG1370189
4-Chlorotoluene	U		0.0972	0.500	1	10/26/2019 19:43	WG1370189
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/26/2019 19:43	WG1370189
1,2-Dibromoethane	U		0.193	0.500	1	10/26/2019 19:43	WG1370189
Dibromomethane	U		0.117	0.500	1	10/26/2019 19:43	WG1370189
1,2-Dichlorobenzene	U		0.101	0.500	1	10/26/2019 19:43	WG1370189
1,3-Dichlorobenzene	U		0.130	0.500	1	10/26/2019 19:43	WG1370189
1,4-Dichlorobenzene	U		0.121	0.500	1	10/26/2019 19:43	WG1370189
Dichlorodifluoromethane	U		0.127	2.50	1	10/26/2019 19:43	WG1370189
1,1-Dichloroethane	U		0.114	0.500	1	10/26/2019 19:43	WG1370189
1,2-Dichloroethane	U		0.108	0.500	1	10/26/2019 19:43	WG1370189
1,1-Dichloroethene	U		0.188	0.500	1	10/26/2019 19:43	WG1370189
cis-1,2-Dichloroethene	0.496	U	0.0933	0.500	1	10/26/2019 19:43	WG1370189
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/26/2019 19:43	WG1370189
1,2-Dichloropropane	U		0.190	0.500	1	10/26/2019 19:43	WG1370189
1,1-Dichloropropene	U		0.128	0.500	1	10/26/2019 19:43	WG1370189
1,3-Dichloropropane	U		0.147	1.00	1	10/26/2019 19:43	WG1370189
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/26/2019 19:43	WG1370189
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/26/2019 19:43	WG1370189
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/26/2019 19:43	WG1370189
2,2-Dichloropropane	U		0.0929	0.500	1	10/26/2019 19:43	WG1370189
Di-isopropyl ether	U		0.0924	0.500	1	10/26/2019 19:43	WG1370189
Ethylbenzene	U		0.158	0.500	1	10/26/2019 19:43	WG1370189
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/26/2019 19:43	WG1370189
2-Hexanone	U		0.757	5.00	1	10/26/2019 19:43	WG1370189
n-Hexane	U		0.305	5.00	1	10/26/2019 19:43	WG1370189
Iodomethane	U	UJ JO	0.377	10.0	1	10/26/2019 19:43	WG1370189
Isopropylbenzene	U	UJ JO	0.126	0.500	1	10/26/2019 19:43	WG1370189
p-Isopropyltoluene	U		0.138	0.500	1	10/26/2019 19:43	WG1370189
2-Butanone (MEK)	U		1.28	5.00	1	10/26/2019 19:43	WG1370189
Methylene Chloride	U		1.07	2.50	1	10/26/2019 19:43	WG1370189
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/26/2019 19:43	WG1370189
Methyl tert-butyl ether	U		0.102	0.500	1	10/26/2019 19:43	WG1370189
Naphthalene	U		0.174	2.50	1	10/26/2019 19:43	WG1370189
n-Propylbenzene	U		0.162	0.500	1	10/26/2019 19:43	WG1370189
Styrene	U		0.117	0.500	1	10/26/2019 19:43	WG1370189
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/26/2019 19:43	WG1370189
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/26/2019 19:43	WG1370189
1,1,2-Trichlorotrifluoroethane	U	UJ JO	0.164	0.500	1	10/26/2019 19:43	WG1370189
Tetrachloroethene	U		0.199	0.500	1	10/26/2019 19:43	WG1370189
Toluene	U		0.412	0.500	1	10/26/2019 19:43	WG1370189
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/26/2019 19:43	WG1370189
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/26/2019 19:43	WG1370189
1,1,1-Trichloroethane	U	UJ JO	0.0940	0.500	1	10/26/2019 19:43	WG1370189
1,1,2-Trichloroethane	U		0.186	0.500	1	10/26/2019 19:43	WG1370189
Trichloroethene	U	UJ JO	0.153	0.500	1	10/26/2019 19:43	WG1370189
Trichlorofluoromethane	U		0.130	2.50	1	10/26/2019 19:43	WG1370189
1,2,3-Trichloropropane	U		0.247	2.50	1	10/26/2019 19:43	WG1370189
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/26/2019 19:43	WG1370189
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/26/2019 19:43	WG1370189
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/26/2019 19:43	WG1370189

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/9/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/26/2019 19:43	WG1370189
Vinyl chloride	U		0.118	0.500	1	10/26/2019 19:43	WG1370189
Xylenes, Total	U		0.316	1.50	1	10/26/2019 19:43	WG1370189
<i>(S) Toluene-d8</i>	95.8			80.0-120		10/26/2019 19:43	WG1370189
<i>(S) 4-Bromofluorobenzene</i>	91.8			77.0-126		10/26/2019 19:43	WG1370189
<i>(S) 1,2-Dichloroethane-d4</i>	101			70.0-130		10/26/2019 19:43	WG1370189

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/9/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	1230000		2710	20000	1	10/24/2019 18:07	WG1368516

Sample Narrative:

L1151886-03 WG1368516: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	89500		51.9	1000	1	10/19/2019 17:00	WG1365799
Nitrate	U		22.7	100	1	10/19/2019 17:00	WG1365799
Sulfate	U		77.4	5000	1	10/19/2019 17:00	WG1365799

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	37600		102	1000	1	10/25/2019 14:25	WG1368322

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	20500		300	2000	20	10/28/2019 11:22	WG1366331
Manganese	3820		5.00	100	20	10/28/2019 11:22	WG1366331

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		316	1000	10	10/24/2019 23:55	WG1368064
(S) <i>a,a</i> -Trifluorotoluene(FID)	97.4			78.0-120		10/24/2019 23:55	WG1368064

Sample Narrative:

L1151886-03 WG1368064: Elevated RL due to foamy matrix.

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	32100		2.87	6.78	10	10/22/2019 08:59	WG1366962
Ethane	42.0		2.96	12.9	10	10/22/2019 08:59	WG1366962
Ethene	U		4.22	12.7	10	10/22/2019 08:59	WG1366962

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	2.54	J	1.05	25.0	1	10/26/2019 20:02	WG1370189
Acrylonitrile	U		0.873	5.00	1	10/26/2019 20:02	WG1370189
Benzene	U		0.0896	0.500	1	10/26/2019 20:02	WG1370189
Bromobenzene	U		0.133	0.500	1	10/26/2019 20:02	WG1370189
Bromodichloromethane	U		0.0800	0.500	1	10/26/2019 20:02	WG1370189
Bromochloromethane	U		0.145	0.500	1	10/26/2019 20:02	WG1370189
Bromoform	U		0.186	0.500	1	10/26/2019 20:02	WG1370189
Bromomethane	U	UJ JO	0.157	2.50	1	10/26/2019 20:02	WG1370189
n-Butylbenzene	U		0.143	0.500	1	10/26/2019 20:02	WG1370189
sec-Butylbenzene	U		0.134	0.500	1	10/26/2019 20:02	WG1370189

JC 12/9/19

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/18/19 12:10

L1151886

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
tert-Butylbenzene	U		0.183	0.500	1	10/26/2019 20:02	WG1370189
Carbon disulfide	0.262	<u>J</u>	0.101	0.500	1	10/26/2019 20:02	WG1370189
Carbon tetrachloride	U		0.159	0.500	1	10/26/2019 20:02	WG1370189
Chlorobenzene	U		0.140	0.500	1	10/26/2019 20:02	WG1370189
Chlorodibromomethane	U		0.128	0.500	1	10/26/2019 20:02	WG1370189
Chloroethane	U		0.141	2.50	1	10/26/2019 20:02	WG1370189
Chloroform	U		0.0860	0.500	1	10/26/2019 20:02	WG1370189
Chloromethane	U		0.153	1.25	1	10/26/2019 20:02	WG1370189
2-Chlorotoluene	U		0.111	0.500	1	10/26/2019 20:02	WG1370189
4-Chlorotoluene	U		0.0972	0.500	1	10/26/2019 20:02	WG1370189
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/26/2019 20:02	WG1370189
1,2-Dibromoethane	U		0.193	0.500	1	10/26/2019 20:02	WG1370189
Dibromomethane	U		0.117	0.500	1	10/26/2019 20:02	WG1370189
1,2-Dichlorobenzene	U		0.101	0.500	1	10/26/2019 20:02	WG1370189
1,3-Dichlorobenzene	U		0.130	0.500	1	10/26/2019 20:02	WG1370189
1,4-Dichlorobenzene	U		0.121	0.500	1	10/26/2019 20:02	WG1370189
Dichlorodifluoromethane	U		0.127	2.50	1	10/26/2019 20:02	WG1370189
1,1-Dichloroethane	U		0.114	0.500	1	10/26/2019 20:02	WG1370189
1,2-Dichloroethane	U		0.108	0.500	1	10/26/2019 20:02	WG1370189
1,1-Dichloroethene	U		0.188	0.500	1	10/26/2019 20:02	WG1370189
cis-1,2-Dichloroethene	2.07		0.0933	0.500	1	10/26/2019 20:02	WG1370189
trans-1,2-Dichloroethene	0.278	<u>J</u>	0.152	0.500	1	10/26/2019 20:02	WG1370189
1,2-Dichloropropane	U		0.190	0.500	1	10/26/2019 20:02	WG1370189
1,1-Dichloropropene	U		0.128	0.500	1	10/26/2019 20:02	WG1370189
1,3-Dichloropropane	U		0.147	1.00	1	10/26/2019 20:02	WG1370189
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/26/2019 20:02	WG1370189
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/26/2019 20:02	WG1370189
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/26/2019 20:02	WG1370189
2,2-Dichloropropane	U		0.0929	0.500	1	10/26/2019 20:02	WG1370189
Di-isopropyl ether	U		0.0924	0.500	1	10/26/2019 20:02	WG1370189
Ethylbenzene	U		0.158	0.500	1	10/26/2019 20:02	WG1370189
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/26/2019 20:02	WG1370189
2-Hexanone	U		0.757	5.00	1	10/26/2019 20:02	WG1370189
n-Hexane	U		0.305	5.00	1	10/26/2019 20:02	WG1370189
Iodomethane	U	<u>UJ</u> <u>JO</u>	0.377	10.0	1	10/26/2019 20:02	WG1370189
Isopropylbenzene	U	<u>UJ</u> <u>JO</u>	0.126	0.500	1	10/26/2019 20:02	WG1370189
p-Isopropyltoluene	U		0.138	0.500	1	10/26/2019 20:02	WG1370189
2-Butanone (MEK)	U		1.28	5.00	1	10/26/2019 20:02	WG1370189
Methylene Chloride	U		1.07	2.50	1	10/26/2019 20:02	WG1370189
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/26/2019 20:02	WG1370189
Methyl tert-butyl ether	U		0.102	0.500	1	10/26/2019 20:02	WG1370189
Naphthalene	U		0.174	2.50	1	10/26/2019 20:02	WG1370189
n-Propylbenzene	U		0.162	0.500	1	10/26/2019 20:02	WG1370189
Styrene	U		0.117	0.500	1	10/26/2019 20:02	WG1370189
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/26/2019 20:02	WG1370189
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/26/2019 20:02	WG1370189
1,1,2-Trichlorotrifluoroethane	U	<u>UJ</u> <u>JO</u>	0.164	0.500	1	10/26/2019 20:02	WG1370189
Tetrachloroethene	U		0.199	0.500	1	10/26/2019 20:02	WG1370189
Toluene	1.79		0.412	0.500	1	10/26/2019 20:02	WG1370189
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/26/2019 20:02	WG1370189
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/26/2019 20:02	WG1370189
1,1,1-Trichloroethane	U	<u>UJ</u> <u>JO</u>	0.0940	0.500	1	10/26/2019 20:02	WG1370189
1,1,2-Trichloroethane	U		0.186	0.500	1	10/26/2019 20:02	WG1370189
Trichloroethene	U	<u>UJ</u> <u>JO</u>	0.153	0.500	1	10/26/2019 20:02	WG1370189
Trichlorofluoromethane	U		0.130	2.50	1	10/26/2019 20:02	WG1370189
1,2,3-Trichloropropane	U		0.247	2.50	1	10/26/2019 20:02	WG1370189

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/9/19

ACCOUNT:

PES Environmental, Inc.- WA

PROJECT:

1413.001.02.501E

SDG:

L1151886

DATE/TIME:

10/29/19 15:07

PAGE:

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/26/2019 20:02	WG1370189
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/26/2019 20:02	WG1370189
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/26/2019 20:02	WG1370189
Vinyl acetate	U		0.645	5.00	1	10/26/2019 20:02	WG1370189
Vinyl chloride	3.56		0.118	0.500	1	10/26/2019 20:02	WG1370189
Xylenes, Total	U		0.316	1.50	1	10/26/2019 20:02	WG1370189
(S) Toluene-d8	91.6			80.0-120		10/26/2019 20:02	WG1370189
(S) 4-Bromofluorobenzene	89.3			77.0-126		10/26/2019 20:02	WG1370189
(S) 1,2-Dichloroethane-d4	106			70.0-130		10/26/2019 20:02	WG1370189

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/9/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	203000		2710	20000	1	10/24/2019 18:16	WG1368516

Sample Narrative:

L1151886-04 WG1368516: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	13500		51.9	1000	1	10/19/2019 17:26	WG1365799
Nitrate	U		22.7	100	1	10/19/2019 17:26	WG1365799
Sulfate	5970		77.4	5000	1	10/19/2019 17:26	WG1365799

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2300	B	102	1000	1	10/25/2019 15:55	WG1368322

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	1330		150	1000	10	10/28/2019 11:25	WG1366331
Manganese	268		2.50	50.0	10	10/28/2019 11:25	WG1366331

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/25/2019 00:23	WG1368064
(S) a,a,a-Trifluorotoluene(FID)	96.6			78.0-120		10/25/2019 00:23	WG1368064

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	316		0.287	0.678	1	10/22/2019 08:26	WG1366962
Ethane	U		0.296	1.29	1	10/22/2019 08:26	WG1366962
Ethene	23.7		0.422	1.27	1	10/22/2019 08:26	WG1366962

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	2.88	J	1.05	25.0	1	10/26/2019 20:22	WG1370189
Acrylonitrile	U		0.873	5.00	1	10/26/2019 20:22	WG1370189
Benzene	U		0.0896	0.500	1	10/26/2019 20:22	WG1370189
Bromobenzene	U		0.133	0.500	1	10/26/2019 20:22	WG1370189
Bromodichloromethane	U		0.0800	0.500	1	10/26/2019 20:22	WG1370189
Bromochloromethane	U		0.145	0.500	1	10/26/2019 20:22	WG1370189
Bromoform	U		0.186	0.500	1	10/26/2019 20:22	WG1370189
Bromomethane	U	UJ JO	0.157	2.50	1	10/26/2019 20:22	WG1370189
n-Butylbenzene	U		0.143	0.500	1	10/26/2019 20:22	WG1370189
sec-Butylbenzene	U		0.134	0.500	1	10/26/2019 20:22	WG1370189
tert-Butylbenzene	U		0.183	0.500	1	10/26/2019 20:22	WG1370189
Carbon disulfide	U		0.101	0.500	1	10/26/2019 20:22	WG1370189
Carbon tetrachloride	U		0.159	0.500	1	10/26/2019 20:22	WG1370189

JC 12/9/19

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc



Collected date/time: 10/18/19 13:00

L1151886

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/26/2019 20:22	WG1370189
Chlorodibromomethane	U		0.128	0.500	1	10/26/2019 20:22	WG1370189
Chloroethane	U		0.141	2.50	1	10/26/2019 20:22	WG1370189
Chloroform	U		0.0860	0.500	1	10/26/2019 20:22	WG1370189
Chloromethane	U		0.153	1.25	1	10/26/2019 20:22	WG1370189
2-Chlorotoluene	U		0.111	0.500	1	10/26/2019 20:22	WG1370189
4-Chlorotoluene	U		0.0972	0.500	1	10/26/2019 20:22	WG1370189
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/26/2019 20:22	WG1370189
1,2-Dibromoethane	U		0.193	0.500	1	10/26/2019 20:22	WG1370189
Dibromomethane	U		0.117	0.500	1	10/26/2019 20:22	WG1370189
1,2-Dichlorobenzene	U		0.101	0.500	1	10/26/2019 20:22	WG1370189
1,3-Dichlorobenzene	U		0.130	0.500	1	10/26/2019 20:22	WG1370189
1,4-Dichlorobenzene	U		0.121	0.500	1	10/26/2019 20:22	WG1370189
Dichlorodifluoromethane	U		0.127	2.50	1	10/26/2019 20:22	WG1370189
1,1-Dichloroethane	U		0.114	0.500	1	10/26/2019 20:22	WG1370189
1,2-Dichloroethane	U		0.108	0.500	1	10/26/2019 20:22	WG1370189
1,1-Dichloroethene	0.799		0.188	0.500	1	10/26/2019 20:22	WG1370189
cis-1,2-Dichloroethene	16.3		0.0933	0.500	1	10/26/2019 20:22	WG1370189
trans-1,2-Dichloroethene	0.329	J	0.152	0.500	1	10/26/2019 20:22	WG1370189
1,2-Dichloropropane	U		0.190	0.500	1	10/26/2019 20:22	WG1370189
1,1-Dichloropropene	U		0.128	0.500	1	10/26/2019 20:22	WG1370189
1,3-Dichloropropane	U		0.147	1.00	1	10/26/2019 20:22	WG1370189
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/26/2019 20:22	WG1370189
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/26/2019 20:22	WG1370189
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/26/2019 20:22	WG1370189
2,2-Dichloropropane	U		0.0929	0.500	1	10/26/2019 20:22	WG1370189
Di-isopropyl ether	U		0.0924	0.500	1	10/26/2019 20:22	WG1370189
Ethylbenzene	U		0.158	0.500	1	10/26/2019 20:22	WG1370189
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/26/2019 20:22	WG1370189
2-Hexanone	U		0.757	5.00	1	10/26/2019 20:22	WG1370189
n-Hexane	U		0.305	5.00	1	10/26/2019 20:22	WG1370189
Iodomethane	U	UJ JO	0.377	10.0	1	10/26/2019 20:22	WG1370189
Isopropylbenzene	U	UJ JO	0.126	0.500	1	10/26/2019 20:22	WG1370189
p-Isopropyltoluene	U		0.138	0.500	1	10/26/2019 20:22	WG1370189
2-Butanone (MEK)	U		1.28	5.00	1	10/26/2019 20:22	WG1370189
Methylene Chloride	U		1.07	2.50	1	10/26/2019 20:22	WG1370189
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/26/2019 20:22	WG1370189
Methyl tert-butyl ether	U		0.102	0.500	1	10/26/2019 20:22	WG1370189
Naphthalene	U		0.174	2.50	1	10/26/2019 20:22	WG1370189
n-Propylbenzene	U		0.162	0.500	1	10/26/2019 20:22	WG1370189
Styrene	U		0.117	0.500	1	10/26/2019 20:22	WG1370189
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/26/2019 20:22	WG1370189
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/26/2019 20:22	WG1370189
1,1,2-Trichlorotrifluoroethane	U	UJ JO	0.164	0.500	1	10/26/2019 20:22	WG1370189
Tetrachloroethene	U		0.199	0.500	1	10/26/2019 20:22	WG1370189
Toluene	U		0.412	0.500	1	10/26/2019 20:22	WG1370189
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/26/2019 20:22	WG1370189
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/26/2019 20:22	WG1370189
1,1,1-Trichloroethane	U	UJ JO	0.0940	0.500	1	10/26/2019 20:22	WG1370189
1,1,2-Trichloroethane	U		0.186	0.500	1	10/26/2019 20:22	WG1370189
Trichloroethene	1.54	J JO	0.153	0.500	1	10/26/2019 20:22	WG1370189
Trichlorofluoromethane	U		0.130	2.50	1	10/26/2019 20:22	WG1370189
1,2,3-Trichloropropane	U		0.247	2.50	1	10/26/2019 20:22	WG1370189
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/26/2019 20:22	WG1370189
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/26/2019 20:22	WG1370189
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/26/2019 20:22	WG1370189

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/26/2019 20:22	WG1370189
Vinyl chloride	33.2		0.118	0.500	1	10/26/2019 20:22	WG1370189
Xylenes, Total	U		0.316	1.50	1	10/26/2019 20:22	WG1370189
<i>(S) Toluene-d8</i>	94.7			80.0-120		10/26/2019 20:22	WG1370189
<i>(S) 4-Bromofluorobenzene</i>	91.6			77.0-126		10/26/2019 20:22	WG1370189
<i>(S) 1,2-Dichloroethane-d4</i>	101			70.0-130		10/26/2019 20:22	WG1370189

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/9/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	276000		2710	20000	1	10/24/2019 18:24	WG1368516

Sample Narrative:

L1151886-05 WG1368516: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	25800		51.9	1000	1	10/19/2019 17:38	WG1365799
Nitrate	U		22.7	100	1	10/19/2019 17:38	WG1365799
Sulfate	17000		77.4	5000	1	10/19/2019 17:38	WG1365799

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2320	B	102	1000	1	10/25/2019 16:09	WG1368322

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	2640		150	1000	10	10/28/2019 11:29	WG1366331
Manganese	792		2.50	50.0	10	10/28/2019 11:29	WG1366331

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/25/2019 00:50	WG1368064
(S) a,a,a-Trifluorotoluene(FID)	94.0			78.0-120		10/25/2019 00:50	WG1368064

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	47.2		0.287	0.678	1	10/22/2019 08:30	WG1366962
Ethane	U		0.296	1.29	1	10/22/2019 08:30	WG1366962
Ethene	U		0.422	1.27	1	10/22/2019 08:30	WG1366962

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	2.01	J	1.05	25.0	1	10/26/2019 20:42	WG1370189
Acrylonitrile	U		0.873	5.00	1	10/26/2019 20:42	WG1370189
Benzene	U		0.0896	0.500	1	10/26/2019 20:42	WG1370189
Bromobenzene	U		0.133	0.500	1	10/26/2019 20:42	WG1370189
Bromodichloromethane	U		0.0800	0.500	1	10/26/2019 20:42	WG1370189
Bromochloromethane	U		0.145	0.500	1	10/26/2019 20:42	WG1370189
Bromoform	U		0.186	0.500	1	10/26/2019 20:42	WG1370189
Bromomethane	U	UJ JO	0.157	2.50	1	10/26/2019 20:42	WG1370189
n-Butylbenzene	U		0.143	0.500	1	10/26/2019 20:42	WG1370189
sec-Butylbenzene	U		0.134	0.500	1	10/26/2019 20:42	WG1370189
tert-Butylbenzene	U		0.183	0.500	1	10/26/2019 20:42	WG1370189
Carbon disulfide	U		0.101	0.500	1	10/26/2019 20:42	WG1370189
Carbon tetrachloride	U		0.159	0.500	1	10/26/2019 20:42	WG1370189

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/26/2019 20:42	WG1370189
Chlorodibromomethane	U		0.128	0.500	1	10/26/2019 20:42	WG1370189
Chloroethane	U		0.141	2.50	1	10/26/2019 20:42	WG1370189
Chloroform	U		0.0860	0.500	1	10/26/2019 20:42	WG1370189
Chloromethane	U		0.153	1.25	1	10/26/2019 20:42	WG1370189
2-Chlorotoluene	U		0.111	0.500	1	10/26/2019 20:42	WG1370189
4-Chlorotoluene	U		0.0972	0.500	1	10/26/2019 20:42	WG1370189
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/26/2019 20:42	WG1370189
1,2-Dibromoethane	U		0.193	0.500	1	10/26/2019 20:42	WG1370189
Dibromomethane	U		0.117	0.500	1	10/26/2019 20:42	WG1370189
1,2-Dichlorobenzene	U		0.101	0.500	1	10/26/2019 20:42	WG1370189
1,3-Dichlorobenzene	U		0.130	0.500	1	10/26/2019 20:42	WG1370189
1,4-Dichlorobenzene	U		0.121	0.500	1	10/26/2019 20:42	WG1370189
Dichlorodifluoromethane	U		0.127	2.50	1	10/26/2019 20:42	WG1370189
1,1-Dichloroethane	U		0.114	0.500	1	10/26/2019 20:42	WG1370189
1,2-Dichloroethane	U		0.108	0.500	1	10/26/2019 20:42	WG1370189
1,1-Dichloroethene	U		0.188	0.500	1	10/26/2019 20:42	WG1370189
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/26/2019 20:42	WG1370189
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/26/2019 20:42	WG1370189
1,2-Dichloropropane	U		0.190	0.500	1	10/26/2019 20:42	WG1370189
1,1-Dichloropropene	U		0.128	0.500	1	10/26/2019 20:42	WG1370189
1,3-Dichloropropane	U		0.147	1.00	1	10/26/2019 20:42	WG1370189
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/26/2019 20:42	WG1370189
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/26/2019 20:42	WG1370189
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/26/2019 20:42	WG1370189
2,2-Dichloropropane	U		0.0929	0.500	1	10/26/2019 20:42	WG1370189
Di-isopropyl ether	U		0.0924	0.500	1	10/26/2019 20:42	WG1370189
Ethylbenzene	U		0.158	0.500	1	10/26/2019 20:42	WG1370189
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/26/2019 20:42	WG1370189
2-Hexanone	U		0.757	5.00	1	10/26/2019 20:42	WG1370189
n-Hexane	U		0.305	5.00	1	10/26/2019 20:42	WG1370189
Iodomethane	U	UJ JO	0.377	10.0	1	10/26/2019 20:42	WG1370189
Isopropylbenzene	U	UJ JO	0.126	0.500	1	10/26/2019 20:42	WG1370189
p-Isopropyltoluene	U		0.138	0.500	1	10/26/2019 20:42	WG1370189
2-Butanone (MEK)	U		1.28	5.00	1	10/26/2019 20:42	WG1370189
Methylene Chloride	U		1.07	2.50	1	10/26/2019 20:42	WG1370189
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/26/2019 20:42	WG1370189
Methyl tert-butyl ether	U		0.102	0.500	1	10/26/2019 20:42	WG1370189
Naphthalene	U		0.174	2.50	1	10/26/2019 20:42	WG1370189
n-Propylbenzene	U		0.162	0.500	1	10/26/2019 20:42	WG1370189
Styrene	U		0.117	0.500	1	10/26/2019 20:42	WG1370189
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/26/2019 20:42	WG1370189
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/26/2019 20:42	WG1370189
1,1,2-Trichlorotrifluoroethane	U	UJ JO	0.164	0.500	1	10/26/2019 20:42	WG1370189
Tetrachloroethene	U		0.199	0.500	1	10/26/2019 20:42	WG1370189
Toluene	U		0.412	0.500	1	10/26/2019 20:42	WG1370189
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/26/2019 20:42	WG1370189
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/26/2019 20:42	WG1370189
1,1,1-Trichloroethane	U	UJ JO	0.0940	0.500	1	10/26/2019 20:42	WG1370189
1,1,2-Trichloroethane	U		0.186	0.500	1	10/26/2019 20:42	WG1370189
Trichloroethene	U	UJ JO	0.153	0.500	1	10/26/2019 20:42	WG1370189
Trichlorofluoromethane	U		0.130	2.50	1	10/26/2019 20:42	WG1370189
1,2,3-Trichloropropane	U		0.247	2.50	1	10/26/2019 20:42	WG1370189
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/26/2019 20:42	WG1370189
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/26/2019 20:42	WG1370189
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/26/2019 20:42	WG1370189

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/9/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/26/2019 20:42	WG1370189
Vinyl chloride	U		0.118	0.500	1	10/26/2019 20:42	WG1370189
Xylenes, Total	U		0.316	1.50	1	10/26/2019 20:42	WG1370189
<i>(S) Toluene-d8</i>	94.4			80.0-120		10/26/2019 20:42	WG1370189
<i>(S) 4-Bromofluorobenzene</i>	92.6			77.0-126		10/26/2019 20:42	WG1370189
<i>(S) 1,2-Dichloroethane-d4</i>	105			70.0-130		10/26/2019 20:42	WG1370189

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/9/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	589000		2710	20000	1	10/24/2019 21:24	WG1369144

Sample Narrative:

L1152333-01 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	14700		51.9	1000	1	10/23/2019 02:15	WG1367181
Nitrate	U		22.7	100	1	10/23/2019 02:15	WG1367181
Sulfate	2760	J	77.4	5000	1	10/23/2019 02:15	WG1367181

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	7550		102	1000	1	10/24/2019 22:09	WG1368783

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	16500		15.0	100	1	10/26/2019 16:13	WG1368592
Manganese	2820		0.250	5.00	1	10/26/2019 16:13	WG1368592

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	21400		2.87	6.78	10	10/24/2019 11:33	WG1368615
Ethane	U		0.296	1.29	1	10/23/2019 12:12	WG1367825
Ethene	U		0.422	1.27	1	10/23/2019 12:12	WG1367825

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.45	J J4	1.05	25.0	1	10/29/2019 05:43	WG1371177
Acrylonitrile	U	J4	0.873	5.00	1	10/29/2019 05:43	WG1371177
Benzene	U		0.0896	0.500	1	10/29/2019 05:43	WG1371177
Bromobenzene	U		0.133	0.500	1	10/29/2019 05:43	WG1371177
Bromodichloromethane	U	J4	0.0800	0.500	1	10/29/2019 05:43	WG1371177
Bromochloromethane	U		0.145	0.500	1	10/29/2019 05:43	WG1371177
Bromoform	U		0.186	0.500	1	10/29/2019 05:43	WG1371177
Bromomethane	U		0.157	2.50	1	10/29/2019 05:43	WG1371177
n-Butylbenzene	U		0.143	0.500	1	10/29/2019 05:43	WG1371177
sec-Butylbenzene	U		0.134	0.500	1	10/29/2019 05:43	WG1371177
tert-Butylbenzene	U		0.183	0.500	1	10/29/2019 05:43	WG1371177
Carbon disulfide	U		0.101	0.500	1	10/29/2019 05:43	WG1371177
Carbon tetrachloride	U		0.159	0.500	1	10/29/2019 05:43	WG1371177
Chlorobenzene	U		0.140	0.500	1	10/29/2019 05:43	WG1371177
Chlorodibromomethane	U		0.128	0.500	1	10/29/2019 05:43	WG1371177
Chloroethane	U		0.141	2.50	1	10/29/2019 05:43	WG1371177
Chloroform	U		0.0860	0.500	1	10/29/2019 05:43	WG1371177
Chloromethane	U	UJ JO	0.153	1.25	1	10/29/2019 05:43	WG1371177
2-Chlorotoluene	U		0.111	0.500	1	10/29/2019 05:43	WG1371177
4-Chlorotoluene	U		0.0972	0.500	1	10/29/2019 05:43	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/9/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 05:43	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 05:43	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 05:43	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 05:43	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 05:43	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 05:43	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 05:43	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 05:43	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 05:43	WG1371177
1,1-Dichloroethene	U		0.188	0.500	1	10/29/2019 05:43	WG1371177
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/29/2019 05:43	WG1371177
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/29/2019 05:43	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 05:43	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 05:43	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 05:43	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 05:43	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 05:43	WG1371177
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/29/2019 05:43	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 05:43	WG1371177
Di-isopropyl ether	U	UJ JO	0.0924	0.500	1	10/29/2019 05:43	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 05:43	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 05:43	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 05:43	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 05:43	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 05:43	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 05:43	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 05:43	WG1371177
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	10/29/2019 05:43	WG1371177
Methylene Chloride	U		1.07	2.50	1	10/29/2019 05:43	WG1371177
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/29/2019 05:43	WG1371177
Methyl tert-butyl ether	U		0.102	0.500	1	10/29/2019 05:43	WG1371177
Naphthalene	0.239	J	0.174	2.50	1	10/29/2019 05:43	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 05:43	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 05:43	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 05:43	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 05:43	WG1371177
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 05:43	WG1371177
Tetrachloroethene	U		0.199	0.500	1	10/29/2019 05:43	WG1371177
Toluene	U		0.412	0.500	1	10/29/2019 05:43	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 05:43	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 05:43	WG1371177
1,1,1-Trichloroethane	U	J	0.0940	0.500	1	10/29/2019 05:43	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 05:43	WG1371177
Trichloroethene	U		0.153	0.500	1	10/29/2019 05:43	WG1371177
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 05:43	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 05:43	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 05:43	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 05:43	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 05:43	WG1371177
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/29/2019 05:43	WG1371177
Vinyl chloride	U		0.118	0.500	1	10/29/2019 05:43	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 05:43	WG1371177
(S) Toluene-d8	94.8			80.0-120		10/29/2019 05:43	WG1371177
(S) 4-Bromofluorobenzene	109			77.0-126		10/29/2019 05:43	WG1371177
(S) 1,2-Dichloroethane-d4	97.2			70.0-130		10/29/2019 05:43	WG1371177

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

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Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	512000		2710	20000	1	10/24/2019 21:38	WG1369144

Sample Narrative:

L1152333-02 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	24800		51.9	1000	1	10/23/2019 02:31	WG1367181
Nitrate	U		22.7	100	1	10/23/2019 02:31	WG1367181
Sulfate	47800		77.4	5000	1	10/23/2019 02:31	WG1367181

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	343000		5100	50000	50	10/24/2019 23:36	WG1368783

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	13200		15.0	100	1	10/26/2019 16:17	WG1368592
Manganese	496		0.250	5.00	1	10/26/2019 16:17	WG1368592

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	10000		2.87	6.78	10	10/24/2019 11:39	WG1368615
Ethane	59.2		0.296	1.29	1	10/23/2019 13:03	WG1367825
Ethene	27.5		0.422	1.27	1	10/23/2019 13:03	WG1367825

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.37	J J4	1.05	25.0	1	10/29/2019 06:03	WG1371177
Acrylonitrile	U	J4	0.873	5.00	1	10/29/2019 06:03	WG1371177
Benzene	3.80		0.0896	0.500	1	10/29/2019 06:03	WG1371177
Bromobenzene	U		0.133	0.500	1	10/29/2019 06:03	WG1371177
Bromodichloromethane	U	J4	0.0800	0.500	1	10/29/2019 06:03	WG1371177
Bromochloromethane	U		0.145	0.500	1	10/29/2019 06:03	WG1371177
Bromoform	U		0.186	0.500	1	10/29/2019 06:03	WG1371177
Bromomethane	U		0.157	2.50	1	10/29/2019 06:03	WG1371177
n-Butylbenzene	U		0.143	0.500	1	10/29/2019 06:03	WG1371177
sec-Butylbenzene	U		0.134	0.500	1	10/29/2019 06:03	WG1371177
tert-Butylbenzene	U		0.183	0.500	1	10/29/2019 06:03	WG1371177
Carbon disulfide	U		0.101	0.500	1	10/29/2019 06:03	WG1371177
Carbon tetrachloride	U		0.159	0.500	1	10/29/2019 06:03	WG1371177
Chlorobenzene	U		0.140	0.500	1	10/29/2019 06:03	WG1371177
Chlorodibromomethane	U		0.128	0.500	1	10/29/2019 06:03	WG1371177
Chloroethane	U		0.141	2.50	1	10/29/2019 06:03	WG1371177
Chloroform	U		0.0860	0.500	1	10/29/2019 06:03	WG1371177
Chloromethane	U	UJ J0	0.153	1.25	1	10/29/2019 06:03	WG1371177
2-Chlorotoluene	U		0.111	0.500	1	10/29/2019 06:03	WG1371177
4-Chlorotoluene	U		0.0972	0.500	1	10/29/2019 06:03	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 06:03	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 06:03	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 06:03	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 06:03	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 06:03	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 06:03	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 06:03	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 06:03	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 06:03	WG1371177
1,1-Dichloroethene	U		0.188	0.500	1	10/29/2019 06:03	WG1371177
cis-1,2-Dichloroethene	20.1		0.0933	0.500	1	10/29/2019 06:03	WG1371177
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/29/2019 06:03	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 06:03	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 06:03	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 06:03	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 06:03	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 06:03	WG1371177
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/29/2019 06:03	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 06:03	WG1371177
Di-isopropyl ether	0.194	J JJO	0.0924	0.500	1	10/29/2019 06:03	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 06:03	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 06:03	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 06:03	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 06:03	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 06:03	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 06:03	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 06:03	WG1371177
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	10/29/2019 06:03	WG1371177
Methylene Chloride	U		1.07	2.50	1	10/29/2019 06:03	WG1371177
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/29/2019 06:03	WG1371177
Methyl tert-butyl ether	0.252	J	0.102	0.500	1	10/29/2019 06:03	WG1371177
Naphthalene	U		0.174	2.50	1	10/29/2019 06:03	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 06:03	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 06:03	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 06:03	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 06:03	WG1371177
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 06:03	WG1371177
Tetrachloroethene	U		0.199	0.500	1	10/29/2019 06:03	WG1371177
Toluene	U		0.412	0.500	1	10/29/2019 06:03	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 06:03	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 06:03	WG1371177
1,1,1-Trichloroethane	U	14	0.0940	0.500	1	10/29/2019 06:03	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 06:03	WG1371177
Trichloroethene	U		0.153	0.500	1	10/29/2019 06:03	WG1371177
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 06:03	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 06:03	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 06:03	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 06:03	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 06:03	WG1371177
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/29/2019 06:03	WG1371177
Vinyl chloride	88.2		0.118	0.500	1	10/29/2019 06:03	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 06:03	WG1371177
(S) Toluene-d8	94.4			80.0-120		10/29/2019 06:03	WG1371177
(S) 4-Bromofluorobenzene	107			77.0-126		10/29/2019 06:03	WG1371177
(S) 1,2-Dichloroethane-d4	98.9			70.0-130		10/29/2019 06:03	WG1371177

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

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Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	108000		2710	20000	1	10/24/2019 21:46	WG1369144

Sample Narrative:

L1152333-03 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	6000		51.9	1000	1	10/23/2019 02:48	WG1367181
Nitrate	U		22.7	100	1	10/23/2019 02:48	WG1367181
Sulfate	2560	J	77.4	5000	1	10/23/2019 02:48	WG1367181

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	1910	B	102	1000	1	10/26/2019 13:31	WG1370126

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	608		15.0	100	1	10/26/2019 16:20	WG1368592
Manganese	589		0.250	5.00	1	10/26/2019 16:20	WG1368592

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	45.6		0.287	0.678	1	10/23/2019 13:15	WG1367825
Ethane	U		0.296	1.29	1	10/23/2019 13:15	WG1367825
Ethene	U		0.422	1.27	1	10/23/2019 13:15	WG1367825

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	2.58	J J4	1.05	25.0	1	10/29/2019 06:23	WG1371177
Acrylonitrile	U	J4	0.873	5.00	1	10/29/2019 06:23	WG1371177
Benzene	U		0.0896	0.500	1	10/29/2019 06:23	WG1371177
Bromobenzene	U		0.133	0.500	1	10/29/2019 06:23	WG1371177
Bromodichloromethane	U	J4	0.0800	0.500	1	10/29/2019 06:23	WG1371177
Bromochloromethane	U		0.145	0.500	1	10/29/2019 06:23	WG1371177
Bromoform	U		0.186	0.500	1	10/29/2019 06:23	WG1371177
Bromomethane	U		0.157	2.50	1	10/29/2019 06:23	WG1371177
n-Butylbenzene	U		0.143	0.500	1	10/29/2019 06:23	WG1371177
sec-Butylbenzene	U		0.134	0.500	1	10/29/2019 06:23	WG1371177
tert-Butylbenzene	U		0.183	0.500	1	10/29/2019 06:23	WG1371177
Carbon disulfide	U		0.101	0.500	1	10/29/2019 06:23	WG1371177
Carbon tetrachloride	U		0.159	0.500	1	10/29/2019 06:23	WG1371177
Chlorobenzene	U		0.140	0.500	1	10/29/2019 06:23	WG1371177
Chlorodibromomethane	U		0.128	0.500	1	10/29/2019 06:23	WG1371177
Chloroethane	U		0.141	2.50	1	10/29/2019 06:23	WG1371177
Chloroform	U		0.0860	0.500	1	10/29/2019 06:23	WG1371177
Chloromethane	U	UJ JO	0.153	1.25	1	10/29/2019 06:23	WG1371177
2-Chlorotoluene	U		0.111	0.500	1	10/29/2019 06:23	WG1371177
4-Chlorotoluene	U		0.0972	0.500	1	10/29/2019 06:23	WG1371177

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1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 06:23	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 06:23	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 06:23	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 06:23	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 06:23	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 06:23	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 06:23	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 06:23	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 06:23	WG1371177
1,1-Dichloroethene	U		0.188	0.500	1	10/29/2019 06:23	WG1371177
cis-1,2-Dichloroethene	10.5		0.0933	0.500	1	10/29/2019 06:23	WG1371177
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/29/2019 06:23	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 06:23	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 06:23	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 06:23	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 06:23	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 06:23	WG1371177
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/29/2019 06:23	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 06:23	WG1371177
Di-isopropyl ether	U	UJ JO	0.0924	0.500	1	10/29/2019 06:23	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 06:23	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 06:23	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 06:23	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 06:23	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 06:23	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 06:23	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 06:23	WG1371177
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	10/29/2019 06:23	WG1371177
Methylene Chloride	U		1.07	2.50	1	10/29/2019 06:23	WG1371177
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/29/2019 06:23	WG1371177
Methyl tert-butyl ether	U		0.102	0.500	1	10/29/2019 06:23	WG1371177
Naphthalene	U		0.174	2.50	1	10/29/2019 06:23	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 06:23	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 06:23	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 06:23	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 06:23	WG1371177
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 06:23	WG1371177
Tetrachloroethene	U		0.199	0.500	1	10/29/2019 06:23	WG1371177
Toluene	U		0.412	0.500	1	10/29/2019 06:23	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 06:23	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 06:23	WG1371177
1,1,1-Trichloroethane	U	UJ	0.0940	0.500	1	10/29/2019 06:23	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 06:23	WG1371177
Trichloroethene	U		0.153	0.500	1	10/29/2019 06:23	WG1371177
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 06:23	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 06:23	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 06:23	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 06:23	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 06:23	WG1371177
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/29/2019 06:23	WG1371177
Vinyl chloride	0.140	J	0.118	0.500	1	10/29/2019 06:23	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 06:23	WG1371177
(S) Toluene-d8	97.4			80.0-120		10/29/2019 06:23	WG1371177
(S) 4-Bromofluorobenzene	109			77.0-126		10/29/2019 06:23	WG1371177
(S) 1,2-Dichloroethane-d4	99.4			70.0-130		10/29/2019 06:23	WG1371177

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

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Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	58600		2710	20000	1	10/24/2019 21:55	WG1369144

Sample Narrative:

L1152333-04 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	5470		51.9	1000	1	10/23/2019 03:04	WG1367181
Nitrate	U		22.7	100	1	10/23/2019 03:04	WG1367181
Sulfate	1820	J	77.4	5000	1	10/23/2019 03:04	WG1367181

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	11100		102	1000	1	10/26/2019 13:54	WG1370126

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	1700		15.0	100	1	10/26/2019 16:24	WG1368592
Manganese	169		0.250	5.00	1	10/26/2019 16:24	WG1368592

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	96.6	U B J	31.6	100	1	11/02/2019 23:35	WG1373020
(S) a,a,a-Trifluorotoluene(FID)	96.1			78.0-120		11/02/2019 23:35	WG1373020

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	388		0.287	0.678	1	10/23/2019 13:29	WG1367825
Ethane	5.75		0.296	1.29	1	10/23/2019 13:29	WG1367825
Ethene	U		0.422	1.27	1	10/23/2019 13:29	WG1367825

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	2.72	J J4	1.05	25.0	1	10/29/2019 06:43	WG1371177
Acrylonitrile	U	J4	0.873	5.00	1	10/29/2019 06:43	WG1371177
Benzene	U		0.0896	0.500	1	10/29/2019 06:43	WG1371177
Bromobenzene	U		0.133	0.500	1	10/29/2019 06:43	WG1371177
Bromodichloromethane	U	J4	0.0800	0.500	1	10/29/2019 06:43	WG1371177
Bromochloromethane	U		0.145	0.500	1	10/29/2019 06:43	WG1371177
Bromoform	U		0.186	0.500	1	10/29/2019 06:43	WG1371177
Bromomethane	U		0.157	2.50	1	10/29/2019 06:43	WG1371177
n-Butylbenzene	U		0.143	0.500	1	10/29/2019 06:43	WG1371177
sec-Butylbenzene	U		0.134	0.500	1	10/29/2019 06:43	WG1371177
tert-Butylbenzene	U		0.183	0.500	1	10/29/2019 06:43	WG1371177
Carbon disulfide	U		0.101	0.500	1	10/29/2019 06:43	WG1371177
Carbon tetrachloride	U		0.159	0.500	1	10/29/2019 06:43	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/29/2019 06:43	WG1371177
Chlorodibromomethane	U		0.128	0.500	1	10/29/2019 06:43	WG1371177
Chloroethane	U		0.141	2.50	1	10/29/2019 06:43	WG1371177
Chloroform	U		0.0860	0.500	1	10/29/2019 06:43	WG1371177
Chloromethane	U	UJ JO	0.153	1.25	1	10/29/2019 06:43	WG1371177
2-Chlorotoluene	U		0.111	0.500	1	10/29/2019 06:43	WG1371177
4-Chlorotoluene	U		0.0972	0.500	1	10/29/2019 06:43	WG1371177
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 06:43	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 06:43	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 06:43	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 06:43	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 06:43	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 06:43	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 06:43	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 06:43	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 06:43	WG1371177
1,1-Dichloroethene	U		0.188	0.500	1	10/29/2019 06:43	WG1371177
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/29/2019 06:43	WG1371177
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/29/2019 06:43	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 06:43	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 06:43	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 06:43	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 06:43	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 06:43	WG1371177
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/29/2019 06:43	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 06:43	WG1371177
Di-isopropyl ether	U	UJ JO	0.0924	0.500	1	10/29/2019 06:43	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 06:43	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 06:43	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 06:43	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 06:43	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 06:43	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 06:43	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 06:43	WG1371177
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	10/29/2019 06:43	WG1371177
Methylene Chloride	U		1.07	2.50	1	10/29/2019 06:43	WG1371177
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/29/2019 06:43	WG1371177
Methyl tert-butyl ether	U		0.102	0.500	1	10/29/2019 06:43	WG1371177
Naphthalene	U		0.174	2.50	1	10/29/2019 06:43	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 06:43	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 06:43	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 06:43	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 06:43	WG1371177
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 06:43	WG1371177
Tetrachloroethene	U		0.199	0.500	1	10/29/2019 06:43	WG1371177
Toluene	U		0.412	0.500	1	10/29/2019 06:43	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 06:43	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 06:43	WG1371177
1,1,1-Trichloroethane	U	J4	0.0940	0.500	1	10/29/2019 06:43	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 06:43	WG1371177
Trichloroethene	U		0.153	0.500	1	10/29/2019 06:43	WG1371177
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 06:43	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 06:43	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 06:43	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 06:43	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 06:43	WG1371177

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/29/2019 06:43	WG1371177
Vinyl chloride	U		0.118	0.500	1	10/29/2019 06:43	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 06:43	WG1371177
(S) Toluene-d8	96.1			80.0-120		10/29/2019 06:43	WG1371177
(S) 4-Bromofluorobenzene	108			77.0-126		10/29/2019 06:43	WG1371177
(S) 1,2-Dichloroethane-d4	97.8			70.0-130		10/29/2019 06:43	WG1371177

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

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Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	129000		2710	20000	1	10/24/2019 22:03	WG1369144

Sample Narrative:

L1152340-01 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	14200		51.9	1000	1	10/23/2019 04:10	WG1367181
Nitrate	U		22.7	100	1	10/23/2019 04:10	WG1367181
Sulfate	51900		77.4	5000	1	10/23/2019 04:10	WG1367181

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1100	B	102	1000	1	10/26/2019 12:44	WG1370125

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	3830		15.0	100	1	10/26/2019 16:35	WG1368592
Manganese	504		0.250	5.00	1	10/26/2019 16:35	WG1368592

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	92.7	U B J	31.6	100	1	11/02/2019 23:56	WG1373020
(S) a,a,a-Trifluorotoluene(FID)	96.4			78.0-120		11/02/2019 23:56	WG1373020

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	101		0.287	0.678	1	10/23/2019 13:40	WG1367825
Ethane	U		0.296	1.29	1	10/23/2019 13:40	WG1367825
Ethene	U		0.422	1.27	1	10/23/2019 13:40	WG1367825

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	1.23	J J4	1.05	25.0	1	10/29/2019 07:04	WG1371177
Acrylonitrile	U	J4	0.873	5.00	1	10/29/2019 07:04	WG1371177
Benzene	U		0.0896	0.500	1	10/29/2019 07:04	WG1371177
Bromobenzene	U		0.133	0.500	1	10/29/2019 07:04	WG1371177
Bromodichloromethane	U	J4	0.0800	0.500	1	10/29/2019 07:04	WG1371177
Bromochloromethane	U		0.145	0.500	1	10/29/2019 07:04	WG1371177
Bromoform	U		0.186	0.500	1	10/29/2019 07:04	WG1371177
Bromomethane	U		0.157	2.50	1	10/29/2019 07:04	WG1371177
n-Butylbenzene	U		0.143	0.500	1	10/29/2019 07:04	WG1371177
sec-Butylbenzene	U		0.134	0.500	1	10/29/2019 07:04	WG1371177
tert-Butylbenzene	U		0.183	0.500	1	10/29/2019 07:04	WG1371177
Carbon disulfide	U		0.101	0.500	1	10/29/2019 07:04	WG1371177
Carbon tetrachloride	U		0.159	0.500	1	10/29/2019 07:04	WG1371177

JC 12/9/19

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/29/2019 07:04	WG1371177
Chlorodibromomethane	U		0.128	0.500	1	10/29/2019 07:04	WG1371177
Chloroethane	U		0.141	2.50	1	10/29/2019 07:04	WG1371177
Chloroform	U		0.0860	0.500	1	10/29/2019 07:04	WG1371177
Chloromethane	U	UJ JO	0.153	1.25	1	10/29/2019 07:04	WG1371177
2-Chlorotoluene	U		0.111	0.500	1	10/29/2019 07:04	WG1371177
4-Chlorotoluene	U		0.0972	0.500	1	10/29/2019 07:04	WG1371177
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 07:04	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 07:04	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 07:04	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 07:04	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 07:04	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 07:04	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 07:04	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 07:04	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 07:04	WG1371177
1,1-Dichloroethene	U		0.188	0.500	1	10/29/2019 07:04	WG1371177
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/29/2019 07:04	WG1371177
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/29/2019 07:04	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 07:04	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 07:04	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 07:04	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 07:04	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 07:04	WG1371177
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/29/2019 07:04	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 07:04	WG1371177
Di-isopropyl ether	U	UJ JO	0.0924	0.500	1	10/29/2019 07:04	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 07:04	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 07:04	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 07:04	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 07:04	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 07:04	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 07:04	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 07:04	WG1371177
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	10/29/2019 07:04	WG1371177
Methylene Chloride	U		1.07	2.50	1	10/29/2019 07:04	WG1371177
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/29/2019 07:04	WG1371177
Methyl tert-butyl ether	U		0.102	0.500	1	10/29/2019 07:04	WG1371177
Naphthalene	U		0.174	2.50	1	10/29/2019 07:04	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 07:04	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 07:04	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 07:04	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 07:04	WG1371177
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 07:04	WG1371177
Tetrachloroethene	U		0.199	0.500	1	10/29/2019 07:04	WG1371177
Toluene	U		0.412	0.500	1	10/29/2019 07:04	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 07:04	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 07:04	WG1371177
1,1,1-Trichloroethane	U	JA	0.0940	0.500	1	10/29/2019 07:04	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 07:04	WG1371177
Trichloroethene	U		0.153	0.500	1	10/29/2019 07:04	WG1371177
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 07:04	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 07:04	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 07:04	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 07:04	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 07:04	WG1371177

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/9/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/29/2019 07:04	WG1371177
Vinyl chloride	U		0.118	0.500	1	10/29/2019 07:04	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 07:04	WG1371177
(S) Toluene-d8	100			80.0-120		10/29/2019 07:04	WG1371177
(S) 4-Bromofluorobenzene	109			77.0-126		10/29/2019 07:04	WG1371177
(S) 1,2-Dichloroethane-d4	101			70.0-130		10/29/2019 07:04	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/9/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	311000		2710	20000	1	10/24/2019 22:11	WG1369144

Sample Narrative:

L1152340-02 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	20200		51.9	1000	1	10/23/2019 04:26	WG1367181
Nitrate	U		22.7	100	1	10/23/2019 04:26	WG1367181
Sulfate	26800		77.4	5000	1	10/23/2019 04:26	WG1367181

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	8100		102	1000	1	10/26/2019 13:00	WG1370125

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	2260		15.0	100	1	10/26/2019 16:39	WG1368592
Manganese	295		0.250	5.00	1	10/26/2019 16:39	WG1368592

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch	
Gasoline Range Organics-NWTPH	98.5	U	BJ	31.6	100	1	10/31/2019 04:46	WG1371615
(S) a,a,a-Trifluorotoluene(FID)	96.1			78.0-120		10/31/2019 04:46	WG1371615	

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	129		0.287	0.678	1	10/23/2019 13:42	WG1367825
Ethane	3.74		0.296	1.29	1	10/23/2019 13:42	WG1367825
Ethene	U		0.422	1.27	1	10/23/2019 13:42	WG1367825

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch	
Acetone	1.19		J J4	1.05	25.0	1	10/29/2019 07:24	WG1371177
Acrylonitrile	U		J4	0.873	5.00	1	10/29/2019 07:24	WG1371177
Benzene	U		0.0896	0.500	1	10/29/2019 07:24	WG1371177	
Bromobenzene	U		0.133	0.500	1	10/29/2019 07:24	WG1371177	
Bromodichloromethane	U		J4	0.0800	0.500	1	10/29/2019 07:24	WG1371177
Bromochloromethane	U		0.145	0.500	1	10/29/2019 07:24	WG1371177	
Bromoform	U		0.186	0.500	1	10/29/2019 07:24	WG1371177	
Bromomethane	U		0.157	2.50	1	10/29/2019 07:24	WG1371177	
n-Butylbenzene	U		0.143	0.500	1	10/29/2019 07:24	WG1371177	
sec-Butylbenzene	U		0.134	0.500	1	10/29/2019 07:24	WG1371177	
tert-Butylbenzene	U		0.183	0.500	1	10/29/2019 07:24	WG1371177	
Carbon disulfide	0.357		J	0.101	0.500	1	10/29/2019 07:24	WG1371177
Carbon tetrachloride	U		0.159	0.500	1	10/29/2019 07:24	WG1371177	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/29/2019 07:24	WG1371177
Chlorodibromomethane	U		0.128	0.500	1	10/29/2019 07:24	WG1371177
Chloroethane	U		0.141	2.50	1	10/29/2019 07:24	WG1371177
Chloroform	U		0.0860	0.500	1	10/29/2019 07:24	WG1371177
Chloromethane	U	UJ JO	0.153	1.25	1	10/29/2019 07:24	WG1371177
2-Chlorotoluene	U		0.111	0.500	1	10/29/2019 07:24	WG1371177
4-Chlorotoluene	U		0.0972	0.500	1	10/29/2019 07:24	WG1371177
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 07:24	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 07:24	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 07:24	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 07:24	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 07:24	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 07:24	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 07:24	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 07:24	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 07:24	WG1371177
1,1-Dichloroethene	U		0.188	0.500	1	10/29/2019 07:24	WG1371177
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/29/2019 07:24	WG1371177
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/29/2019 07:24	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 07:24	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 07:24	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 07:24	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 07:24	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 07:24	WG1371177
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/29/2019 07:24	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 07:24	WG1371177
Di-isopropyl ether	U	UJ JO	0.0924	0.500	1	10/29/2019 07:24	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 07:24	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 07:24	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 07:24	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 07:24	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 07:24	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 07:24	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 07:24	WG1371177
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	10/29/2019 07:24	WG1371177
Methylene Chloride	U		1.07	2.50	1	10/29/2019 07:24	WG1371177
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/29/2019 07:24	WG1371177
Methyl tert-butyl ether	U		0.102	0.500	1	10/29/2019 07:24	WG1371177
Naphthalene	U		0.174	2.50	1	10/29/2019 07:24	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 07:24	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 07:24	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 07:24	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 07:24	WG1371177
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 07:24	WG1371177
Tetrachloroethene	U		0.199	0.500	1	10/29/2019 07:24	WG1371177
Toluene	U		0.412	0.500	1	10/29/2019 07:24	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 07:24	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 07:24	WG1371177
1,1,1-Trichloroethane	U	J4	0.0940	0.500	1	10/29/2019 07:24	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 07:24	WG1371177
Trichloroethene	U		0.153	0.500	1	10/29/2019 07:24	WG1371177
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 07:24	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 07:24	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 07:24	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 07:24	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 07:24	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/29/2019 07:24	WG1371177
Vinyl chloride	U		0.118	0.500	1	10/29/2019 07:24	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 07:24	WG1371177
(S) Toluene-d8	101			80.0-120		10/29/2019 07:24	WG1371177
(S) 4-Bromofluorobenzene	106			77.0-126		10/29/2019 07:24	WG1371177
(S) 1,2-Dichloroethane-d4	98.8			70.0-130		10/29/2019 07:24	WG1371177

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

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Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	153000		2710	20000	1	10/24/2019 22:20	WG1369144

Sample Narrative:

L1152340-03 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	12100		51.9	1000	1	10/23/2019 05:32	WG1367181
Nitrate	U		22.7	100	1	10/23/2019 05:32	WG1367181
Sulfate	16200		77.4	5000	1	10/23/2019 05:32	WG1367181

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	4240		102	1000	1	10/26/2019 13:15	WG1370125

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	5820		15.0	100	1	10/26/2019 16:42	WG1368592
Manganese	455		0.250	5.00	1	10/26/2019 16:42	WG1368592

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	97.9	U BJ	31.6	100	1	10/31/2019 05:08	WG1371615
(S) a,a,a-Trifluorotoluene(FID)	95.9			78.0-120		10/31/2019 05:08	WG1371615

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	31.9		0.287	0.678	1	10/23/2019 13:57	WG1367825
Ethane	U		0.296	1.29	1	10/23/2019 13:57	WG1367825
Ethene	U		0.422	1.27	1	10/23/2019 13:57	WG1367825

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.66	J J4	1.05	25.0	1	10/29/2019 07:44	WG1371177
Acrylonitrile	U	J4	0.873	5.00	1	10/29/2019 07:44	WG1371177
Benzene	U		0.0896	0.500	1	10/29/2019 07:44	WG1371177
Bromobenzene	U		0.133	0.500	1	10/29/2019 07:44	WG1371177
Bromodichloromethane	U	J4	0.0800	0.500	1	10/29/2019 07:44	WG1371177
Bromochloromethane	U		0.145	0.500	1	10/29/2019 07:44	WG1371177
Bromoform	U		0.186	0.500	1	10/29/2019 07:44	WG1371177
Bromomethane	U		0.157	2.50	1	10/29/2019 07:44	WG1371177
n-Butylbenzene	U		0.143	0.500	1	10/29/2019 07:44	WG1371177
sec-Butylbenzene	U		0.134	0.500	1	10/29/2019 07:44	WG1371177
tert-Butylbenzene	U		0.183	0.500	1	10/29/2019 07:44	WG1371177
Carbon disulfide	0.290	J	0.101	0.500	1	10/29/2019 07:44	WG1371177
Carbon tetrachloride	U		0.159	0.500	1	10/29/2019 07:44	WG1371177

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- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/29/2019 07:44	WG1371177
Chlorodibromomethane	U		0.128	0.500	1	10/29/2019 07:44	WG1371177
Chloroethane	U		0.141	2.50	1	10/29/2019 07:44	WG1371177
Chloroform	U		0.0860	0.500	1	10/29/2019 07:44	WG1371177
Chloromethane	U	UJ JO	0.153	1.25	1	10/29/2019 07:44	WG1371177
2-Chlorotoluene	U		0.111	0.500	1	10/29/2019 07:44	WG1371177
4-Chlorotoluene	U		0.0972	0.500	1	10/29/2019 07:44	WG1371177
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 07:44	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 07:44	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 07:44	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 07:44	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 07:44	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 07:44	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 07:44	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 07:44	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 07:44	WG1371177
1,1-Dichloroethene	U		0.188	0.500	1	10/29/2019 07:44	WG1371177
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/29/2019 07:44	WG1371177
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/29/2019 07:44	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 07:44	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 07:44	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 07:44	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 07:44	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 07:44	WG1371177
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/29/2019 07:44	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 07:44	WG1371177
Di-isopropyl ether	U	JO	0.0924	0.500	1	10/29/2019 07:44	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 07:44	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 07:44	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 07:44	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 07:44	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 07:44	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 07:44	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 07:44	WG1371177
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	10/29/2019 07:44	WG1371177
Methylene Chloride	U		1.07	2.50	1	10/29/2019 07:44	WG1371177
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/29/2019 07:44	WG1371177
Methyl tert-butyl ether	U		0.102	0.500	1	10/29/2019 07:44	WG1371177
Naphthalene	U		0.174	2.50	1	10/29/2019 07:44	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 07:44	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 07:44	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 07:44	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 07:44	WG1371177
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 07:44	WG1371177
Tetrachloroethene	U		0.199	0.500	1	10/29/2019 07:44	WG1371177
Toluene	0.728		0.412	0.500	1	10/29/2019 07:44	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 07:44	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 07:44	WG1371177
1,1,1-Trichloroethane	U	J4	0.0940	0.500	1	10/29/2019 07:44	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 07:44	WG1371177
Trichloroethene	U		0.153	0.500	1	10/29/2019 07:44	WG1371177 JC 12/9/19
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 07:44	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 07:44	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 07:44	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 07:44	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 07:44	WG1371177

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/29/2019 07:44	WG1371177
Vinyl chloride	U		0.118	0.500	1	10/29/2019 07:44	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 07:44	WG1371177
(S) Toluene-d8	102			80.0-120		10/29/2019 07:44	WG1371177
(S) 4-Bromofluorobenzene	111			77.0-126		10/29/2019 07:44	WG1371177
(S) 1,2-Dichloroethane-d4	99.7			70.0-130		10/29/2019 07:44	WG1371177

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/9/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	144000		2710	20000	1	10/24/2019 22:29	WG1369144

Sample Narrative:

L1152340-04 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	15200		51.9	1000	1	10/23/2019 05:48	WG1367181
Nitrate	U		22.7	100	1	10/23/2019 05:48	WG1367181
Sulfate	62200		77.4	5000	1	10/23/2019 05:48	WG1367181

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	4760		102	1000	1	10/26/2019 13:28	WG1370125

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	3060		15.0	100	1	10/26/2019 16:46	WG1368592
Manganese	289		0.250	5.00	1	10/26/2019 16:46	WG1368592

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	99.6	U	BJ 31.6	100	1	10/31/2019 05:29	WG1371615
(S) a,a,a-Trifluorotoluene(FID)	96.2			78.0-120		10/31/2019 05:29	WG1371615

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	95.7		0.287	0.678	1	10/23/2019 14:00	WG1367825
Ethane	6.17		0.296	1.29	1	10/23/2019 14:00	WG1367825
Ethene	U		0.422	1.27	1	10/23/2019 14:00	WG1367825

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	2.03		J JA 1.05	25.0	1	10/29/2019 08:05	WG1371177
Acrylonitrile	U		JA 0.873	5.00	1	10/29/2019 08:05	WG1371177
Benzene	U		0.0896	0.500	1	10/29/2019 08:05	WG1371177
Bromobenzene	U		0.133	0.500	1	10/29/2019 08:05	WG1371177
Bromodichloromethane	U		JA 0.0800	0.500	1	10/29/2019 08:05	WG1371177
Bromochloromethane	U		0.145	0.500	1	10/29/2019 08:05	WG1371177
Bromoform	U		0.186	0.500	1	10/29/2019 08:05	WG1371177
Bromomethane	U		0.157	2.50	1	10/29/2019 08:05	WG1371177
n-Butylbenzene	U		0.143	0.500	1	10/29/2019 08:05	WG1371177
sec-Butylbenzene	U		0.134	0.500	1	10/29/2019 08:05	WG1371177
tert-Butylbenzene	U		0.183	0.500	1	10/29/2019 08:05	WG1371177
Carbon disulfide	0.224		J 0.101	0.500	1	10/29/2019 08:05	WG1371177
Carbon tetrachloride	U		0.159	0.500	1	10/29/2019 08:05	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/21/19 13:15

L1152340

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/29/2019 08:05	WG1371177
Chlorodibromomethane	U		0.128	0.500	1	10/29/2019 08:05	WG1371177
Chloroethane	U		0.141	2.50	1	10/29/2019 08:05	WG1371177
Chloroform	U		0.0860	0.500	1	10/29/2019 08:05	WG1371177
Chloromethane	U	UJ JO	0.153	1.25	1	10/29/2019 08:05	WG1371177
2-Chlorotoluene	U		0.111	0.500	1	10/29/2019 08:05	WG1371177
4-Chlorotoluene	U		0.0972	0.500	1	10/29/2019 08:05	WG1371177
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 08:05	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 08:05	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 08:05	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 08:05	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 08:05	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 08:05	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 08:05	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 08:05	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 08:05	WG1371177
1,1-Dichloroethene	U		0.188	0.500	1	10/29/2019 08:05	WG1371177
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/29/2019 08:05	WG1371177
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/29/2019 08:05	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 08:05	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 08:05	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 08:05	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 08:05	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 08:05	WG1371177
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/29/2019 08:05	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 08:05	WG1371177
Di-isopropyl ether	U	UJ JO	0.0924	0.500	1	10/29/2019 08:05	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 08:05	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 08:05	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 08:05	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 08:05	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 08:05	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 08:05	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 08:05	WG1371177
2-Butanone (MEK)	1.48	J JJO	1.28	5.00	1	10/29/2019 08:05	WG1371177
Methylene Chloride	U		1.07	2.50	1	10/29/2019 08:05	WG1371177
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/29/2019 08:05	WG1371177
Methyl tert-butyl ether	U		0.102	0.500	1	10/29/2019 08:05	WG1371177
Naphthalene	U		0.174	2.50	1	10/29/2019 08:05	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 08:05	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 08:05	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 08:05	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 08:05	WG1371177
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 08:05	WG1371177
Tetrachloroethene	U		0.199	0.500	1	10/29/2019 08:05	WG1371177
Toluene	1.63		0.412	0.500	1	10/29/2019 08:05	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 08:05	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 08:05	WG1371177
1,1,1-Trichloroethane	U	J4	0.0940	0.500	1	10/29/2019 08:05	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 08:05	WG1371177
Trichloroethene	U		0.153	0.500	1	10/29/2019 08:05	WG1371177
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 08:05	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 08:05	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 08:05	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 08:05	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 08:05	WG1371177

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/9/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/29/2019 08:05	WG1371177
Vinyl chloride	U		0.118	0.500	1	10/29/2019 08:05	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 08:05	WG1371177
(S) Toluene-d8	99.7			80.0-120		10/29/2019 08:05	WG1371177
(S) 4-Bromofluorobenzene	104			77.0-126		10/29/2019 08:05	WG1371177
(S) 1,2-Dichloroethane-d4	98.2			70.0-130		10/29/2019 08:05	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/9/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	112000		2710	20000	1	10/24/2019 22:47	WG1369144

Sample Narrative:

L1152340-05 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	41400		51.9	1000	1	10/23/2019 06:05	WG1367181
Nitrate	U		22.7	100	1	10/23/2019 06:05	WG1367181
Sulfate	18600		77.4	5000	1	10/23/2019 06:05	WG1367181

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	4440		102	1000	1	10/26/2019 13:45	WG1370125

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	3000		15.0	100	1	10/26/2019 16:49	WG1368592
Manganese	1200		0.250	5.00	1	10/26/2019 16:49	WG1368592

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	95.3	U BJ	31.6	100	1	10/31/2019 05:51	WG1371615
(S) a,a,a-Trifluorotoluene(FID)	96.2			78.0-120		10/31/2019 05:51	WG1371615

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	194		0.287	0.678	1	10/23/2019 14:04	WG1367825
Ethane	U		0.296	1.29	1	10/23/2019 14:04	WG1367825
Ethene	U		0.422	1.27	1	10/23/2019 14:04	WG1367825

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U	J4	1.05	25.0	1	10/29/2019 08:25	WG1371177
Acrylonitrile	U	J4	0.873	5.00	1	10/29/2019 08:25	WG1371177
Benzene	U		0.0896	0.500	1	10/29/2019 08:25	WG1371177
Bromobenzene	U		0.133	0.500	1	10/29/2019 08:25	WG1371177
Bromodichloromethane	U	J4	0.0800	0.500	1	10/29/2019 08:25	WG1371177
Bromochloromethane	U		0.145	0.500	1	10/29/2019 08:25	WG1371177
Bromoform	U		0.186	0.500	1	10/29/2019 08:25	WG1371177
Bromomethane	U		0.157	2.50	1	10/29/2019 08:25	WG1371177
n-Butylbenzene	U		0.143	0.500	1	10/29/2019 08:25	WG1371177
sec-Butylbenzene	U		0.134	0.500	1	10/29/2019 08:25	WG1371177
tert-Butylbenzene	U		0.183	0.500	1	10/29/2019 08:25	WG1371177
Carbon disulfide	U		0.101	0.500	1	10/29/2019 08:25	WG1371177
Carbon tetrachloride	U		0.159	0.500	1	10/29/2019 08:25	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/9/19



Collected date/time: 10/21/19 10:25

L1152340

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/29/2019 08:25	WG1371177
Chlorodibromomethane	U		0.128	0.500	1	10/29/2019 08:25	WG1371177
Chloroethane	U		0.141	2.50	1	10/29/2019 08:25	WG1371177
Chloroform	U		0.0860	0.500	1	10/29/2019 08:25	WG1371177
Chloromethane	U	UJ JO	0.153	1.25	1	10/29/2019 08:25	WG1371177
2-Chlorotoluene	U		0.111	0.500	1	10/29/2019 08:25	WG1371177
4-Chlorotoluene	U		0.0972	0.500	1	10/29/2019 08:25	WG1371177
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 08:25	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 08:25	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 08:25	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 08:25	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 08:25	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 08:25	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 08:25	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 08:25	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 08:25	WG1371177
1,1-Dichloroethene	U		0.188	0.500	1	10/29/2019 08:25	WG1371177
cis-1,2-Dichloroethene	0.302	J	0.0933	0.500	1	10/29/2019 08:25	WG1371177
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/29/2019 08:25	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 08:25	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 08:25	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 08:25	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 08:25	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 08:25	WG1371177
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/29/2019 08:25	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 08:25	WG1371177
Di-isopropyl ether	U	UJ JO	0.0924	0.500	1	10/29/2019 08:25	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 08:25	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 08:25	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 08:25	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 08:25	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 08:25	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 08:25	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 08:25	WG1371177
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	10/29/2019 08:25	WG1371177
Methylene Chloride	U		1.07	2.50	1	10/29/2019 08:25	WG1371177
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/29/2019 08:25	WG1371177
Methyl tert-butyl ether	U		0.102	0.500	1	10/29/2019 08:25	WG1371177
Naphthalene	U		0.174	2.50	1	10/29/2019 08:25	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 08:25	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 08:25	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 08:25	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 08:25	WG1371177
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 08:25	WG1371177
Tetrachloroethene	0.523		0.199	0.500	1	10/29/2019 08:25	WG1371177
Toluene	U		0.412	0.500	1	10/29/2019 08:25	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 08:25	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 08:25	WG1371177
1,1,1-Trichloroethane	U	J4	0.0940	0.500	1	10/29/2019 08:25	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 08:25	WG1371177
Trichloroethene	U		0.153	0.500	1	10/29/2019 08:25	WG1371177
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 08:25	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 08:25	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 08:25	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 08:25	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 08:25	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/9/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/29/2019 08:25	WG1371177
Vinyl chloride	U		0.118	0.500	1	10/29/2019 08:25	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 08:25	WG1371177
(S) Toluene-d8	100			80.0-120		10/29/2019 08:25	WG1371177
(S) 4-Bromofluorobenzene	105			77.0-126		10/29/2019 08:25	WG1371177
(S) 1,2-Dichloroethane-d4	97.9			70.0-130		10/29/2019 08:25	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/9/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	209000		2710	20000	1	10/24/2019 22:55	WG1369144

Sample Narrative:

L1152340-07 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	23600		51.9	1000	1	10/23/2019 06:21	WG1367181
Nitrate	639		22.7	100	1	10/23/2019 06:21	WG1367181
Sulfate	82400		77.4	5000	1	10/23/2019 06:21	WG1367181

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1520	B	102	1000	1	10/26/2019 15:12	WG1370125

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	18900		15.0	100	1	10/26/2019 16:52	WG1368592
Manganese	648		0.250	5.00	1	10/26/2019 16:52	WG1368592

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	141	B	31.6	100	1	11/03/2019 00:18	WG1373020
(S) a,a,a-Trifluorotoluene(FID)	96.5			78.0-120		11/03/2019 00:18	WG1373020

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	53.5		0.287	0.678	1	10/23/2019 14:07	WG1367825
Ethane	5.31		0.296	1.29	1	10/23/2019 14:07	WG1367825
Ethene	U		0.422	1.27	1	10/23/2019 14:07	WG1367825

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U	J4	1.05	25.0	1	10/29/2019 08:45	WG1371177
Acrylonitrile	U	J4	0.873	5.00	1	10/29/2019 08:45	WG1371177
Benzene	U		0.0896	0.500	1	10/29/2019 08:45	WG1371177
Bromobenzene	U		0.133	0.500	1	10/29/2019 08:45	WG1371177
Bromodichloromethane	U	J4	0.0800	0.500	1	10/29/2019 08:45	WG1371177
Bromochloromethane	U		0.145	0.500	1	10/29/2019 08:45	WG1371177
Bromoform	U		0.186	0.500	1	10/29/2019 08:45	WG1371177
Bromomethane	U		0.157	2.50	1	10/29/2019 08:45	WG1371177
n-Butylbenzene	U		0.143	0.500	1	10/29/2019 08:45	WG1371177
sec-Butylbenzene	U		0.134	0.500	1	10/29/2019 08:45	WG1371177
tert-Butylbenzene	U		0.183	0.500	1	10/29/2019 08:45	WG1371177
Carbon disulfide	U		0.101	0.500	1	10/29/2019 08:45	WG1371177
Carbon tetrachloride	U		0.159	0.500	1	10/29/2019 08:45	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/9/19



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/29/2019 08:45	WG1371177
Chlorodibromomethane	U		0.128	0.500	1	10/29/2019 08:45	WG1371177
Chloroethane	U		0.141	2.50	1	10/29/2019 08:45	WG1371177
Chloroform	U		0.0860	0.500	1	10/29/2019 08:45	WG1371177
Chloromethane	U	UJ JO	0.153	1.25	1	10/29/2019 08:45	WG1371177
2-Chlorotoluene	U		0.111	0.500	1	10/29/2019 08:45	WG1371177
4-Chlorotoluene	U		0.0972	0.500	1	10/29/2019 08:45	WG1371177
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 08:45	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 08:45	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 08:45	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 08:45	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 08:45	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 08:45	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 08:45	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 08:45	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 08:45	WG1371177
1,1-Dichloroethene	1.62		0.188	0.500	1	10/29/2019 08:45	WG1371177
cis-1,2-Dichloroethene	350		0.933	5.00	10	10/29/2019 19:10	WG1371769
trans-1,2-Dichloroethene	1.61		0.152	0.500	1	10/29/2019 08:45	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 08:45	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 08:45	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 08:45	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 08:45	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 08:45	WG1371177
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/29/2019 08:45	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 08:45	WG1371177
Di-isopropyl ether	U	UJ JO	0.0924	0.500	1	10/29/2019 08:45	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 08:45	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 08:45	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 08:45	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 08:45	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 08:45	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 08:45	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 08:45	WG1371177
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	10/29/2019 08:45	WG1371177
Methylene Chloride	U		1.07	2.50	1	10/29/2019 08:45	WG1371177
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/29/2019 08:45	WG1371177
Methyl tert-butyl ether	U		0.102	0.500	1	10/29/2019 08:45	WG1371177
Naphthalene	U		0.174	2.50	1	10/29/2019 08:45	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 08:45	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 08:45	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 08:45	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 08:45	WG1371177
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 08:45	WG1371177
Tetrachloroethene	114		0.199	0.500	1	10/29/2019 08:45	WG1371177
Toluene	U		0.412	0.500	1	10/29/2019 08:45	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 08:45	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 08:45	WG1371177
1,1,1-Trichloroethane	U	J4	0.0940	0.500	1	10/29/2019 08:45	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 08:45	WG1371177 JC 12/9/19
Trichloroethene	198		0.153	0.500	1	10/29/2019 08:45	WG1371177
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 08:45	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 08:45	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 08:45	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 08:45	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 08:45	WG1371177

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/29/2019 08:45	WG1371177
Vinyl chloride	0.259	J	0.118	0.500	1	10/29/2019 08:45	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 08:45	WG1371177
(S) Toluene-d8	98.7			80.0-120		10/29/2019 08:45	WG1371177
(S) Toluene-d8	105			80.0-120		10/29/2019 19:10	WG1371769
(S) 4-Bromofluorobenzene	108			77.0-126		10/29/2019 08:45	WG1371177
(S) 4-Bromofluorobenzene	99.1			77.0-126		10/29/2019 19:10	WG1371769
(S) 1,2-Dichloroethane-d4	98.1			70.0-130		10/29/2019 08:45	WG1371177
(S) 1,2-Dichloroethane-d4	102			70.0-130		10/29/2019 19:10	WG1371769

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/9/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	246000		2710	20000	1	10/24/2019 23:27	WG1369144

Sample Narrative:

L1152823-01 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	10500		51.9	1000	1	10/23/2019 18:44	WG1367978
Nitrate	2170		22.7	100	1	10/23/2019 18:44	WG1367978
Sulfate	70000		77.4	5000	1	10/23/2019 18:44	WG1367978

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	4270	B	102	1000	1	10/26/2019 19:05	WG1370126

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	339		15.0	100	1	10/28/2019 16:34	WG1368595
Manganese	313		0.250	5.00	1	10/28/2019 16:34	WG1368595

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	174	B	31.6	100	1	11/03/2019 00:40	WG1373020
(S) a,a,a-Trifluorotoluene(FID)	96.6			78.0-120		11/03/2019 00:40	WG1373020

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	U	UJ	0.287	0.678	1	10/24/2019 11:45	WG1368615
Ethane	U		0.296	1.29	1	10/24/2019 11:45	WG1368615
Ethene	U		0.422	1.27	1	10/24/2019 11:45	WG1368615

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch	
Acetone	1.77	U	J J4	1.05	25.0	1	10/29/2019 09:06	WG1371177
Acrylonitrile	U		J4	0.873	5.00	1	10/29/2019 09:06	WG1371177
Benzene	U			0.0896	0.500	1	10/29/2019 09:06	WG1371177
Bromobenzene	U			0.133	0.500	1	10/29/2019 09:06	WG1371177
Bromodichloromethane	U		J4	0.0800	0.500	1	10/29/2019 09:06	WG1371177
Bromochloromethane	U			0.145	0.500	1	10/29/2019 09:06	WG1371177
Bromoform	U			0.186	0.500	1	10/29/2019 09:06	WG1371177
Bromomethane	U			0.157	2.50	1	10/29/2019 09:06	WG1371177
n-Butylbenzene	U			0.143	0.500	1	10/29/2019 09:06	WG1371177
sec-Butylbenzene	U			0.134	0.500	1	10/29/2019 09:06	WG1371177
tert-Butylbenzene	U			0.183	0.500	1	10/29/2019 09:06	WG1371177
Carbon disulfide	U			0.101	0.500	1	10/29/2019 09:06	WG1371177
Carbon tetrachloride	U			0.159	0.500	1	10/29/2019 09:06	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/22/19 09:30

L1152823

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/29/2019 09:06	WG1371177
Chlorodibromomethane	U		0.128	0.500	1	10/29/2019 09:06	WG1371177
Chloroethane	U		0.141	2.50	1	10/29/2019 09:06	WG1371177
Chloroform	U		0.0860	0.500	1	10/29/2019 09:06	WG1371177
Chloromethane	U	UJ JO	0.153	1.25	1	10/29/2019 09:06	WG1371177
2-Chlorotoluene	U		0.111	0.500	1	10/29/2019 09:06	WG1371177
4-Chlorotoluene	U		0.0972	0.500	1	10/29/2019 09:06	WG1371177
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 09:06	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 09:06	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 09:06	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 09:06	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 09:06	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 09:06	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 09:06	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 09:06	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 09:06	WG1371177
1,1-Dichloroethene	U		0.188	0.500	1	10/29/2019 09:06	WG1371177
cis-1,2-Dichloroethene	30.4		0.0933	0.500	1	10/29/2019 09:06	WG1371177
trans-1,2-Dichloroethene	0.426	J	0.152	0.500	1	10/29/2019 09:06	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 09:06	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 09:06	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 09:06	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 09:06	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 09:06	WG1371177
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/29/2019 09:06	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 09:06	WG1371177
Di-isopropyl ether	U	UJ JO	0.0924	0.500	1	10/29/2019 09:06	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 09:06	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 09:06	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 09:06	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 09:06	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 09:06	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 09:06	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 09:06	WG1371177
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	10/29/2019 09:06	WG1371177
Methylene Chloride	U		1.07	2.50	1	10/29/2019 09:06	WG1371177
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/29/2019 09:06	WG1371177
Methyl tert-butyl ether	U		0.102	0.500	1	10/29/2019 09:06	WG1371177
Naphthalene	U		0.174	2.50	1	10/29/2019 09:06	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 09:06	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 09:06	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 09:06	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 09:06	WG1371177
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 09:06	WG1371177
Tetrachloroethene	169		0.995	2.50	5	10/29/2019 19:29	WG1371769
Toluene	U		0.412	0.500	1	10/29/2019 09:06	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 09:06	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 09:06	WG1371177
1,1,1-Trichloroethane	U	J4	0.0940	0.500	1	10/29/2019 09:06	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 09:06	WG1371177
Trichloroethene	48.3		0.153	0.500	1	10/29/2019 09:06	WG1371177
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 09:06	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 09:06	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 09:06	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 09:06	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 09:06	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/29/2019 09:06	WG1371177
Vinyl chloride	0.152	J	0.118	0.500	1	10/29/2019 09:06	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 09:06	WG1371177
(S) Toluene-d8	96.8			80.0-120		10/29/2019 09:06	WG1371177
(S) Toluene-d8	106			80.0-120		10/29/2019 19:29	WG1371769
(S) 4-Bromofluorobenzene	105			77.0-126		10/29/2019 09:06	WG1371177
(S) 4-Bromofluorobenzene	100			77.0-126		10/29/2019 19:29	WG1371769
(S) 1,2-Dichloroethane-d4	101			70.0-130		10/29/2019 09:06	WG1371177
(S) 1,2-Dichloroethane-d4	100			70.0-130		10/29/2019 19:29	WG1371769

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	361000		2710	20000	1	10/24/2019 23:34	WG1369144

Sample Narrative:

L1152823-02 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	23600		51.9	1000	1	10/23/2019 19:17	WG1367978
Nitrate	U		22.7	100	1	10/23/2019 19:17	WG1367978
Sulfate	U		77.4	5000	1	10/23/2019 19:17	WG1367978

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	5950		102	1000	1	10/26/2019 19:30	WG1370126

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	3720		75.0	500	5	10/29/2019 02:45	WG1368595
Manganese	723		0.250	5.00	1	10/28/2019 17:09	WG1368595

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	561000		2710	20000	1	10/24/2019 23:42	WG1369144

Sample Narrative:

L1152823-03 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	70400		51.9	1000	1	10/23/2019 19:33	WG1367978
Nitrate	146		22.7	100	1	10/23/2019 19:33	WG1367978
Sulfate	22100		77.4	5000	1	10/23/2019 19:33	WG1367978

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	15800		102	1000	1	10/26/2019 19:57	WG1370126

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	3380		75.0	500	5	10/29/2019 02:48	WG1368595
Manganese	426		0.250	5.00	1	10/28/2019 17:12	WG1368595

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	2330		0.287	0.678	1	10/24/2019 11:49	WG1368615
Ethane	16.3		0.296	1.29	1	10/24/2019 11:49	WG1368615
Ethene	115		0.422	1.27	1	10/24/2019 11:49	WG1368615

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
	ug/l		ug/l	ug/l		date / time		
Acetone	1.45	U	J J4	1.05	25.0	1	10/29/2019 09:26	WG1371177
Acrylonitrile	U		J4	0.873	5.00	1	10/29/2019 09:26	WG1371177
Benzene	U			0.0896	0.500	1	10/29/2019 09:26	WG1371177
Bromobenzene	U			0.133	0.500	1	10/29/2019 09:26	WG1371177
Bromodichloromethane	U		J4	0.0800	0.500	1	10/29/2019 09:26	WG1371177
Bromochloromethane	U			0.145	0.500	1	10/29/2019 09:26	WG1371177
Bromoform	U			0.186	0.500	1	10/29/2019 09:26	WG1371177
Bromomethane	U			0.157	2.50	1	10/29/2019 09:26	WG1371177
n-Butylbenzene	U			0.143	0.500	1	10/29/2019 09:26	WG1371177
sec-Butylbenzene	U			0.134	0.500	1	10/29/2019 09:26	WG1371177
tert-Butylbenzene	U			0.183	0.500	1	10/29/2019 09:26	WG1371177
Carbon disulfide	U			0.101	0.500	1	10/29/2019 09:26	WG1371177
Carbon tetrachloride	U			0.159	0.500	1	10/29/2019 09:26	WG1371177
Chlorobenzene	U			0.140	0.500	1	10/29/2019 09:26	WG1371177
Chlorodibromomethane	U			0.128	0.500	1	10/29/2019 09:26	WG1371177
Chloroethane	U			0.141	2.50	1	10/29/2019 09:26	WG1371177
Chloroform	0.239		J	0.0860	0.500	1	10/29/2019 09:26	WG1371177
Chloromethane	U	UJ	J0	0.153	1.25	1	10/29/2019 09:26	WG1371177
2-Chlorotoluene	U			0.111	0.500	1	10/29/2019 09:26	WG1371177
4-Chlorotoluene	U			0.0972	0.500	1	10/29/2019 09:26	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/22/19 10:45

L1152823

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 09:26	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 09:26	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 09:26	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 09:26	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 09:26	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 09:26	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 09:26	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 09:26	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 09:26	WG1371177
1,1-Dichloroethene	1.78		0.188	0.500	1	10/29/2019 09:26	WG1371177
cis-1,2-Dichloroethene	1420	J	0.933	5.00	10	10/29/2019 19:48	WG1371769
trans-1,2-Dichloroethene	4.45		0.152	0.500	1	10/29/2019 09:26	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 09:26	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 09:26	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 09:26	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 09:26	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 09:26	WG1371177
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/29/2019 09:26	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 09:26	WG1371177
Di-isopropyl ether	U	UJ JO	0.0924	0.500	1	10/29/2019 09:26	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 09:26	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 09:26	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 09:26	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 09:26	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 09:26	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 09:26	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 09:26	WG1371177
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	10/29/2019 09:26	WG1371177
Methylene Chloride	U		1.07	2.50	1	10/29/2019 09:26	WG1371177
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/29/2019 09:26	WG1371177
Methyl tert-butyl ether	U		0.102	0.500	1	10/29/2019 09:26	WG1371177
Naphthalene	U		0.174	2.50	1	10/29/2019 09:26	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 09:26	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 09:26	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 09:26	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 09:26	WG1371177
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 09:26	WG1371177
Tetrachloroethene	U		1.99	5.00	10	10/29/2019 19:48	WG1371769
Toluene	U		0.412	0.500	1	10/29/2019 09:26	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 09:26	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 09:26	WG1371177
1,1,1-Trichloroethane	U	J4	0.0940	0.500	1	10/29/2019 09:26	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 09:26	WG1371177
Trichloroethene	6.77		0.153	0.500	1	10/29/2019 09:26	WG1371177
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 09:26	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 09:26	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 09:26	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 09:26	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 09:26	WG1371177
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/29/2019 09:26	WG1371177
Vinyl chloride	66.2		0.118	0.500	1	10/29/2019 09:26	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 09:26	WG1371177
(S) Toluene-d8	101			80.0-120		10/29/2019 09:26	WG1371177
(S) Toluene-d8	107			80.0-120		10/29/2019 19:48	WG1371769
(S) 4-Bromofluorobenzene	110			77.0-126		10/29/2019 09:26	WG1371177
(S) 4-Bromofluorobenzene	134	J1		77.0-126		10/29/2019 19:48	WG1371769

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	91.8			70.0-130		10/29/2019 09:26	WG1371177
(S) 1,2-Dichloroethane-d4	101			70.0-130		10/29/2019 19:48	WG1371769

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Sample Narrative:

L1152823-03 WG1371177, WG1371769: Not all compounds reportable at lower dilution.

L1152823-03 WG1371177, WG1371769: Cannot be reanalyzed at lower dilution due to high levels of target analytes.



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	330000		2710	20000	1	10/24/2019 23:49	WG1369144

Sample Narrative:

L1152823-04 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	19300		51.9	1000	1	10/23/2019 20:39	WG1367978
Nitrate	U		22.7	100	1	10/23/2019 20:39	WG1367978
Sulfate	23600		77.4	5000	1	10/23/2019 20:39	WG1367978

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	5510		102	1000	1	10/26/2019 20:20	WG1370126

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	4530		75.0	500	5	10/29/2019 02:51	WG1368595
Manganese	930		0.250	5.00	1	10/28/2019 17:15	WG1368595

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	1500		0.287	0.678	1	10/24/2019 11:51	WG1368615
Ethane	4.04		0.296	1.29	1	10/24/2019 11:51	WG1368615
Ethene	4.17		0.422	1.27	1	10/24/2019 11:51	WG1368615

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U	J4	1.05	25.0	1	10/29/2019 09:46	WG1371177
Acrylonitrile	U	J4	0.873	5.00	1	10/29/2019 09:46	WG1371177
Benzene	U		0.0896	0.500	1	10/29/2019 09:46	WG1371177
Bromobenzene	U		0.133	0.500	1	10/29/2019 09:46	WG1371177
Bromodichloromethane	U	J4	0.0800	0.500	1	10/29/2019 09:46	WG1371177
Bromochloromethane	U		0.145	0.500	1	10/29/2019 09:46	WG1371177
Bromoform	U		0.186	0.500	1	10/29/2019 09:46	WG1371177
Bromomethane	U		0.157	2.50	1	10/29/2019 09:46	WG1371177
n-Butylbenzene	U		0.143	0.500	1	10/29/2019 09:46	WG1371177
sec-Butylbenzene	U		0.134	0.500	1	10/29/2019 09:46	WG1371177
tert-Butylbenzene	U		0.183	0.500	1	10/29/2019 09:46	WG1371177
Carbon disulfide	U		0.101	0.500	1	10/29/2019 09:46	WG1371177
Carbon tetrachloride	U		0.159	0.500	1	10/29/2019 09:46	WG1371177
Chlorobenzene	U		0.140	0.500	1	10/29/2019 09:46	WG1371177
Chlorodibromomethane	U		0.128	0.500	1	10/29/2019 09:46	WG1371177
Chloroethane	U		0.141	2.50	1	10/29/2019 09:46	WG1371177
Chloroform	U		0.0860	0.500	1	10/29/2019 09:46	WG1371177
Chloromethane	U	UJ J0	0.153	1.25	1	10/29/2019 09:46	WG1371177
2-Chlorotoluene	U		0.111	0.500	1	10/29/2019 09:46	WG1371177
4-Chlorotoluene	U		0.0972	0.500	1	10/29/2019 09:46	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 09:46	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 09:46	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 09:46	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 09:46	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 09:46	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 09:46	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 09:46	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 09:46	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 09:46	WG1371177
1,1-Dichloroethene	U		0.188	0.500	1	10/29/2019 09:46	WG1371177
cis-1,2-Dichloroethene	0.819	R	0.0933	0.500	1	10/29/2019 20:07	WG1371769
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/29/2019 09:46	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 09:46	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 09:46	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 09:46	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 09:46	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 09:46	WG1371177
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/29/2019 09:46	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 09:46	WG1371177
Di-isopropyl ether	U	UJ JO	0.0924	0.500	1	10/29/2019 09:46	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 09:46	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 09:46	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 09:46	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 09:46	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 09:46	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 09:46	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 09:46	WG1371177
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	10/29/2019 09:46	WG1371177
Methylene Chloride	U		1.07	2.50	1	10/29/2019 09:46	WG1371177
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/29/2019 09:46	WG1371177
Methyl tert-butyl ether	U		0.102	0.500	1	10/29/2019 09:46	WG1371177
Naphthalene	U		0.174	2.50	1	10/29/2019 09:46	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 09:46	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 09:46	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 09:46	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 09:46	WG1371177
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 09:46	WG1371177
Tetrachloroethene	U		0.199	0.500	1	10/29/2019 09:46	WG1371177
Toluene	U		0.412	0.500	1	10/29/2019 09:46	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 09:46	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 09:46	WG1371177
1,1,1-Trichloroethane	U	L	0.0940	0.500	1	10/29/2019 09:46	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 09:46	WG1371177
Trichloroethene	U		0.153	0.500	1	10/29/2019 09:46	WG1371177
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 09:46	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 09:46	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 09:46	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 09:46	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 09:46	WG1371177
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/29/2019 09:46	WG1371177
Vinyl chloride	23.2		0.118	0.500	1	10/29/2019 09:46	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 09:46	WG1371177
(S) Toluene-d8	96.1			80.0-120		10/29/2019 09:46	WG1371177
(S) Toluene-d8	107			80.0-120		10/29/2019 20:07	WG1371769
(S) 4-Bromofluorobenzene	105			77.0-126		10/29/2019 09:46	WG1371177
(S) 4-Bromofluorobenzene	97.9			77.0-126		10/29/2019 20:07	WG1371769

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	101			70.0-130		10/29/2019 09:46	WG1371177
(S) 1,2-Dichloroethane-d4	94.1			70.0-130		10/29/2019 20:07	WG1371769

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	245000		2710	20000	1	10/24/2019 23:57	WG1369144

Sample Narrative:

L1152823-05 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	10300		51.9	1000	1	10/23/2019 20:55	WG1367978
Nitrate	1980		22.7	100	1	10/23/2019 20:55	WG1367978
Sulfate	67300		77.4	5000	1	10/23/2019 20:55	WG1367978

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	5090		102	1000	1	10/26/2019 23:06	WG1370126

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	678		15.0	100	1	10/28/2019 17:19	WG1368595
Manganese	376		0.250	5.00	1	10/28/2019 17:19	WG1368595

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	176	B	31.6	100	1	11/03/2019 01:01	WG1373020
(S) a,a,a-Trifluorotoluene(FID)	96.6			78.0-120		11/03/2019 01:01	WG1373020

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	74.8	J+	0.287	0.678	1	10/24/2019 11:54	WG1368615
Ethane	U		0.296	1.29	1	10/24/2019 11:54	WG1368615
Ethene	U		0.422	1.27	1	10/24/2019 11:54	WG1368615

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch	
Acetone	1.24	U	J J4	1.05	25.0	1	10/29/2019 10:06	WG1371177
Acrylonitrile	U		J4	0.873	5.00	1	10/29/2019 10:06	WG1371177
Benzene	U		0.0896	0.500	1	10/29/2019 10:06	WG1371177	
Bromobenzene	U		0.133	0.500	1	10/29/2019 10:06	WG1371177	
Bromodichloromethane	U		J4	0.0800	0.500	1	10/29/2019 10:06	WG1371177
Bromochloromethane	U		0.145	0.500	1	10/29/2019 10:06	WG1371177	
Bromoform	U		0.186	0.500	1	10/29/2019 10:06	WG1371177	
Bromomethane	U		0.157	2.50	1	10/29/2019 10:06	WG1371177	
n-Butylbenzene	U		0.143	0.500	1	10/29/2019 10:06	WG1371177	
sec-Butylbenzene	U		0.134	0.500	1	10/29/2019 10:06	WG1371177	
tert-Butylbenzene	U		0.183	0.500	1	10/29/2019 10:06	WG1371177	
Carbon disulfide	U		0.101	0.500	1	10/29/2019 10:06	WG1371177	
Carbon tetrachloride	U		0.159	0.500	1	10/29/2019 10:06	WG1371177	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Collected date/time: 10/22/19 12:50

L1152823

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/29/2019 10:06	WG1371177
Chlorodibromomethane	U		0.128	0.500	1	10/29/2019 10:06	WG1371177
Chloroethane	U		0.141	2.50	1	10/29/2019 10:06	WG1371177
Chloroform	U		0.0860	0.500	1	10/29/2019 10:06	WG1371177
Chloromethane	U	UJ JO	0.153	1.25	1	10/29/2019 10:06	WG1371177
2-Chlorotoluene	U		0.111	0.500	1	10/29/2019 10:06	WG1371177
4-Chlorotoluene	U		0.0972	0.500	1	10/29/2019 10:06	WG1371177
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 10:06	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 10:06	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 10:06	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 10:06	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 10:06	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 10:06	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 10:06	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 10:06	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 10:06	WG1371177
1,1-Dichloroethene	U		0.188	0.500	1	10/29/2019 10:06	WG1371177
cis-1,2-Dichloroethene	31.8	J	0.0933	0.500	1	10/29/2019 10:06	WG1371177
trans-1,2-Dichloroethene	0.398	J	0.152	0.500	1	10/29/2019 10:06	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 10:06	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 10:06	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 10:06	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 10:06	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 10:06	WG1371177
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/29/2019 10:06	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 10:06	WG1371177
Di-isopropyl ether	U	UJ JO	0.0924	0.500	1	10/29/2019 10:06	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 10:06	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 10:06	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 10:06	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 10:06	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 10:06	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 10:06	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 10:06	WG1371177
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	10/29/2019 10:06	WG1371177
Methylene Chloride	U		1.07	2.50	1	10/29/2019 10:06	WG1371177
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/29/2019 10:06	WG1371177
Methyl tert-butyl ether	U		0.102	0.500	1	10/29/2019 10:06	WG1371177
Naphthalene	U		0.174	2.50	1	10/29/2019 10:06	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 10:06	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 10:06	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 10:06	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 10:06	WG1371177
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 10:06	WG1371177
Tetrachloroethene	135	J	0.995	2.50	5	10/29/2019 20:26	WG1371769
Toluene	U		0.412	0.500	1	10/29/2019 10:06	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 10:06	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 10:06	WG1371177
1,1,1-Trichloroethane	U	J4	0.0940	0.500	1	10/29/2019 10:06	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 10:06	WG1371177
Trichloroethene	46.6		0.153	0.500	1	10/29/2019 10:06	WG1371177
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 10:06	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 10:06	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 10:06	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 10:06	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 10:06	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	UJ J0	0.645	5.00	1	10/29/2019 10:06	WG1371177
Vinyl chloride	0.162	J	0.118	0.500	1	10/29/2019 10:06	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 10:06	WG1371177
(S) Toluene-d8	96.8			80.0-120		10/29/2019 10:06	WG1371177
(S) Toluene-d8	107			80.0-120		10/29/2019 20:26	WG1371769
(S) 4-Bromofluorobenzene	105			77.0-126		10/29/2019 10:06	WG1371177
(S) 4-Bromofluorobenzene	60.4	J2		77.0-126		10/29/2019 20:26	WG1371769
(S) 1,2-Dichloroethane-d4	103			70.0-130		10/29/2019 10:06	WG1371177
(S) 1,2-Dichloroethane-d4	95.6			70.0-130		10/29/2019 20:26	WG1371769

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	330000		2710	20000	1	10/25/2019 00:13	WG1369144

Sample Narrative:

L1152823-06 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	35000		51.9	1000	1	10/23/2019 21:12	WG1367978
Nitrate	U		22.7	100	1	10/23/2019 21:12	WG1367978
Sulfate	12800		77.4	5000	1	10/23/2019 21:12	WG1367978

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2860	B	102	1000	1	10/26/2019 23:27	WG1370126

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	3060		75.0	500	5	10/29/2019 02:55	WG1368595
Manganese	1050		0.250	5.00	1	10/28/2019 17:22	WG1368595

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch	
Gasoline Range Organics-NWTPH	96.4	U	B	31.6	100	1	10/31/2019 08:01	WG1371615
(S) a,a,a-Trifluorotoluene(FID)	95.1			78.0-120		10/31/2019 08:01	WG1371615	

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	731		0.287	0.678	1	10/24/2019 11:56	WG1368615
Ethane	U		0.296	1.29	1	10/24/2019 11:56	WG1368615
Ethene	U		0.422	1.27	1	10/24/2019 11:56	WG1368615

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch	
Acetone	1.40	U	J J4	1.05	25.0	1	10/29/2019 10:27	WG1371177
Acrylonitrile	U		J4	0.873	5.00	1	10/29/2019 10:27	WG1371177
Benzene	U		0.0896	0.500	1	10/29/2019 10:27	WG1371177	
Bromobenzene	U		0.133	0.500	1	10/29/2019 10:27	WG1371177	
Bromodichloromethane	U		J4	0.0800	0.500	1	10/29/2019 10:27	WG1371177
Bromochloromethane	U		0.145	0.500	1	10/29/2019 10:27	WG1371177	
Bromoform	U		0.186	0.500	1	10/29/2019 10:27	WG1371177	
Bromomethane	U		0.157	2.50	1	10/29/2019 10:27	WG1371177	
n-Butylbenzene	U		0.143	0.500	1	10/29/2019 10:27	WG1371177	
sec-Butylbenzene	U		0.134	0.500	1	10/29/2019 10:27	WG1371177	
tert-Butylbenzene	U		0.183	0.500	1	10/29/2019 10:27	WG1371177	
Carbon disulfide	U		0.101	0.500	1	10/29/2019 10:27	WG1371177	
Carbon tetrachloride	U		0.159	0.500	1	10/29/2019 10:27	WG1371177	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Collected date/time: 10/22/19 13:00

L1152823

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/29/2019 10:27	WG1371177
Chlorodibromomethane	U		0.128	0.500	1	10/29/2019 10:27	WG1371177
Chloroethane	U		0.141	2.50	1	10/29/2019 10:27	WG1371177
Chloroform	U		0.0860	0.500	1	10/29/2019 10:27	WG1371177
Chloromethane	U	UJ JO	0.153	1.25	1	10/29/2019 10:27	WG1371177
2-Chlorotoluene	U		0.111	0.500	1	10/29/2019 10:27	WG1371177
4-Chlorotoluene	U		0.0972	0.500	1	10/29/2019 10:27	WG1371177
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/29/2019 10:27	WG1371177
1,2-Dibromoethane	U		0.193	0.500	1	10/29/2019 10:27	WG1371177
Dibromomethane	U		0.117	0.500	1	10/29/2019 10:27	WG1371177
1,2-Dichlorobenzene	U		0.101	0.500	1	10/29/2019 10:27	WG1371177
1,3-Dichlorobenzene	U		0.130	0.500	1	10/29/2019 10:27	WG1371177
1,4-Dichlorobenzene	U		0.121	0.500	1	10/29/2019 10:27	WG1371177
Dichlorodifluoromethane	U		0.127	2.50	1	10/29/2019 10:27	WG1371177
1,1-Dichloroethane	U		0.114	0.500	1	10/29/2019 10:27	WG1371177
1,2-Dichloroethane	U		0.108	0.500	1	10/29/2019 10:27	WG1371177
1,1-Dichloroethene	U		0.188	0.500	1	10/29/2019 10:27	WG1371177
cis-1,2-Dichloroethene	0.945		0.0933	0.500	1	10/29/2019 10:27	WG1371177
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/29/2019 10:27	WG1371177
1,2-Dichloropropane	U		0.190	0.500	1	10/29/2019 10:27	WG1371177
1,1-Dichloropropene	U		0.128	0.500	1	10/29/2019 10:27	WG1371177
1,3-Dichloropropane	U		0.147	1.00	1	10/29/2019 10:27	WG1371177
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/29/2019 10:27	WG1371177
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/29/2019 10:27	WG1371177
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/29/2019 10:27	WG1371177
2,2-Dichloropropane	U		0.0929	0.500	1	10/29/2019 10:27	WG1371177
Di-isopropyl ether	U	UJ JO	0.0924	0.500	1	10/29/2019 10:27	WG1371177
Ethylbenzene	U		0.158	0.500	1	10/29/2019 10:27	WG1371177
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/29/2019 10:27	WG1371177
2-Hexanone	U		0.757	5.00	1	10/29/2019 10:27	WG1371177
n-Hexane	U		0.305	5.00	1	10/29/2019 10:27	WG1371177
Iodomethane	U		0.377	10.0	1	10/29/2019 10:27	WG1371177
Isopropylbenzene	U		0.126	0.500	1	10/29/2019 10:27	WG1371177
p-Isopropyltoluene	U		0.138	0.500	1	10/29/2019 10:27	WG1371177
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	10/29/2019 10:27	WG1371177
Methylene Chloride	U		1.07	2.50	1	10/29/2019 10:27	WG1371177
4-Methyl-2-pentanone (MIBK)	U	UJ JO	0.823	5.00	1	10/29/2019 10:27	WG1371177
Methyl tert-butyl ether	U		0.102	0.500	1	10/29/2019 10:27	WG1371177
Naphthalene	U		0.174	2.50	1	10/29/2019 10:27	WG1371177
n-Propylbenzene	U		0.162	0.500	1	10/29/2019 10:27	WG1371177
Styrene	U		0.117	0.500	1	10/29/2019 10:27	WG1371177
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/29/2019 10:27	WG1371177
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/29/2019 10:27	WG1371177
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/29/2019 10:27	WG1371177
Tetrachloroethene	U		0.199	0.500	1	10/29/2019 20:45	WG1371769
Toluene	U		0.412	0.500	1	10/29/2019 10:27	WG1371177
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/29/2019 10:27	WG1371177
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/29/2019 10:27	WG1371177
1,1,1-Trichloroethane	U	J4	0.0940	0.500	1	10/29/2019 10:27	WG1371177
1,1,2-Trichloroethane	U		0.186	0.500	1	10/29/2019 10:27	WG1371177
Trichloroethene	U		0.153	0.500	1	10/29/2019 10:27	WG1371177
Trichlorofluoromethane	U		0.130	2.50	1	10/29/2019 10:27	WG1371177
1,2,3-Trichloropropane	U		0.247	2.50	1	10/29/2019 10:27	WG1371177
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/29/2019 10:27	WG1371177
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/29/2019 10:27	WG1371177
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/29/2019 10:27	WG1371177

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	UJ JO	0.645	5.00	1	10/29/2019 10:27	WG1371177
Vinyl chloride	0.214	J	0.118	0.500	1	10/29/2019 10:27	WG1371177
Xylenes, Total	U		0.316	1.50	1	10/29/2019 10:27	WG1371177
(S) Toluene-d8	99.2			80.0-120		10/29/2019 10:27	WG1371177
(S) Toluene-d8	106			80.0-120		10/29/2019 20:45	WG1371769
(S) 4-Bromofluorobenzene	109			77.0-126		10/29/2019 10:27	WG1371177
(S) 4-Bromofluorobenzene	98.1			77.0-126		10/29/2019 20:45	WG1371769
(S) 1,2-Dichloroethane-d4	102			70.0-130		10/29/2019 10:27	WG1371177
(S) 1,2-Dichloroethane-d4	95.3			70.0-130		10/29/2019 20:45	WG1371769

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	330000		2710	20000	1	10/25/2019 00:20	WG1369144

Sample Narrative:

L1152823-07 WG1369144: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	35100		51.9	1000	1	10/23/2019 21:28	WG1367978
Nitrate	U		22.7	100	1	10/23/2019 21:28	WG1367978
Sulfate	12800		77.4	5000	1	10/23/2019 21:28	WG1367978

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2900	B	102	1000	1	10/26/2019 23:44	WG1370126

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	2590		75.0	500	5	10/29/2019 02:58	WG1368595
Manganese	1030		0.250	5.00	1	10/28/2019 17:25	WG1368595

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	90.8	U SJ	31.6	100	1	10/31/2019 08:23	WG1371615
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	96.4			78.0-120		10/31/2019 08:23	WG1371615

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	655		0.287	0.678	1	10/24/2019 11:58	WG1368615
Ethane	U		0.296	1.29	1	10/24/2019 11:58	WG1368615
Ethene	U		0.422	1.27	1	10/24/2019 11:58	WG1368615

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	1.47	J	1.05	25.0	1	10/31/2019 21:50	WG1373274
Acrylonitrile	U		0.873	5.00	1	10/31/2019 21:50	WG1373274
Benzene	U		0.0896	0.500	1	10/31/2019 21:50	WG1373274
Bromobenzene	U	J	0.133	0.500	1	10/31/2019 21:50	WG1373274
Bromodichloromethane	U		0.0800	0.500	1	10/31/2019 21:50	WG1373274
Bromochloromethane	U		0.145	0.500	1	10/31/2019 21:50	WG1373274
Bromoform	U		0.186	0.500	1	10/31/2019 21:50	WG1373274
Bromomethane	U		0.157	2.50	1	10/31/2019 21:50	WG1373274
n-Butylbenzene	U		0.143	0.500	1	10/31/2019 21:50	WG1373274
sec-Butylbenzene	U		0.134	0.500	1	10/31/2019 21:50	WG1373274
tert-Butylbenzene	U		0.183	0.500	1	10/31/2019 21:50	WG1373274
Carbon disulfide	U		0.101	0.500	1	10/31/2019 21:50	WG1373274
Carbon tetrachloride	U		0.159	0.500	1	10/31/2019 21:50	WG1373274

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/22/19 14:00

L1152823

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/31/2019 21:50	WG1373274
Chlorodibromomethane	U		0.128	0.500	1	10/31/2019 21:50	WG1373274
Chloroethane	U		0.141	2.50	1	10/31/2019 21:50	WG1373274
Chloroform	U		0.0860	0.500	1	10/31/2019 21:50	WG1373274
Chloromethane	U		0.153	1.25	1	10/31/2019 21:50	WG1373274
2-Chlorotoluene	U	J4	0.111	0.500	1	10/31/2019 21:50	WG1373274
4-Chlorotoluene	U		0.0972	0.500	1	10/31/2019 21:50	WG1373274
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/31/2019 21:50	WG1373274
1,2-Dibromoethane	U		0.193	0.500	1	10/31/2019 21:50	WG1373274
Dibromomethane	U		0.117	0.500	1	10/31/2019 21:50	WG1373274
1,2-Dichlorobenzene	U		0.101	0.500	1	10/31/2019 21:50	WG1373274
1,3-Dichlorobenzene	U		0.130	0.500	1	10/31/2019 21:50	WG1373274
1,4-Dichlorobenzene	U		0.121	0.500	1	10/31/2019 21:50	WG1373274
Dichlorodifluoromethane	U		0.127	2.50	1	10/31/2019 21:50	WG1373274
1,1-Dichloroethane	U		0.114	0.500	1	10/31/2019 21:50	WG1373274
1,2-Dichloroethane	U		0.108	0.500	1	10/31/2019 21:50	WG1373274
1,1-Dichloroethene	U		0.188	0.500	1	10/31/2019 21:50	WG1373274
cis-1,2-Dichloroethene	0.720		0.0933	0.500	1	10/31/2019 21:50	WG1373274
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/31/2019 21:50	WG1373274
1,2-Dichloropropane	U		0.190	0.500	1	10/31/2019 21:50	WG1373274
1,1-Dichloropropene	U		0.128	0.500	1	10/31/2019 21:50	WG1373274
1,3-Dichloropropane	U		0.147	1.00	1	10/31/2019 21:50	WG1373274
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/31/2019 21:50	WG1373274
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/31/2019 21:50	WG1373274
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	10/31/2019 21:50	WG1373274
2,2-Dichloropropane	U		0.0929	0.500	1	10/31/2019 21:50	WG1373274
Di-isopropyl ether	U		0.0924	0.500	1	10/31/2019 21:50	WG1373274
Ethylbenzene	U		0.158	0.500	1	10/31/2019 21:50	WG1373274
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/31/2019 21:50	WG1373274
2-Hexanone	U		0.757	5.00	1	10/31/2019 21:50	WG1373274
n-Hexane	U		0.305	5.00	1	10/31/2019 21:50	WG1373274
Iodomethane	U		0.377	10.0	1	10/31/2019 21:50	WG1373274
Isopropylbenzene	U		0.126	0.500	1	10/31/2019 21:50	WG1373274
p-Isopropyltoluene	U		0.138	0.500	1	10/31/2019 21:50	WG1373274
2-Butanone (MEK)	U		1.28	5.00	1	10/31/2019 21:50	WG1373274
Methylene Chloride	U		1.07	2.50	1	10/31/2019 21:50	WG1373274
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/31/2019 21:50	WG1373274
Methyl tert-butyl ether	U		0.102	0.500	1	10/31/2019 21:50	WG1373274
Naphthalene	U		0.174	2.50	1	10/31/2019 21:50	WG1373274
n-Propylbenzene	U		0.162	0.500	1	10/31/2019 21:50	WG1373274
Styrene	U		0.117	0.500	1	10/31/2019 21:50	WG1373274
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/31/2019 21:50	WG1373274
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/31/2019 21:50	WG1373274
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/31/2019 21:50	WG1373274
Tetrachloroethene	U		0.199	0.500	1	10/31/2019 21:50	WG1373274
Toluene	U		0.412	0.500	1	10/31/2019 21:50	WG1373274
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/31/2019 21:50	WG1373274
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/31/2019 21:50	WG1373274
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/31/2019 21:50	WG1373274
1,1,2-Trichloroethane	U		0.186	0.500	1	10/31/2019 21:50	WG1373274
Trichloroethene	U		0.153	0.500	1	10/31/2019 21:50	WG1373274
Trichlorofluoromethane	U		0.130	2.50	1	10/31/2019 21:50	WG1373274
1,2,3-Trichloropropane	U		0.247	2.50	1	10/31/2019 21:50	WG1373274
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/31/2019 21:50	WG1373274
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/31/2019 21:50	WG1373274
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/31/2019 21:50	WG1373274

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/31/2019 21:50	WG1373274
Vinyl chloride	U		0.118	0.500	1	10/31/2019 21:50	WG1373274
Xylenes, Total	U		0.316	1.50	1	10/31/2019 21:50	WG1373274
<i>(S) Toluene-d8</i>	113			80.0-120		10/31/2019 21:50	WG1373274
<i>(S) 4-Bromofluorobenzene</i>	109			77.0-126		10/31/2019 21:50	WG1373274
<i>(S) 1,2-Dichloroethane-d4</i>	101			70.0-130		10/31/2019 21:50	WG1373274

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	596000		2710	20000	1	11/06/2019 19:55	WG1376309

Sample Narrative:

L1155658-01 WG1376309: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	66900	J	51.9	1000	1	10/31/2019 21:01	WG1372794
Nitrate	U		22.7	100	1	10/31/2019 21:01	WG1372794
Sulfate	909	J	77.4	5000	1	11/01/2019 15:54	WG1373549

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	21200		102	1000	1	11/03/2019 02:25	WG1374098

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	8880		150	1000	10	11/05/2019 17:46	WG1373700
Manganese	1740		2.50	50.0	10	11/05/2019 17:46	WG1373700

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	6040		0.287	0.678	1	11/01/2019 14:20	WG1373387
Ethane	113		0.296	1.29	1	11/01/2019 14:20	WG1373387
Ethene	460	J	0.422	1.27	1	11/01/2019 14:20	WG1373387

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		105	2500	100	11/08/2019 13:11	WG1377124
Acrylonitrile	U		0.873	5.00	1	11/06/2019 21:11	WG1375825
Benzene	0.230	J	0.0896	0.500	1	11/06/2019 21:11	WG1375825
Bromobenzene	U		0.133	0.500	1	11/06/2019 21:11	WG1375825
Bromodichloromethane	U		0.0800	0.500	1	11/06/2019 21:11	WG1375825
Bromochloromethane	U		0.145	0.500	1	11/06/2019 21:11	WG1375825
Bromoform	U		0.186	0.500	1	11/06/2019 21:11	WG1375825
Bromomethane	U	UJ JO	0.157	2.50	1	11/06/2019 21:11	WG1375825
n-Butylbenzene	U		0.143	0.500	1	11/06/2019 21:11	WG1375825
sec-Butylbenzene	U		0.134	0.500	1	11/06/2019 21:11	WG1375825
tert-Butylbenzene	U		0.183	0.500	1	11/06/2019 21:11	WG1375825
Carbon disulfide	U		0.101	0.500	1	11/06/2019 21:11	WG1375825
Carbon tetrachloride	U		0.159	0.500	1	11/06/2019 21:11	WG1375825
Chlorobenzene	U		0.140	0.500	1	11/06/2019 21:11	WG1375825
Chlorodibromomethane	U		0.128	0.500	1	11/06/2019 21:11	WG1375825
Chloroethane	U		0.141	2.50	1	11/06/2019 21:11	WG1375825
Chloroform	U		0.0860	0.500	1	11/06/2019 21:11	WG1375825
Chloromethane	U	UJ JO	0.153	1.25	1	11/06/2019 21:11	WG1375825
2-Chlorotoluene	U		0.111	0.500	1	11/06/2019 21:11	WG1375825
4-Chlorotoluene	U		0.0972	0.500	1	11/06/2019 21:11	WG1375825

JC 12/19/19

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/06/2019 21:11	WG1375825
1,2-Dibromoethane	U		0.193	0.500	1	11/06/2019 21:11	WG1375825
Dibromomethane	U		0.117	0.500	1	11/06/2019 21:11	WG1375825
1,2-Dichlorobenzene	U		0.101	0.500	1	11/06/2019 21:11	WG1375825
1,3-Dichlorobenzene	U		0.130	0.500	1	11/06/2019 21:11	WG1375825
1,4-Dichlorobenzene	U		0.121	0.500	1	11/06/2019 21:11	WG1375825
Dichlorodifluoromethane	U		0.127	2.50	1	11/06/2019 21:11	WG1375825
1,1-Dichloroethane	U		0.114	0.500	1	11/06/2019 21:11	WG1375825
1,2-Dichloroethane	U		0.108	0.500	1	11/06/2019 21:11	WG1375825
1,1-Dichloroethene	2.51	J	0.188	0.500	1	11/06/2019 21:11	WG1375825
cis-1,2-Dichloroethene	1200	J	9.33	50.0	100	11/08/2019 13:11	WG1377124
trans-1,2-Dichloroethene	7.13	J	0.152	0.500	1	11/06/2019 21:11	WG1375825
1,2-Dichloropropane	U		0.190	0.500	1	11/06/2019 21:11	WG1375825
1,1-Dichloropropene	U		0.128	0.500	1	11/06/2019 21:11	WG1375825
1,3-Dichloropropane	U		0.147	1.00	1	11/06/2019 21:11	WG1375825
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/06/2019 21:11	WG1375825
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/06/2019 21:11	WG1375825
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	11/06/2019 21:11	WG1375825
2,2-Dichloropropane	U		0.0929	0.500	1	11/06/2019 21:11	WG1375825
Di-isopropyl ether	U		0.0924	0.500	1	11/06/2019 21:11	WG1375825
Ethylbenzene	U		0.158	0.500	1	11/06/2019 21:11	WG1375825
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/06/2019 21:11	WG1375825
2-Hexanone	U		0.757	5.00	1	11/06/2019 21:11	WG1375825
n-Hexane	U		0.305	5.00	1	11/06/2019 21:11	WG1375825
Iodomethane	U	UJ JO	0.377	10.0	1	11/06/2019 21:11	WG1375825
Isopropylbenzene	U		0.126	0.500	1	11/06/2019 21:11	WG1375825
p-Isopropyltoluene	U		0.138	0.500	1	11/06/2019 21:11	WG1375825
2-Butanone (MEK)	U		1.28	5.00	1	11/06/2019 21:11	WG1375825
Methylene Chloride	U		1.07	2.50	1	11/06/2019 21:11	WG1375825
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/06/2019 21:11	WG1375825
Methyl tert-butyl ether	U		0.102	0.500	1	11/06/2019 21:11	WG1375825
Naphthalene	U		0.174	2.50	1	11/06/2019 21:11	WG1375825
n-Propylbenzene	U		0.162	0.500	1	11/06/2019 21:11	WG1375825
Styrene	U		0.117	0.500	1	11/06/2019 21:11	WG1375825
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/06/2019 21:11	WG1375825
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/06/2019 21:11	WG1375825
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/06/2019 21:11	WG1375825
Tetrachloroethene	U		0.199	0.500	1	11/06/2019 21:11	WG1375825
Toluene	U		0.412	0.500	1	11/06/2019 21:11	WG1375825
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/06/2019 21:11	WG1375825
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/06/2019 21:11	WG1375825
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/06/2019 21:11	WG1375825
1,1,2-Trichloroethane	U		0.186	0.500	1	11/06/2019 21:11	WG1375825
Trichloroethene	2.18	J	0.153	0.500	1	11/06/2019 21:11	WG1375825
Trichlorofluoromethane	U		0.130	2.50	1	11/06/2019 21:11	WG1375825
1,2,3-Trichloropropane	U		0.247	2.50	1	11/06/2019 21:11	WG1375825
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/06/2019 21:11	WG1375825
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/06/2019 21:11	WG1375825
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/06/2019 21:11	WG1375825
Vinyl acetate	U		0.645	5.00	1	11/06/2019 21:11	WG1375825
Vinyl chloride	1760		11.8	50.0	100	11/08/2019 13:11	WG1377124
Xylenes, Total	U		0.316	1.50	1	11/06/2019 21:11	WG1375825
(S) Toluene-d8	93.8			80.0-120		11/06/2019 21:11	WG1375825
(S) Toluene-d8	93.8			80.0-120		11/08/2019 13:11	WG1377124
(S) 4-Bromofluorobenzene	92.4			77.0-126		11/06/2019 21:11	WG1375825
(S) 4-Bromofluorobenzene	104			77.0-126		11/08/2019 13:11	WG1377124

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	89.9			70.0-130		11/06/2019 21:11	WG1375825
(S) 1,2-Dichloroethane-d4	106			70.0-130		11/08/2019 13:11	WG1377124

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/19/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	466000		2710	20000	1	11/06/2019 22:34	WG1376309

Sample Narrative:

L1155658-02 WG1376309: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	44500	J	51.9	1000	1	10/31/2019 21:36	WG1372794
Nitrate	U		22.7	100	1	10/31/2019 21:36	WG1372794
Sulfate	4730	J	77.4	5000	1	11/01/2019 16:20	WG1373549

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	18800		102	1000	1	11/03/2019 02:41	WG1374098

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	8380		150	1000	10	11/05/2019 17:50	WG1373700
Manganese	1520		2.50	50.0	10	11/05/2019 17:50	WG1373700

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	5710		0.287	0.678	1	11/01/2019 14:25	WG1373387
Ethane	84.9		0.296	1.29	1	11/01/2019 14:25	WG1373387
Ethene	305	J	0.422	1.27	1	11/01/2019 14:25	WG1373387

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U		105	2500	100	11/08/2019 13:31	WG1377124
Acrylonitrile	U		0.873	5.00	1	11/06/2019 21:31	WG1375825
Benzene	0.212	J	0.0896	0.500	1	11/06/2019 21:31	WG1375825
Bromobenzene	U		0.133	0.500	1	11/06/2019 21:31	WG1375825
Bromodichloromethane	U		0.0800	0.500	1	11/06/2019 21:31	WG1375825
Bromochloromethane	U		0.145	0.500	1	11/06/2019 21:31	WG1375825
Bromoform	U		0.186	0.500	1	11/06/2019 21:31	WG1375825
Bromomethane	U	UJ JO	0.157	2.50	1	11/06/2019 21:31	WG1375825
n-Butylbenzene	U		0.143	0.500	1	11/06/2019 21:31	WG1375825
sec-Butylbenzene	U		0.134	0.500	1	11/06/2019 21:31	WG1375825
tert-Butylbenzene	U		0.183	0.500	1	11/06/2019 21:31	WG1375825
Carbon disulfide	U		0.101	0.500	1	11/06/2019 21:31	WG1375825
Carbon tetrachloride	U		0.159	0.500	1	11/06/2019 21:31	WG1375825
Chlorobenzene	U		0.140	0.500	1	11/06/2019 21:31	WG1375825
Chlorodibromomethane	U		0.128	0.500	1	11/06/2019 21:31	WG1375825
Chloroethane	U		0.141	2.50	1	11/06/2019 21:31	WG1375825
Chloroform	U		0.0860	0.500	1	11/06/2019 21:31	WG1375825
Chloromethane	U	Uj JO	0.153	1.25	1	11/06/2019 21:31	WG1375825
2-Chlorotoluene	U		0.111	0.500	1	11/06/2019 21:31	WG1375825
4-Chlorotoluene	U		0.0972	0.500	1	11/06/2019 21:31	WG1375825

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 12/19/19



Collected date/time: 10/30/19 13:15

L1155658

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/06/2019 21:31	WG1375825
1,2-Dibromoethane	U		0.193	0.500	1	11/06/2019 21:31	WG1375825
Dibromomethane	U		0.117	0.500	1	11/06/2019 21:31	WG1375825
1,2-Dichlorobenzene	U		0.101	0.500	1	11/06/2019 21:31	WG1375825
1,3-Dichlorobenzene	U		0.130	0.500	1	11/06/2019 21:31	WG1375825
1,4-Dichlorobenzene	U		0.121	0.500	1	11/06/2019 21:31	WG1375825
Dichlorodifluoromethane	U		0.127	2.50	1	11/06/2019 21:31	WG1375825
1,1-Dichloroethane	U		0.114	0.500	1	11/06/2019 21:31	WG1375825
1,2-Dichloroethane	U		0.108	0.500	1	11/06/2019 21:31	WG1375825
1,1-Dichloroethene	4.63	J	0.188	0.500	1	11/06/2019 21:31	WG1375825
cis-1,2-Dichloroethene	2250	J	9.33	50.0	100	11/08/2019 13:31	WG1377124
trans-1,2-Dichloroethene	10.5	J	0.152	0.500	1	11/06/2019 21:31	WG1375825
1,2-Dichloropropane	U		0.190	0.500	1	11/06/2019 21:31	WG1375825
1,1-Dichloropropene	U		0.128	0.500	1	11/06/2019 21:31	WG1375825
1,3-Dichloropropane	U		0.147	1.00	1	11/06/2019 21:31	WG1375825
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/06/2019 21:31	WG1375825
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/06/2019 21:31	WG1375825
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	11/06/2019 21:31	WG1375825
2,2-Dichloropropane	U		0.0929	0.500	1	11/06/2019 21:31	WG1375825
Di-isopropyl ether	U		0.0924	0.500	1	11/06/2019 21:31	WG1375825
Ethylbenzene	U		0.158	0.500	1	11/06/2019 21:31	WG1375825
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/06/2019 21:31	WG1375825
2-Hexanone	U		0.757	5.00	1	11/06/2019 21:31	WG1375825
n-Hexane	U		0.305	5.00	1	11/06/2019 21:31	WG1375825
Iodomethane	U	UJ JO	0.377	10.0	1	11/06/2019 21:31	WG1375825
Isopropylbenzene	U		0.126	0.500	1	11/06/2019 21:31	WG1375825
p-Isopropyltoluene	U		0.138	0.500	1	11/06/2019 21:31	WG1375825
2-Butanone (MEK)	U		1.28	5.00	1	11/06/2019 21:31	WG1375825
Methylene Chloride	U		1.07	2.50	1	11/06/2019 21:31	WG1375825
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/06/2019 21:31	WG1375825
Methyl tert-butyl ether	U		0.102	0.500	1	11/06/2019 21:31	WG1375825
Naphthalene	U		0.174	2.50	1	11/06/2019 21:31	WG1375825
n-Propylbenzene	U		0.162	0.500	1	11/06/2019 21:31	WG1375825
Styrene	U		0.117	0.500	1	11/06/2019 21:31	WG1375825
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/06/2019 21:31	WG1375825
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/06/2019 21:31	WG1375825
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/06/2019 21:31	WG1375825
Tetrachloroethene	U		0.199	0.500	1	11/06/2019 21:31	WG1375825
Toluene	U		0.412	0.500	1	11/06/2019 21:31	WG1375825
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/06/2019 21:31	WG1375825
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/06/2019 21:31	WG1375825
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/06/2019 21:31	WG1375825
1,1,2-Trichloroethane	U		0.186	0.500	1	11/06/2019 21:31	WG1375825
Trichloroethene	12.7	J	0.153	0.500	1	11/06/2019 21:31	WG1375825
Trichlorofluoromethane	U		0.130	2.50	1	11/06/2019 21:31	WG1375825
1,2,3-Trichloropropane	U		0.247	2.50	1	11/06/2019 21:31	WG1375825
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/06/2019 21:31	WG1375825
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/06/2019 21:31	WG1375825
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/06/2019 21:31	WG1375825
Vinyl acetate	U		0.645	5.00	1	11/06/2019 21:31	WG1375825
Vinyl chloride	1710		11.8	50.0	100	11/08/2019 13:31	WG1377124
Xylenes, Total	U		0.316	1.50	1	11/06/2019 21:31	WG1375825
(S) Toluene-d8	93.5			80.0-120		11/06/2019 21:31	WG1375825
(S) Toluene-d8	102			80.0-120		11/08/2019 13:31	WG1377124
(S) 4-Bromofluorobenzene	94.2			77.0-126		11/06/2019 21:31	WG1375825
(S) 4-Bromofluorobenzene	104			77.0-126		11/08/2019 13:31	WG1377124

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	94.1			70.0-130		11/06/2019 21:31	WG1375825
(S) 1,2-Dichloroethane-d4	110			70.0-130		11/08/2019 13:31	WG1377124

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC
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Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	396000		2710	20000	1	11/07/2019 02:56	WG1376333

Sample Narrative:

L1156109-01 WG1376333: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	17600		51.9	1000	1	11/01/2019 18:44	WG1373549
Nitrate	U		22.7	100	1	11/01/2019 18:44	WG1373549
Sulfate	2990	J	77.4	5000	1	11/01/2019 18:44	WG1373549

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	16800		102	1000	1	11/05/2019 22:49	WG1375433

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	213		15.0	100	1	11/07/2019 13:42	WG1373704
Manganese	1020		0.250	5.00	1	11/07/2019 13:42	WG1373704

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	2440		0.287	0.678	1	11/05/2019 15:54	WG1375047
Ethane	75.1		0.296	1.29	1	11/05/2019 15:54	WG1375047
Ethene	81.1		0.422	1.27	1	11/05/2019 15:54	WG1375047

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
	ug/l		ug/l	ug/l		date / time		
Acetone	5.97	J	J JO J4	1.05	25.0	1	11/09/2019 14:23	WG1377899
Acrylonitrile	U		J4	0.873	5.00	1	11/09/2019 14:23	WG1377899
Benzene	18.5		0.0896	0.500	1	11/09/2019 14:23	WG1377899	
Bromobenzene	U		0.133	0.500	1	11/09/2019 14:23	WG1377899	
Bromodichloromethane	U		0.0800	0.500	1	11/09/2019 14:23	WG1377899	
Bromochloromethane	U		0.145	0.500	1	11/09/2019 14:23	WG1377899	
Bromoform	U		0.186	0.500	1	11/09/2019 14:23	WG1377899	
Bromomethane	U		0.157	2.50	1	11/09/2019 14:23	WG1377899	
n-Butylbenzene	U	UJ	JO J4	0.143	0.500	1	11/09/2019 14:23	WG1377899
sec-Butylbenzene	U		0.134	0.500	1	11/09/2019 14:23	WG1377899	
tert-Butylbenzene	U		0.183	0.500	1	11/09/2019 14:23	WG1377899	
Carbon disulfide	3.49		0.101	0.500	1	11/09/2019 14:23	WG1377899	
Carbon tetrachloride	U		0.159	0.500	1	11/09/2019 14:23	WG1377899	
Chlorobenzene	U		0.140	0.500	1	11/09/2019 14:23	WG1377899	
Chlorodibromomethane	U		0.128	0.500	1	11/09/2019 14:23	WG1377899	
Chloroethane	U		0.141	2.50	1	11/09/2019 14:23	WG1377899	
Chloroform	U		0.0860	0.500	1	11/09/2019 14:23	WG1377899	
Chloromethane	U		0.153	1.25	1	11/09/2019 14:23	WG1377899	
2-Chlorotoluene	U		0.111	0.500	1	11/09/2019 14:23	WG1377899	
4-Chlorotoluene	U		0.0972	0.500	1	11/09/2019 14:23	WG1377899	

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1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U	UJ JO	0.325	2.50	1	11/09/2019 14:23	WG1377899
1,2-Dibromoethane	U		0.193	0.500	1	11/09/2019 14:23	WG1377899
Dibromomethane	U		0.117	0.500	1	11/09/2019 14:23	WG1377899
1,2-Dichlorobenzene	U		0.101	0.500	1	11/09/2019 14:23	WG1377899
1,3-Dichlorobenzene	U		0.130	0.500	1	11/09/2019 14:23	WG1377899
1,4-Dichlorobenzene	U		0.121	0.500	1	11/09/2019 14:23	WG1377899
Dichlorodifluoromethane	U		0.127	2.50	1	11/09/2019 14:23	WG1377899
1,1-Dichloroethane	U		0.114	0.500	1	11/09/2019 14:23	WG1377899
1,2-Dichloroethane	U		0.108	0.500	1	11/09/2019 14:23	WG1377899
1,1-Dichloroethene	U		0.188	0.500	1	11/09/2019 14:23	WG1377899
cis-1,2-Dichloroethene	0.160	J	0.0933	0.500	1	11/09/2019 14:23	WG1377899
trans-1,2-Dichloroethene	U		0.152	0.500	1	11/09/2019 14:23	WG1377899
1,2-Dichloropropane	U		0.190	0.500	1	11/09/2019 14:23	WG1377899
1,1-Dichloropropene	U		0.128	0.500	1	11/09/2019 14:23	WG1377899
1,3-Dichloropropane	U		0.147	1.00	1	11/09/2019 14:23	WG1377899
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/09/2019 14:23	WG1377899
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/09/2019 14:23	WG1377899
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/09/2019 14:23	WG1377899
2,2-Dichloropropane	U		0.0929	0.500	1	11/09/2019 14:23	WG1377899
Di-isopropyl ether	0.327	J	0.0924	0.500	1	11/09/2019 14:23	WG1377899
Ethylbenzene	U		0.158	0.500	1	11/09/2019 14:23	WG1377899
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/09/2019 14:23	WG1377899
2-Hexanone	U		0.757	5.00	1	11/09/2019 14:23	WG1377899
n-Hexane	U		0.305	5.00	1	11/09/2019 14:23	WG1377899
Iodomethane	U		0.377	10.0	1	11/09/2019 14:23	WG1377899
Isopropylbenzene	U		0.126	0.500	1	11/09/2019 14:23	WG1377899
p-Isopropyltoluene	U		0.138	0.500	1	11/09/2019 14:23	WG1377899
2-Butanone (MEK)	1.50	J JJJO	1.28	5.00	1	11/09/2019 14:23	WG1377899
Methylene Chloride	U	UJ JO	1.07	2.50	1	11/09/2019 14:23	WG1377899
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/09/2019 14:23	WG1377899
Methyl tert-butyl ether	0.200	J	0.102	0.500	1	11/09/2019 14:23	WG1377899
Naphthalene	U		0.174	2.50	1	11/09/2019 14:23	WG1377899
n-Propylbenzene	U		0.162	0.500	1	11/09/2019 14:23	WG1377899
Styrene	U		0.117	0.500	1	11/09/2019 14:23	WG1377899
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/09/2019 14:23	WG1377899
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/09/2019 14:23	WG1377899
1,1,2-Trichlorotrifluoroethane	U	UJ JO J4	0.164	0.500	1	11/09/2019 14:23	WG1377899
Tetrachloroethene	U		0.199	0.500	1	11/09/2019 14:23	WG1377899
Toluene	1.43		0.412	0.500	1	11/09/2019 14:23	WG1377899
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/09/2019 14:23	WG1377899
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/09/2019 14:23	WG1377899
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/09/2019 14:23	WG1377899
1,1,2-Trichloroethane	U		0.186	0.500	1	11/09/2019 14:23	WG1377899
Trichloroethene	U		0.153	0.500	1	11/09/2019 14:23	WG1377899
Trichlorofluoromethane	U		0.130	2.50	1	11/09/2019 14:23	WG1377899
1,2,3-Trichloropropane	U		0.247	2.50	1	11/09/2019 14:23	WG1377899
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/09/2019 14:23	WG1377899
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/09/2019 14:23	WG1377899
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/09/2019 14:23	WG1377899
Vinyl acetate	U		0.645	5.00	1	11/09/2019 14:23	WG1377899
Vinyl chloride	189		0.118	0.500	1	11/09/2019 14:23	WG1377899
Xylenes, Total	U		0.316	1.50	1	11/09/2019 14:23	WG1377899
(S) Toluene-d8	94.4			80.0-120		11/09/2019 14:23	WG1377899
(S) 4-Bromofluorobenzene	102			77.0-126		11/09/2019 14:23	WG1377899
(S) 1,2-Dichloroethane-d4	116			70.0-130		11/09/2019 14:23	WG1377899

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/19/19



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	276000		2710	20000	1	11/07/2019 03:03	WG1376333

Sample Narrative:

L1156109-02 WG1376333: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	25500		51.9	1000	1	11/01/2019 18:58	WG1373549
Nitrate	U		22.7	100	1	11/01/2019 18:58	WG1373549
Sulfate	18200		77.4	5000	1	11/01/2019 18:58	WG1373549

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	6500		102	1000	1	11/06/2019 00:43	WG1375433

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	3360		15.0	100	1	11/07/2019 14:31	WG1373704
Manganese	307		0.250	5.00	1	11/07/2019 14:31	WG1373704

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	8040		2.87	6.78	10	11/06/2019 14:48	WG1375795
Ethane	5.07		0.296	1.29	1	11/05/2019 15:56	WG1375047
Ethene	U		0.422	1.27	1	11/05/2019 15:56	WG1375047

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch	
Acetone	3.11	J	J JO J4	1.05	25.0	1	11/09/2019 14:43	WG1377899
Acrylonitrile	U		J4	0.873	5.00	1	11/09/2019 14:43	WG1377899
Benzene	U			0.0896	0.500	1	11/09/2019 14:43	WG1377899
Bromobenzene	U			0.133	0.500	1	11/09/2019 14:43	WG1377899
Bromodichloromethane	U			0.0800	0.500	1	11/09/2019 14:43	WG1377899
Bromochloromethane	U			0.145	0.500	1	11/09/2019 14:43	WG1377899
Bromoform	U			0.186	0.500	1	11/09/2019 14:43	WG1377899
Bromomethane	U			0.157	2.50	1	11/09/2019 14:43	WG1377899
n-Butylbenzene	U	UJ		0.143	0.500	1	11/09/2019 14:43	WG1377899
sec-Butylbenzene	U			0.134	0.500	1	11/09/2019 14:43	WG1377899
tert-Butylbenzene	U			0.183	0.500	1	11/09/2019 14:43	WG1377899
Carbon disulfide	0.894			0.101	0.500	1	11/09/2019 14:43	WG1377899
Carbon tetrachloride	U			0.159	0.500	1	11/09/2019 14:43	WG1377899
Chlorobenzene	U			0.140	0.500	1	11/09/2019 14:43	WG1377899
Chlorodibromomethane	U			0.128	0.500	1	11/09/2019 14:43	WG1377899
Chloroethane	U			0.141	2.50	1	11/09/2019 14:43	WG1377899
Chloroform	U			0.0860	0.500	1	11/09/2019 14:43	WG1377899
Chloromethane	U			0.153	1.25	1	11/09/2019 14:43	WG1377899
2-Chlorotoluene	U			0.111	0.500	1	11/09/2019 14:43	WG1377899
4-Chlorotoluene	U			0.0972	0.500	1	11/09/2019 14:43	WG1377899

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- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U	UJ JO	0.325	2.50	1	11/09/2019 14:43	WG1377899
1,2-Dibromoethane	U		0.193	0.500	1	11/09/2019 14:43	WG1377899
Dibromomethane	U		0.117	0.500	1	11/09/2019 14:43	WG1377899
1,2-Dichlorobenzene	U		0.101	0.500	1	11/09/2019 14:43	WG1377899
1,3-Dichlorobenzene	U		0.130	0.500	1	11/09/2019 14:43	WG1377899
1,4-Dichlorobenzene	U		0.121	0.500	1	11/09/2019 14:43	WG1377899
Dichlorodifluoromethane	U		0.127	2.50	1	11/09/2019 14:43	WG1377899
1,1-Dichloroethane	U		0.114	0.500	1	11/09/2019 14:43	WG1377899
1,2-Dichloroethane	U		0.108	0.500	1	11/09/2019 14:43	WG1377899
1,1-Dichloroethene	U		0.188	0.500	1	11/09/2019 14:43	WG1377899
cis-1,2-Dichloroethene	U		0.0933	0.500	1	11/09/2019 14:43	WG1377899
trans-1,2-Dichloroethene	U		0.152	0.500	1	11/09/2019 14:43	WG1377899
1,2-Dichloropropane	U		0.190	0.500	1	11/09/2019 14:43	WG1377899
1,1-Dichloropropene	U		0.128	0.500	1	11/09/2019 14:43	WG1377899
1,3-Dichloropropane	U		0.147	1.00	1	11/09/2019 14:43	WG1377899
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/09/2019 14:43	WG1377899
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/09/2019 14:43	WG1377899
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/09/2019 14:43	WG1377899
2,2-Dichloropropane	U		0.0929	0.500	1	11/09/2019 14:43	WG1377899
Di-isopropyl ether	U		0.0924	0.500	1	11/09/2019 14:43	WG1377899
Ethylbenzene	U		0.158	0.500	1	11/09/2019 14:43	WG1377899
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/09/2019 14:43	WG1377899
2-Hexanone	U		0.757	5.00	1	11/09/2019 14:43	WG1377899
n-Hexane	U		0.305	5.00	1	11/09/2019 14:43	WG1377899
Iodomethane	U		0.377	10.0	1	11/09/2019 14:43	WG1377899
Isopropylbenzene	U		0.126	0.500	1	11/09/2019 14:43	WG1377899
p-Isopropyltoluene	U		0.138	0.500	1	11/09/2019 14:43	WG1377899
2-Butanone (MEK)	U	UJ JO	1.28	5.00	1	11/09/2019 14:43	WG1377899
Methylene Chloride	U	UJ JO	1.07	2.50	1	11/09/2019 14:43	WG1377899
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/09/2019 14:43	WG1377899
Methyl tert-butyl ether	U		0.102	0.500	1	11/09/2019 14:43	WG1377899
Naphthalene	U		0.174	2.50	1	11/09/2019 14:43	WG1377899
n-Propylbenzene	U		0.162	0.500	1	11/09/2019 14:43	WG1377899
Styrene	U		0.117	0.500	1	11/09/2019 14:43	WG1377899
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/09/2019 14:43	WG1377899
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/09/2019 14:43	WG1377899
1,1,2-Trichlorotrifluoroethane	U	UJ JO J4	0.164	0.500	1	11/09/2019 14:43	WG1377899
Tetrachloroethene	U		0.199	0.500	1	11/09/2019 14:43	WG1377899
Toluene	U		0.412	0.500	1	11/09/2019 14:43	WG1377899
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/09/2019 14:43	WG1377899
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/09/2019 14:43	WG1377899
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/09/2019 14:43	WG1377899
1,1,2-Trichloroethane	U		0.186	0.500	1	11/09/2019 14:43	WG1377899
Trichloroethene	U		0.153	0.500	1	11/09/2019 14:43	WG1377899
Trichlorofluoromethane	U		0.130	2.50	1	11/09/2019 14:43	WG1377899
1,2,3-Trichloropropane	U		0.247	2.50	1	11/09/2019 14:43	WG1377899
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/09/2019 14:43	WG1377899
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/09/2019 14:43	WG1377899
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/09/2019 14:43	WG1377899
Vinyl acetate	U		0.645	5.00	1	11/09/2019 14:43	WG1377899
Vinyl chloride	U		0.118	0.500	1	11/09/2019 14:43	WG1377899
Xylenes, Total	U		0.316	1.50	1	11/09/2019 14:43	WG1377899
(S) Toluene-d8	91.8			80.0-120		11/09/2019 14:43	WG1377899
(S) 4-Bromofluorobenzene	100			77.0-126		11/09/2019 14:43	WG1377899
(S) 1,2-Dichloroethane-d4	118			70.0-130		11/09/2019 14:43	WG1377899

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

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Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	7650		2.87	6.78	10	11/06/2019 14:52	WG1375795
Ethane	U		0.296	1.29	1	11/05/2019 16:01	WG1375047
Ethene	U		0.422	1.27	1	11/05/2019 16:01	WG1375047

1 Cp

2 Tc

3 Ss

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
	ug/l		ug/l	ug/l		date / time		
Acetone	3.74	J	J JO J4	1.05	25.0	1	11/09/2019 15:04	WG1377899
Acrylonitrile	U		J4	0.873	5.00	1	11/09/2019 15:04	WG1377899
Benzene	U			0.0896	0.500	1	11/09/2019 15:04	WG1377899
Bromobenzene	U			0.133	0.500	1	11/09/2019 15:04	WG1377899
Bromodichloromethane	U			0.0800	0.500	1	11/09/2019 15:04	WG1377899
Bromochloromethane	U			0.145	0.500	1	11/09/2019 15:04	WG1377899
Bromoform	U			0.186	0.500	1	11/09/2019 15:04	WG1377899
Bromomethane	U			0.157	2.50	1	11/09/2019 15:04	WG1377899
n-Butylbenzene	U	UJ	JO J4	0.143	0.500	1	11/09/2019 15:04	WG1377899
sec-Butylbenzene	U			0.134	0.500	1	11/09/2019 15:04	WG1377899
tert-Butylbenzene	U			0.183	0.500	1	11/09/2019 15:04	WG1377899
Carbon disulfide	U			0.101	0.500	1	11/09/2019 15:04	WG1377899
Carbon tetrachloride	U			0.159	0.500	1	11/09/2019 15:04	WG1377899
Chlorobenzene	U			0.140	0.500	1	11/09/2019 15:04	WG1377899
Chlorodibromomethane	U			0.128	0.500	1	11/09/2019 15:04	WG1377899
Chloroethane	U			0.141	2.50	1	11/09/2019 15:04	WG1377899
Chloroform	U			0.0860	0.500	1	11/09/2019 15:04	WG1377899
Chloromethane	U			0.153	1.25	1	11/09/2019 15:04	WG1377899
2-Chlorotoluene	U			0.111	0.500	1	11/09/2019 15:04	WG1377899
4-Chlorotoluene	U			0.0972	0.500	1	11/09/2019 15:04	WG1377899
1,2-Dibromo-3-Chloropropane	U	UJ	JO	0.325	2.50	1	11/09/2019 15:04	WG1377899
1,2-Dibromoethane	U			0.193	0.500	1	11/09/2019 15:04	WG1377899
Dibromomethane	U			0.117	0.500	1	11/09/2019 15:04	WG1377899
1,2-Dichlorobenzene	U			0.101	0.500	1	11/09/2019 15:04	WG1377899
1,3-Dichlorobenzene	U			0.130	0.500	1	11/09/2019 15:04	WG1377899
1,4-Dichlorobenzene	U			0.121	0.500	1	11/09/2019 15:04	WG1377899
Dichlorodifluoromethane	U			0.127	2.50	1	11/09/2019 15:04	WG1377899
1,1-Dichloroethane	U			0.114	0.500	1	11/09/2019 15:04	WG1377899
1,2-Dichloroethane	U			0.108	0.500	1	11/09/2019 15:04	WG1377899
1,1-Dichloroethene	U			0.188	0.500	1	11/09/2019 15:04	WG1377899
cis-1,2-Dichloroethene	U			0.0933	0.500	1	11/09/2019 15:04	WG1377899
trans-1,2-Dichloroethene	U			0.152	0.500	1	11/09/2019 15:04	WG1377899
1,2-Dichloropropane	U			0.190	0.500	1	11/09/2019 15:04	WG1377899
1,1-Dichloropropene	U			0.128	0.500	1	11/09/2019 15:04	WG1377899
1,3-Dichloropropane	U			0.147	1.00	1	11/09/2019 15:04	WG1377899
cis-1,3-Dichloropropene	U			0.0976	0.500	1	11/09/2019 15:04	WG1377899
trans-1,3-Dichloropropene	U			0.222	0.500	1	11/09/2019 15:04	WG1377899
trans-1,4-Dichloro-2-butene	U			0.257	5.00	1	11/09/2019 15:04	WG1377899
2,2-Dichloropropane	U			0.0929	0.500	1	11/09/2019 15:04	WG1377899
Di-isopropyl ether	U			0.0924	0.500	1	11/09/2019 15:04	WG1377899
Ethylbenzene	U			0.158	0.500	1	11/09/2019 15:04	WG1377899
Hexachloro-1,3-butadiene	U			0.157	1.00	1	11/09/2019 15:04	WG1377899
2-Hexanone	U			0.757	5.00	1	11/09/2019 15:04	WG1377899
n-Hexane	U			0.305	5.00	1	11/09/2019 15:04	WG1377899
Iodomethane	U			0.377	10.0	1	11/09/2019 15:04	WG1377899
Isopropylbenzene	U			0.126	0.500	1	11/09/2019 15:04	WG1377899
p-Isopropyltoluene	U			0.138	0.500	1	11/09/2019 15:04	WG1377899
2-Butanone (MEK)	U			1.28	5.00	1	11/09/2019 15:04	WG1377899

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methylene Chloride	U	UJ JO	1.07	2.50	1	11/09/2019 15:04	WG1377899
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/09/2019 15:04	WG1377899
Methyl tert-butyl ether	U		0.102	0.500	1	11/09/2019 15:04	WG1377899
Naphthalene	U		0.174	2.50	1	11/09/2019 15:04	WG1377899
n-Propylbenzene	U		0.162	0.500	1	11/09/2019 15:04	WG1377899
Styrene	U		0.117	0.500	1	11/09/2019 15:04	WG1377899
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/09/2019 15:04	WG1377899
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/09/2019 15:04	WG1377899
1,1,2-Trichlorotrifluoroethane	U	UJ JO J4	0.164	0.500	1	11/09/2019 15:04	WG1377899
Tetrachloroethene	U		0.199	0.500	1	11/09/2019 15:04	WG1377899
Toluene	U		0.412	0.500	1	11/09/2019 15:04	WG1377899
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/09/2019 15:04	WG1377899
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/09/2019 15:04	WG1377899
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/09/2019 15:04	WG1377899
1,1,2-Trichloroethane	U		0.186	0.500	1	11/09/2019 15:04	WG1377899
Trichloroethene	U		0.153	0.500	1	11/09/2019 15:04	WG1377899
Trichlorofluoromethane	U		0.130	2.50	1	11/09/2019 15:04	WG1377899
1,2,3-Trichloropropane	U		0.247	2.50	1	11/09/2019 15:04	WG1377899
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/09/2019 15:04	WG1377899
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/09/2019 15:04	WG1377899
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/09/2019 15:04	WG1377899
Vinyl acetate	U		0.645	5.00	1	11/09/2019 15:04	WG1377899
Vinyl chloride	U		0.118	0.500	1	11/09/2019 15:04	WG1377899
Xylenes, Total	U		0.316	1.50	1	11/09/2019 15:04	WG1377899
(S) Toluene-d8	94.6			80.0-120		11/09/2019 15:04	WG1377899
(S) 4-Bromofluorobenzene	102			77.0-126		11/09/2019 15:04	WG1377899
(S) 1,2-Dichloroethane-d4	117			70.0-130		11/09/2019 15:04	WG1377899

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

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Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	405000		2710	20000	1	11/07/2019 17:54	WG1376629

Sample Narrative:

L1156445-01 WG1376629: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	68400		51.9	1000	1	11/02/2019 12:20	WG1373953
Nitrate	U		22.7	100	1	11/02/2019 12:20	WG1373953
Sulfate	28000		77.4	5000	1	11/02/2019 12:20	WG1373953

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	4340		102	1000	1	11/06/2019 04:59	WG1375433

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	3570		15.0	100	1	11/06/2019 16:20	WG1375892
Manganese	5180		0.250	5.00	1	11/06/2019 16:20	WG1375892

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	1490		0.287	0.678	1	11/05/2019 16:34	WG1375047
Ethane	U		0.296	1.29	1	11/05/2019 16:34	WG1375047
Ethene	U		0.422	1.27	1	11/05/2019 16:34	WG1375047

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.15	J	1.05	25.0	1	11/11/2019 00:18	WG1378314
Acrylonitrile	U		0.873	5.00	1	11/11/2019 00:18	WG1378314
Benzene	U		0.0896	0.500	1	11/11/2019 00:18	WG1378314
Bromobenzene	U	UJ JO	0.133	0.500	1	11/11/2019 00:18	WG1378314
Bromodichloromethane	U		0.0800	0.500	1	11/11/2019 00:18	WG1378314
Bromochloromethane	U		0.145	0.500	1	11/11/2019 00:18	WG1378314
Bromoform	U		0.186	0.500	1	11/11/2019 00:18	WG1378314
Bromomethane	U		0.157	2.50	1	11/11/2019 00:18	WG1378314
n-Butylbenzene	U	UJ JO	0.143	0.500	1	11/11/2019 00:18	WG1378314
sec-Butylbenzene	U		0.134	0.500	1	11/11/2019 00:18	WG1378314
tert-Butylbenzene	U		0.183	0.500	1	11/11/2019 00:18	WG1378314
Carbon disulfide	U		0.101	0.500	1	11/11/2019 00:18	WG1378314
Carbon tetrachloride	U	J4	0.159	0.500	1	11/11/2019 00:18	WG1378314
Chlorobenzene	U		0.140	0.500	1	11/11/2019 00:18	WG1378314
Chlorodibromomethane	U		0.128	0.500	1	11/11/2019 00:18	WG1378314
Chloroethane	U		0.141	2.50	1	11/11/2019 00:18	WG1378314
Chloroform	U		0.0860	0.500	1	11/11/2019 00:18	WG1378314
Chloromethane	U		0.153	1.25	1	11/11/2019 00:18	WG1378314
2-Chlorotoluene	U		0.111	0.500	1	11/11/2019 00:18	WG1378314
4-Chlorotoluene	U		0.0972	0.500	1	11/11/2019 00:18	WG1378314

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1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/11/2019 00:18	WG1378314
1,2-Dibromoethane	U		0.193	0.500	1	11/11/2019 00:18	WG1378314
Dibromomethane	U		0.117	0.500	1	11/11/2019 00:18	WG1378314
1,2-Dichlorobenzene	U		0.101	0.500	1	11/11/2019 00:18	WG1378314
1,3-Dichlorobenzene	U		0.130	0.500	1	11/11/2019 00:18	WG1378314
1,4-Dichlorobenzene	U		0.121	0.500	1	11/11/2019 00:18	WG1378314
Dichlorodifluoromethane	U		0.127	2.50	1	11/11/2019 00:18	WG1378314
1,1-Dichloroethane	U		0.114	0.500	1	11/11/2019 00:18	WG1378314
1,2-Dichloroethane	U		0.108	0.500	1	11/11/2019 00:18	WG1378314
1,1-Dichloroethene	U		0.188	0.500	1	11/11/2019 00:18	WG1378314
cis-1,2-Dichloroethene	U		0.0933	0.500	1	11/11/2019 00:18	WG1378314
trans-1,2-Dichloroethene	U		0.152	0.500	1	11/11/2019 00:18	WG1378314
1,2-Dichloropropane	U		0.190	0.500	1	11/11/2019 00:18	WG1378314
1,1-Dichloropropene	U		0.128	0.500	1	11/11/2019 00:18	WG1378314
1,3-Dichloropropane	U		0.147	1.00	1	11/11/2019 00:18	WG1378314
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/11/2019 00:18	WG1378314
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/11/2019 00:18	WG1378314
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	11/11/2019 00:18	WG1378314
2,2-Dichloropropane	U		0.0929	0.500	1	11/11/2019 00:18	WG1378314
Di-isopropyl ether	U		0.0924	0.500	1	11/11/2019 00:18	WG1378314
Ethylbenzene	U		0.158	0.500	1	11/11/2019 00:18	WG1378314
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/11/2019 00:18	WG1378314
2-Hexanone	U		0.757	5.00	1	11/11/2019 00:18	WG1378314
n-Hexane	U		0.305	5.00	1	11/11/2019 00:18	WG1378314
Iodomethane	U		0.377	10.0	1	11/11/2019 00:18	WG1378314
Isopropylbenzene	U		0.126	0.500	1	11/11/2019 00:18	WG1378314
p-Isopropyltoluene	U		0.138	0.500	1	11/11/2019 00:18	WG1378314
2-Butanone (MEK)	U		1.28	5.00	1	11/11/2019 00:18	WG1378314
Methylene Chloride	U		1.07	2.50	1	11/11/2019 00:18	WG1378314
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/11/2019 00:18	WG1378314
Methyl tert-butyl ether	U		0.102	0.500	1	11/11/2019 00:18	WG1378314
Naphthalene	U	UJ JO	0.174	2.50	1	11/11/2019 00:18	WG1378314
n-Propylbenzene	U	UJ JO	0.162	0.500	1	11/11/2019 00:18	WG1378314
Styrene	U		0.117	0.500	1	11/11/2019 00:18	WG1378314
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/11/2019 00:18	WG1378314
1,1,2,2-Tetrachloroethane	U	UJ JO	0.130	0.500	1	11/11/2019 00:18	WG1378314
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/11/2019 00:18	WG1378314
Tetrachloroethene	U		0.199	0.500	1	11/11/2019 00:18	WG1378314
Toluene	U		0.412	0.500	1	11/11/2019 00:18	WG1378314
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/11/2019 00:18	WG1378314
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/11/2019 00:18	WG1378314
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/11/2019 00:18	WG1378314
1,1,2-Trichloroethane	U		0.186	0.500	1	11/11/2019 00:18	WG1378314
Trichloroethene	U	J4 .	0.153	0.500	1	11/11/2019 00:18	WG1378314
Trichlorofluoromethane	U		0.130	2.50	1	11/11/2019 00:18	WG1378314
1,2,3-Trichloropropane	U		0.247	2.50	1	11/11/2019 00:18	WG1378314
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/11/2019 00:18	WG1378314
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/11/2019 00:18	WG1378314
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/11/2019 00:18	WG1378314
Vinyl acetate	U	UJ JO	0.645	5.00	1	11/11/2019 00:18	WG1378314
Vinyl chloride	U		0.118	0.500	1	11/11/2019 00:18	WG1378314
Xylenes, Total	U		0.316	1.50	1	11/11/2019 00:18	WG1378314
(S) Toluene-d8	107			80.0-120		11/11/2019 00:18	WG1378314
(S) 4-Bromofluorobenzene	111			77.0-126		11/11/2019 00:18	WG1378314
(S) 1,2-Dichloroethane-d4	114			70.0-130		11/11/2019 00:18	WG1378314

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

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Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	408000		2710	20000	1	11/14/2019 02:40	WG1379400

Sample Narrative:

L1158143-01 WG1379400: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	24300		51.9	1000	1	11/08/2019 01:15	WG1376795
Nitrate	33.1	U B J	22.7	100	1	11/08/2019 01:15	WG1376795
Sulfate	37000		77.4	5000	1	11/08/2019 01:15	WG1376795

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	3200		102	1000	1	11/10/2019 05:44	WG1378047

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	400		15.0	100	1	11/10/2019 22:05	WG1377945
Manganese	2670		0.250	5.00	1	11/10/2019 22:05	WG1377945

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	U		0.287	0.678	1	11/11/2019 14:38	WG1378445
Ethane	U		0.296	1.29	1	11/11/2019 14:38	WG1378445
Ethene	U		0.422	1.27	1	11/11/2019 14:38	WG1378445

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.32	U B J	1.05	25.0	1	11/16/2019 01:30	WG1381516
Acrylonitrile	U		0.873	5.00	1	11/16/2019 01:30	WG1381516
Benzene	U		0.0896	0.500	1	11/16/2019 01:30	WG1381516
Bromobenzene	U		0.133	0.500	1	11/16/2019 01:30	WG1381516
Bromodichloromethane	U		0.0800	0.500	1	11/16/2019 01:30	WG1381516
Bromochloromethane	U		0.145	0.500	1	11/16/2019 01:30	WG1381516
Bromoform	U		0.186	0.500	1	11/16/2019 01:30	WG1381516
Bromomethane	U		0.157	2.50	1	11/19/2019 15:21	WG1382748
n-Butylbenzene	U		0.143	0.500	1	11/16/2019 01:30	WG1381516
sec-Butylbenzene	U		0.134	0.500	1	11/16/2019 01:30	WG1381516
tert-Butylbenzene	U		0.183	0.500	1	11/16/2019 01:30	WG1381516
Carbon disulfide	0.990		0.101	0.500	1	11/16/2019 01:30	WG1381516
Carbon tetrachloride	U		0.159	0.500	1	11/16/2019 01:30	WG1381516
Chlorobenzene	U		0.140	0.500	1	11/16/2019 01:30	WG1381516
Chlorodibromomethane	U		0.128	0.500	1	11/16/2019 01:30	WG1381516
Chloroethane	U		0.141	2.50	1	11/16/2019 01:30	WG1381516
Chloroform	U		0.0860	0.500	1	11/16/2019 01:30	WG1381516
Chloromethane	U		0.153	1.25	1	11/16/2019 01:30	WG1381516
2-Chlorotoluene	U		0.111	0.500	1	11/16/2019 01:30	WG1381516
4-Chlorotoluene	U		0.0972	0.500	1	11/16/2019 01:30	WG1381516

JC 12/19/19

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/16/2019 01:30	WG1381516
1,2-Dibromoethane	U		0.193	0.500	1	11/16/2019 01:30	WG1381516
Dibromomethane	U		0.117	0.500	1	11/16/2019 01:30	WG1381516
1,2-Dichlorobenzene	U		0.101	0.500	1	11/16/2019 01:30	WG1381516
1,3-Dichlorobenzene	U		0.130	0.500	1	11/16/2019 01:30	WG1381516
1,4-Dichlorobenzene	U		0.121	0.500	1	11/16/2019 01:30	WG1381516
Dichlorodifluoromethane	U		0.127	2.50	1	11/16/2019 01:30	WG1381516
1,1-Dichloroethane	U		0.114	0.500	1	11/16/2019 01:30	WG1381516
1,2-Dichloroethane	U		0.108	0.500	1	11/16/2019 01:30	WG1381516
1,1-Dichloroethene	U		0.188	0.500	1	11/16/2019 01:30	WG1381516
cis-1,2-Dichloroethene	1.27		0.0933	0.500	1	11/19/2019 15:21	WG1382748
trans-1,2-Dichloroethene	U		0.152	0.500	1	11/19/2019 15:21	WG1382748
1,2-Dichloropropane	U		0.190	0.500	1	11/16/2019 01:30	WG1381516
1,1-Dichloropropene	U		0.128	0.500	1	11/16/2019 01:30	WG1381516
1,3-Dichloropropane	U		0.147	1.00	1	11/16/2019 01:30	WG1381516
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/16/2019 01:30	WG1381516
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/16/2019 01:30	WG1381516
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	11/16/2019 01:30	WG1381516
2,2-Dichloropropane	U		0.0929	0.500	1	11/16/2019 01:30	WG1381516
Di-isopropyl ether	U		0.0924	0.500	1	11/16/2019 01:30	WG1381516
Ethylbenzene	U		0.158	0.500	1	11/16/2019 01:30	WG1381516
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/16/2019 01:30	WG1381516
2-Hexanone	U		0.757	5.00	1	11/16/2019 01:30	WG1381516
n-Hexane	U		0.305	5.00	1	11/16/2019 01:30	WG1381516
Iodomethane	U	UJ JO	0.377	10.0	1	11/16/2019 01:30	WG1381516
Isopropylbenzene	U		0.126	0.500	1	11/16/2019 01:30	WG1381516
p-Isopropyltoluene	U		0.138	0.500	1	11/16/2019 01:30	WG1381516
2-Butanone (MEK)	U		1.28	5.00	1	11/16/2019 01:30	WG1381516
Methylene Chloride	U		1.07	2.50	1	11/16/2019 01:30	WG1381516
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/16/2019 01:30	WG1381516
Methyl tert-butyl ether	U		0.102	0.500	1	11/16/2019 01:30	WG1381516
Naphthalene	U		0.174	2.50	1	11/16/2019 01:30	WG1381516
n-Propylbenzene	U		0.162	0.500	1	11/16/2019 01:30	WG1381516
Styrene	U		0.117	0.500	1	11/16/2019 01:30	WG1381516
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/16/2019 01:30	WG1381516
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/16/2019 01:30	WG1381516
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/16/2019 01:30	WG1381516
Tetrachloroethene	U		0.199	0.500	1	11/19/2019 15:21	WG1382748
Toluene	U		0.412	0.500	1	11/16/2019 01:30	WG1381516
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/16/2019 01:30	WG1381516
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/16/2019 01:30	WG1381516
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/16/2019 01:30	WG1381516
1,1,2-Trichloroethane	U		0.186	0.500	1	11/16/2019 01:30	WG1381516
Trichloroethene	U		0.153	0.500	1	11/19/2019 15:21	WG1382748
Trichlorofluoromethane	U		0.130	2.50	1	11/16/2019 01:30	WG1381516
1,2,3-Trichloropropane	U	UJ JO	0.247	2.50	1	11/19/2019 15:21	WG1382748
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/16/2019 01:30	WG1381516
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/16/2019 01:30	WG1381516
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/16/2019 01:30	WG1381516
Vinyl acetate	U		0.645	5.00	1	11/16/2019 01:30	WG1381516
Vinyl chloride	U		0.118	0.500	1	11/19/2019 15:21	WG1382748
Xylenes, Total	U		0.316	1.50	1	11/16/2019 01:30	WG1381516
(S) Toluene-d8	98.4			80.0-120		11/16/2019 01:30	WG1381516
(S) Toluene-d8	109			80.0-120		11/19/2019 15:21	WG1382748
(S) 4-Bromofluorobenzene	96.1			77.0-126		11/16/2019 01:30	WG1381516
(S) 4-Bromofluorobenzene	106			77.0-126		11/19/2019 15:21	WG1382748

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	98.4			70.0-130		11/16/2019 01:30	WG1381516
(S) 1,2-Dichloroethane-d4	115			70.0-130		11/19/2019 15:21	WG1382748

1 Cp

2 Tc

3 Ss

4 Cn

JC 12/19/19

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	176000		2710	20000	1	11/21/2019 14:32	WG1384195

Sample Narrative:

L1161106-01 WG1384195: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	8170		51.9	1000	1	11/15/2019 17:07	WG1381079
Nitrate	161	P1	22.7	100	1	11/15/2019 17:07	WG1381079
Sulfate	2570	J	77.4	5000	1	11/15/2019 17:07	WG1381079

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	4190		102	1000	1	11/19/2019 03:34	WG1382360

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	4010		15.0	100	1	11/16/2019 14:53	WG1381630
Manganese	329		0.250	5.00	1	11/16/2019 14:53	WG1381630

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	11/20/2019 08:45	WG1383395
(S) a,a,a-Trifluorotoluene(FID)	106			78.0-120		11/20/2019 08:45	WG1383395

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	224		0.287	0.678	1	11/20/2019 11:40	WG1383583
Ethane	U		0.296	1.29	1	11/20/2019 11:40	WG1383583
Ethene	U		0.422	1.27	1	11/20/2019 11:40	WG1383583

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	1.19	J	1.05	25.0	1	11/24/2019 11:49	WG1386329 JC 12/19/19
Acrylonitrile	U		0.873	5.00	1	11/23/2019 01:56	WG1385753
Benzene	U		0.0896	0.500	1	11/23/2019 01:56	WG1385753
Bromobenzene	U		0.133	0.500	1	11/23/2019 01:56	WG1385753
Bromodichloromethane	U		0.0800	0.500	1	11/23/2019 01:56	WG1385753
Bromochloromethane	U		0.145	0.500	1	11/23/2019 01:56	WG1385753
Bromoform	U		0.186	0.500	1	11/23/2019 01:56	WG1385753
Bromomethane	U	UJ JO	0.157	2.50	1	11/23/2019 01:56	WG1385753
n-Butylbenzene	U		0.143	0.500	1	11/23/2019 01:56	WG1385753
sec-Butylbenzene	U		0.134	0.500	1	11/23/2019 01:56	WG1385753
tert-Butylbenzene	U		0.183	0.500	1	11/23/2019 01:56	WG1385753
Carbon disulfide	U		0.101	0.500	1	11/23/2019 01:56	WG1385753
Carbon tetrachloride	U		0.159	0.500	1	11/23/2019 01:56	WG1385753

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	11/23/2019 01:56	WG1385753
Chlorodibromomethane	U		0.128	0.500	1	11/23/2019 01:56	WG1385753
Chloroethane	U		0.141	2.50	1	11/23/2019 01:56	WG1385753
Chloroform	U		0.0860	0.500	1	11/23/2019 01:56	WG1385753
Chloromethane	U		0.153	1.25	1	11/23/2019 01:56	WG1385753
2-Chlorotoluene	U		0.111	0.500	1	11/23/2019 01:56	WG1385753
4-Chlorotoluene	U		0.0972	0.500	1	11/23/2019 01:56	WG1385753
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/23/2019 01:56	WG1385753
1,2-Dibromoethane	U		0.193	0.500	1	11/23/2019 01:56	WG1385753
Dibromomethane	U		0.117	0.500	1	11/23/2019 01:56	WG1385753
1,2-Dichlorobenzene	U		0.101	0.500	1	11/23/2019 01:56	WG1385753
1,3-Dichlorobenzene	U		0.130	0.500	1	11/23/2019 01:56	WG1385753
1,4-Dichlorobenzene	U		0.121	0.500	1	11/23/2019 01:56	WG1385753
Dichlorodifluoromethane	U		0.127	2.50	1	11/23/2019 01:56	WG1385753
1,1-Dichloroethane	U		0.114	0.500	1	11/23/2019 01:56	WG1385753
1,2-Dichloroethane	U		0.108	0.500	1	11/23/2019 01:56	WG1385753
1,1-Dichloroethene	U		0.188	0.500	1	11/23/2019 01:56	WG1385753
cis-1,2-Dichloroethene	U		0.0933	0.500	1	11/23/2019 01:56	WG1385753
trans-1,2-Dichloroethene	U		0.152	0.500	1	11/23/2019 01:56	WG1385753
1,2-Dichloropropane	U		0.190	0.500	1	11/23/2019 01:56	WG1385753
1,1-Dichloropropene	U		0.128	0.500	1	11/23/2019 01:56	WG1385753
1,3-Dichloropropane	U		0.147	1.00	1	11/23/2019 01:56	WG1385753
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/23/2019 01:56	WG1385753
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/23/2019 01:56	WG1385753
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	11/23/2019 01:56	WG1385753
2,2-Dichloropropane	U		0.0929	0.500	1	11/23/2019 01:56	WG1385753
Di-isopropyl ether	U		0.0924	0.500	1	11/23/2019 01:56	WG1385753
Ethylbenzene	U		0.158	0.500	1	11/23/2019 01:56	WG1385753
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/23/2019 01:56	WG1385753
2-Hexanone	U		0.757	5.00	1	11/23/2019 01:56	WG1385753
n-Hexane	U		0.305	5.00	1	11/23/2019 01:56	WG1385753
Iodomethane	U	UJ JO	0.377	10.0	1	11/23/2019 01:56	WG1385753
Isopropylbenzene	U		0.126	0.500	1	11/23/2019 01:56	WG1385753
p-Isopropyltoluene	U		0.138	0.500	1	11/23/2019 01:56	WG1385753
2-Butanone (MEK)	U		1.28	5.00	1	11/23/2019 01:56	WG1385753
Methylene Chloride	U		1.07	2.50	1	11/23/2019 01:56	WG1385753
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/23/2019 01:56	WG1385753
Methyl tert-butyl ether	U		0.102	0.500	1	11/23/2019 01:56	WG1385753
Naphthalene	U		0.174	2.50	1	11/23/2019 01:56	WG1385753
n-Propylbenzene	U		0.162	0.500	1	11/23/2019 01:56	WG1385753
Styrene	U		0.117	0.500	1	11/23/2019 01:56	WG1385753
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/23/2019 01:56	WG1385753
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/23/2019 01:56	WG1385753
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/23/2019 01:56	WG1385753
Tetrachloroethene	U		0.199	0.500	1	11/23/2019 01:56	WG1385753
Toluene	U		0.412	0.500	1	11/23/2019 01:56	WG1385753
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/23/2019 01:56	WG1385753
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/23/2019 01:56	WG1385753
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/23/2019 01:56	WG1385753
1,1,2-Trichloroethane	U		0.186	0.500	1	11/23/2019 01:56	WG1385753
Trichloroethene	U		0.153	0.500	1	11/23/2019 01:56	WG1385753
Trichlorofluoromethane	U		0.130	2.50	1	11/23/2019 01:56	WG1385753
1,2,3-Trichloropropane	U		0.247	2.50	1	11/23/2019 01:56	WG1385753
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/23/2019 01:56	WG1385753
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/23/2019 01:56	WG1385753
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/23/2019 01:56	WG1385753

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	11/23/2019 01:56	WG1385753
Vinyl chloride	U		0.118	0.500	1	11/23/2019 01:56	WG1385753
Xylenes, Total	U		0.316	1.50	1	11/23/2019 01:56	WG1385753
(S) Toluene-d8	90.2			80.0-120		11/23/2019 01:56	WG1385753
(S) Toluene-d8	87.9			80.0-120		11/24/2019 11:49	WG1386329
(S) 4-Bromofluorobenzene	93.4			77.0-126		11/23/2019 01:56	WG1385753
(S) 4-Bromofluorobenzene	95.6			77.0-126		11/24/2019 11:49	WG1386329
(S) 1,2-Dichloroethane-d4	90.6			70.0-130		11/23/2019 01:56	WG1385753
(S) 1,2-Dichloroethane-d4	117			70.0-130		11/24/2019 11:49	WG1386329

JC 12/19/19

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

MEMORANDUM

TO: Project File **DATE:** January 6, 2020

FROM: Jessie Compeau

SUBJECT: Laboratory Data Validation Review

PROJECT: American Linen Data Validation

PROJECT #: 1413.001.05.601

TASK: EIM Data Validation Level EPA2A for October and November 2019 – Groundwater Samples

LAB: Pace Sample Delivery Groups (SDGs): L1156093, L1156483, L1157016, L1157450, L1158133, and L1159108

Twenty-six (26) groundwater samples (including two field duplicates), and six (6) trip blanks were collected as Round 4 Quarterly Monitoring sampling event at the Former American Linen Supply Site, in Seattle, Washington, between October 31 and November 8, 2019. The samples were shipped and delivered to Pace Lab Sciences (Pace) of Mount Juliet, TN for laboratory analysis. Selected samples were analyzed for the following:

- Volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method 8260C;
- VOCs by USEPA Method TO-15;
- Total petroleum hydrocarbons as gasoline (TPH-Gx) by NWTPH-Gx per analytical method stipulated by Washington State Department of Ecology;
- VOCs by EPA SOP RSK 175;
- Alkalinity by Method 2320 B-2011;
- Anions (Chloride, Nitrate, and Sulfate) by USEPA Method 9056A;
- Total Organic Carbon (TOC) by USEPA Method 9060A; and
- Metals (iron and manganese) by USEPA Method 6020B.

Samples were collected between October 31 and November 8, 2019 and results are reported in six Pace SDGs (L1156093, L1156483, L1157016, L1157450, L1158133, and L1159108). The quality assurance review of the sample data is summarized below.

DATA QUALIFICATIONS

Guidelines established by USEPA for a limited data validation review of analytical data along with PACE control limit criteria were used to validate the data. The comments presented in this memorandum refer to the laboratory's performance in meeting the quality control criteria outlined in the USEPA Contract Laboratory Program National Functional Guidelines for

Superfund Organic Methods Data Review (USEPA, 2017) and USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA, 2017). Following Guidelines, non-project-specific laboratory duplicates and matrix spike results were not evaluated as part of this data validation.

DATA VALIDATION

Completeness

All samples were collected and analyzed as requested with the following discussions:

- SDG L1156093, L1158133, and L1159108: Review of the chain of custody (COC) shows that the very lower portion (the area below the signatures and dates) of the COC are missing. No action is taken since signatures and dates are visible.
- SDG L1157016: The trip blank sample is identified as TP-110419 instead of TB-110419. No action is taken other than to note this.
- SDGs L1157450 and L1158133: All analytical parameters were requested for the trip blank. Trip blank samples were analyzed for gasoline and VOCs. No action is taken other than to note that this appears to be inadvertent.
- SDG L1159108: Samples submitted for gasoline analysis (analytical batch WG1380039) were transferred to Pace's laboratory in Sacramento, California. The associated trip blank (TB-110819) was not forwarded with the batch and received in a later shipment on November 14, 2019 and was received warm at 16.7°C. No action was taken other than to note this.

Sample Collection and Preservation

Samples were collected in laboratory-supplied sample containers preserved as appropriate for the individual analyses conducted. The samples were packed on ice in coolers and delivered by courier to the analytical laboratory. The laboratory reported that the coolers were received at a cooler temperature less than the recommended temperature preservation of 6°C with one exception as noted above (refer to discussion under SDG L1159108). Samples were received in good condition. No data were qualified based upon the sample collection and preservation information.

Holding Times

USEPA Method 8260C:

All samples were analyzed for VOCs within the EPA recommended holding time of fourteen days for preserved waters from the date of collection. All holding time criteria are met.

NWTPH-Gx Method:

All samples were analyzed within the WA State recommended holding time of fourteen days for preserved waters from the date of sample collection. All holding time criteria are met.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

All samples were analyzed within the WA State recommended holding time of fourteen days for preserved waters from the date of sample collection. All holding time criteria are met.

USEPA Method 6020B:

All samples were analyzed within the USEPA recommended holding time for iron and manganese of 180 days for preserved waters from the date of sample collection. All holding time criteria are met.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

All samples were analyzed within the USEPA recommended holding time for alkalinity (14 days), chloride (28 days), sulfate (28 days), and nitrate (48 hours), and TOC (28 days) for preserved waters from the date of sample collection. All holding time criteria are met.

Initial and Continuing Calibration

Calibration data for this project are not required for this deliverable however PACE's notes indicate the following:

- SDGs L1156093, L1156483, L1157016, L1157450, L1158133, and L1159108 - *USEPA Method 8260C*: Continuing calibration verification (CCV) issues were noted by Pace for several compounds associated with the trip blanks. The compounds are qualified by the laboratory "J0" to indicate that percent difference CCV is outside of laboratory acceptance criteria. No action is taken other than to note this.
- SDGs L1156093, L1156483, L1157016, L1157450, L1158133, and L1159108 - *USEPA Method 8260C*: Continuing calibration verification (CCV) issues were noted by Pace for multiple compounds associated with analytical batches in each SDG. These compounds are qualified by the laboratory "J0" to indicate that percent difference CCV is outside of laboratory acceptance criteria. **Associated sample results with laboratory qualified (J0) results are estimated and qualified (J/UJ).**

Method Blank Results

USEPA Method 8260C:

Laboratory method blanks were included with the analytical batches per method requirement. The target analytes were not detected in the method blanks at or above the reporting detection limits (RDLs) with the following exceptions:

- SDGs L1158133 - Analytical batch WG1381516: A low level of acetone is detected in the method blank. A low level of acetone is also detected in the trip blank. **Acetone detections in samples MW-920-110619, MW-180-110619, MW-177-110619, and MW-179-110619 are detected below the RDL are qualified (U) as non-detects due to trip, and/or method blank contamination.**
- SDG L1159108- Analytical batch WG1381516: A low level of acetone is detected in the method blank. **Acetone detections in samples MW-921-110819, MW-184-110819,**

MW-183-110819, MW-181-110819, and MW-182-110819 are detected below the RDL are qualified (U) as non-detects due to method blank contamination.

NWTPH-Gx Method:

Laboratory method blanks were included with the analytical batches per method requirement. The target analyte (gasoline) was not detected in the method blanks at or above the RDLs with the following exceptions:

- SDG L1157016 - Analytical batch WG1378064: Gasoline is detected at a low level (below the RDL) in the method blank and trip blank. **Gasoline detection in sample MW-168-110419 is detected below the RDL and qualified (U) as non-detect due to trip, and/or method blank contamination.**
- SDG L1157450 - Analytical batch WG1378064: Gasoline is detected at a low level (below the RDL) in the method blank and trip blank. **Gasoline detection in sample MW-169-110519 is detected below the RDL and qualified (U) as non-detect due to trip, and/or method blank contamination.**
- SDG L1158133 - Analytical batch WG1378064: Gasoline is detected at a low level (below the RDL) in the method blank and trip blank. No action is taken since all detections are greater than the RDL.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

Laboratory method blanks were included with the analytical batches per method requirement. The target analytes (dissolved gases) are not detected in the method blanks at or above the RDLs.

USEPA Method 6020B and General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

Laboratory method blanks were included with the analytical batches per method requirement. The target analytes were detected in the method blanks below the RDLs. Per Guidance, no action is taken for blank detections less than the RDL when associated sample detections are greater than the RDL. General chemistry and metal blank detections are shown below:

SDG	Batch	Method	Analyte	Method Blank Result	Qualifier	RDL	Units	Associated Result(s) Qualified
L1156093	WG1376333	SM2320B	Alkalinity as CaCO ₃ , Total	3390	J	20000	ug/L	NO
L1156093	WG1373918	9056A	Sulfate	87.3	J	5000	ug/L	NO
L1156093	WG1375433	6020B	TOC	345	J	1000	ug/L	NO
L1156483	WG1376785	SM2320B	Alkalinity as CaCO ₃ , Total	3380	J	20000	ug/L	NO
L1156483	WG1375433	9060A	TOC	345	J	1000	ug/L	NO
L1156483	WG1376183	9060A	TOC	421	J	1000	ug/L	NO
L1156483	WG1375892	9056A	Manganese	0.432	J	5.00	ug/L	NO
L1157016	WG1376842	SM2320B	Alkalinity as CaCO ₃ , Total	3760	J	20000	ug/L	NO
L1157016	WG1376183	9060A	TOC	421	J	1000	ug/L	NO
L1157016	WG1376376	9060A	TOC	480	J	1000	ug/L	NO
L1157016	WG1376376	9060A	TOC	396	J	1000	ug/L	NO
L1157016	WG1376698	6020B	Manganese	0.447	J	5.00	ug/L	NO
L1157450	WG1378816	SM2320B	Alkalinity as CaCO ₃ , Total	4200	J	20000	ug/L	NO

L1157450	WG1377120	9060A	TOC	400	J	1000	ug/L	NO
L1158133	WG1379400	SM2320B	Alkalinity as CaCO ₃ , Total	4200	J	20000	ug/L	NO
L1158133	WG1376738	9056A	Sulfate	128	J	5000	ug/L	NO
L1158133	WG1376795	9056A	Chloride	131	J	1000	ug/L	NO
L1158133	WG1376795	9060A	Nitrate	30.1	J	100	ug/L	NO
L1158133	WG1376795	SM2320B	Sulfate	221	J	5000	ug/L	NO
L1158133	WG1378047	9060A	TOC	296	J	1000	ug/L	NO
L1158133	WG1378255	9060A	TOC	359	J	1000	ug/L	NO
L1158133	WG1377945	6020B	Manganese	0.736	J	5.00	ug/L	NO
L1158133	WG1377945	6020B	Manganese	0.574	J	5.00	ug/L	NO
L1159108	WG1381472	SM2320B	Alkalinity as CaCO ₃ , Total	3170	J	20000	ug/L	NO
L1159108	WG1377890	9056A	Chloride	136	J	1000	ug/L	NO
L1159108	WG1377890	9056A	Sulfate	209	J	5000	ug/L	NO
L1159108	WG1379453	9060A	TOC	218	J	1000	ug/L	NO
L1159108	WG1379539	6020B	Manganese	0.466	J	5.00	ug/L	NO

Trip Blank Results

USEPA Method 8260C and NWTPH-Gx:

Eight trip blanks were collected and submitted for analysis. The target analytes were not detected in the trip blanks at or above the reporting detection limits (RDLs) with the following exceptions:

- SDG L1156483 - Analytical batch WG1377928: Low levels of acetone, cis-1,2-dichloroethene, and trichloroethene are detected (below the RDLs) in the trip blank. **Associated acetone detections, below the RDL, in samples are qualified as not detected (U). cis-1,2-Dichloroethene is detected below the RDL in sample MW-174-110119 and is qualified as not detected (U). Trichloroethene is detected below the RDL in sample MW-173-110119 and is qualified (U) due to trip blank contamination.**
- SDG L1157016: A low level of gasoline was detected in the trip blank. Associated sample MW-168-110419 gasoline result is qualified as not detected (U) due to blank contamination. Low levels of cis-1,2-dichloroethene and trichloroethene are detected, below the RDLs, in the trip blank. No action is taken for cis-1,2-dichloroethene as detections are far greater than the trip blank contamination. **Trichloroethene is detected below the RDL in samples MW-166-110419 and MW-167-110419. Trichloroethene results in samples MW-166-110419 and MW-167-110419 are qualified (U) due to trip blank contamination.**
- SDG L1157450: A low level of gasoline was detected in the trip and method blanks. **Associated sample MW-169-110519 gasoline result is qualified as not detected (U) due to blank contamination.** A low level of acetone is detected in the trip blank. Acetone is detected below the RDL in samples MW-172-110519, MW-169-110519, and MW-170-110519. **Acetone results for these samples are qualified (U) as non-detect due to trip blank contamination.**

- SDG L1158133: A low level of gasoline was detected in both trip and method blanks. No action is taken since associated gasoline detections are greater than the RDL. Low levels of acetone are detected in both trip and method blanks. Acetone was detected at low levels in associated samples MW-920-110619, MW-180-110619, MW-177-110619 and MW-179-110619. **Acetone results for these samples are qualified (U) as non-detect due to trip and method blank contamination.**

Field, Rinsate, or Equipment Blank Results

All Analytical Methods:

Equipment blanks were not collected.

Field Duplicate Analyses

Field duplicate pairs were submitted and analyzed. Field duplicate sample pairs are as follows:

- SDG L1158133: Samples MW-177-110619 and MW-920-110619; and
- SDG L1159108: Samples MW-181-110819 and MW-921-111819.

Target analyte results are comparable and within a relative percent difference (RPD) of 30% (for results < 5X RDL the absolute difference < 1X RDL) for the field duplicate pair with the following exceptions:

- SDG L1158133: Samples MW-177-110619 and MW-920-110619 – Carbon disulfide, chloroethane, cis-1,2-dichloroethene, tetrachloroethene, trichloroethene, and vinyl chloride results are not comparable with an RPD greater than 30% or for results < 5X RDL the absolute difference < 1X RDL. **Field duplicate results for these VOC compounds are estimated and qualified (J/UJ).**
- SDG L1159108: Samples MW-181-110819 and MW-921-111819 – Carbon disulfide results are not comparable at two different dilutions (1X and 5X) and RPDs greater than 30% or for results < 5X RDL the absolute difference < 1X RDL. **Field duplicate results for carbon disulfide are estimated and qualified (J/UJ).**

Laboratory Duplicate Analyses

USEPA Method 8260C:

Laboratory duplicate samples were not analyzed. Refer to laboratory control sample/sample duplicate (LCS/LCSD) or matrix spike/matrix spike duplicates (MS/MSDs) results for precision data.

NWTPH-Gx Method:

A laboratory duplicate sample was not analyzed. Refer to LCS/LCSD or MS/MSDs results for precision data.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

Laboratory duplicate sample analyses were performed on client and non-client samples within the analytical batches. The primary/duplicate RPDs for dissolved gas analyses are within the laboratory control limit of 20%.

USEPA Method 6020B:

A laboratory duplicate sample was not analyzed. Refer to laboratory control sample/sample duplicate (LCS/LCSD) or matrix spike/matrix spike duplicates (MS/MSDs) results for precision data.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

A laboratory duplicate sample was performed on client samples and on non-client samples. The primary/duplicate RPDs for general chemistry parameters are within the laboratory control limits with the following discussions:

- SDG L1156093 - Analytical batch WG1373918: The laboratory duplicate was performed on a non-client sample. Results for sulfate are qualified (E) by the laboratory to indicate that the analyte concentration exceeded the upper calibration range. No action was taken other than to note that the other laboratory duplicates and LCS percent recovery results are within criteria.
- SDG L1156093 - Analytical batch WG1375176: The laboratory duplicate was performed on a non-client sample. Results for chloride are qualified (E) by the laboratory to indicate that the analyte concentration exceeded the upper calibration range. No action was taken other than to note that the other laboratory duplicates and LCS percent recovery results are within criteria.
- SDG L1159108 - Analytical batch WG1377890: The laboratory duplicate was performed on a non-client sample. Results for chloride are qualified (E) by the laboratory to indicate that the analyte concentration exceeded the upper calibration range. No action was taken other than to note that the other laboratory duplicates and LCS percent recovery results are within criteria.

Surrogate Recoveries

USEPA Method 8260C:

The surrogate recovery results for the samples, laboratory control samples, trip blanks, and the method blanks are within the laboratory surrogate control limits for all the analyses.

NWTPH-Gx Method:

The surrogate recovery results for the samples, laboratory control samples, trip blanks, and the method blanks are within the laboratory surrogate control limits for all analyses.

Laboratory Control Samples

USEPA Method 8260C:

Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) or laboratory control sample (LCS) were analyzed by USEPA Method 8260C method. The LCS % Rs or

LCS/LCSD %Rs and RPDs for the all target compounds are within the laboratory control criteria for waters with the following discussions:

- SDG L1156093 - Analytical batch WG1377899. An LCSD was not analyzed. No action is taken on this basis. Refer to field duplicate results for precision data. LCS % recoveries for acetone and acrylonitrile are above control limit criteria. LCS recoveries for n-butylbenzene and 1,1,2-trichlorotrifluoroethane are below laboratory acceptance criteria. No action is taken for acetone and n-butylbenzene as results are already qualified due to calibration issues. No action is taken for acrylonitrile since it is not detected in the associated samples. **All associated results for 1,1,2-trichlorotrifluoroethane are estimated and qualified (J/UJ) due to low LCS recovery.**
- SDG L1156483 Analytical batch WG1377928. An LCSD was not analyzed. No action is taken on this basis. Refer to field duplicate results for precision data. LCS % recovery for dichlorodifluoromethane is above laboratory control limit criteria. No action is taken for 1,1,2-trichlorotrifluoroethane as it is not detected in the associated samples.
- SDG L1157016 - Analytical batches WG1378382, WG1378635, WG1379440 and WG1379454. An LCSD was not analyzed with these batches. Refer to field duplicate results for precision data.
- SDG L1157450 - Analytical batches WG1378382 and WG1378635. An LCSD was not analyzed. Refer to field duplicate data for precision data.

NWTPH-Gx Method:

The LCS or LCS/LCSD %Rs and RPDs for the target compound (gasoline) are within the laboratory control criteria for waters.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

The LCS/LCSD %Rs and RPDs for the target compound (dissolved gases) are within the laboratory control criteria for waters.

USEPA Method 6020B:

The LCS/LCSD %Rs and RPDs for the target compound (iron and manganese) are within the laboratory control criteria for waters.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

The LCS or LCS/LCSD %Rs and RPDs for general chemistry parameters are within the laboratory control criteria for waters.

Matrix Spike/Matrix Spike Duplicates

USEPA Method 8260C:

Matrix spike/matrix spike duplicate (MS/MSD) analyses were not performed. Refer to LCS/LCSD and field duplicate data for accuracy and precision data.

NWTPH-Gx Method:

MS/MSD analyses were performed on a non-client sample within the analytical batch. In cases where MS/MSD spike analyses are not performed refer to LCS/LCSD for accuracy and precision data. The MS/MSD %Rs and RPDs for all target compounds are within the laboratory control criteria for waters.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

MS/MSD analyses were not performed. Refer to LCS/LCSD for accuracy and precision data.

USEPA Method 6020B:

MS/MSD analyses were performed on client and non-client samples within the analytical batches. The MS/MSD % Rs and RPD were acceptable and within laboratory control limit criteria for water samples with the following exceptions:

- SDG L1156093 - Analytical batch WG1373704: MS/MSD were performed on client sample MW-185-103119. The sample amount for manganese is greater than four times the spike amount and MSD results are qualified (V) by the laboratory. Per Guidance, no action is necessary. LCS/LCSD results are within criteria.
- SDG L1157016 - Analytical batch WG1376698: MS/MSD were performed a non-client sample. The sample amount for manganese is greater than four times the spike amount and MSD results are qualified (V) by the laboratory. Per Guidance, no action is necessary. LCS/LCSD results are within criteria.
- SDG L1159108 - Analytical batch WG1379539: MS/MSD were performed a non-client sample. The sample amount for manganese is greater than four times the spike amount and MSD results are qualified (V) by the laboratory. Per Guidance, no action is necessary. LCS/LCSD results are within criteria.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

MS/MSD analyses were performed on client and/or non-client samples within the analytical batches. In cases where MS/MSD spike analyses are not performed refer to LCS/LCSD or laboratory duplicate data for accuracy and precision data. The MS/MSD % Rs and RPDs are acceptable and within laboratory control limit criteria for water samples with the following exception:

- SDG L1156093 - Analytical batch WG1373431: The MS was performed on a client sample MW-186-103119. Results for chloride are qualified (E) by the laboratory to indicate that the spiked analyte concentration exceeded the upper calibration range. No action was taken other than to note that the laboratory duplicates and LCS percent recovery results are within criteria.
- SDG L1156093 - Analytical batch WG1373918: The MS/MSD was performed on a non-client sample. Results for sulfate are qualified (E) by the laboratory to indicate that the spiked analyte concentration exceeded the upper calibration range. No action was taken other than to note that the laboratory duplicates and LCS percent recovery results are within criteria.

- SDG L1156483 - Analytical batch WG1373953: The MS/MSD was performed on a non-client sample. Results for chloride are qualified (E) by the laboratory to indicate that the spiked analyte concentration exceeded the upper calibration range. No action was taken other than to note that the laboratory duplicates and LCS percent recovery results are within criteria.
- SDG L1157016 - Analytical batch WG1375176: The MS/MSD was performed on a non-client sample. Results for chloride are qualified (EV) by the laboratory to indicate that the spiked analyte concentration exceeded the upper calibration range and that the sample amount was far greater than the spiked amount. No action was taken other than to note that one of the laboratory duplicates and LCS percent recovery results are within criteria.
- SDG L1159108 - Analytical batch WG1377890: The MS/MSD was performed on a non-client sample. Results for chloride are qualified (EV) by the laboratory to indicate that the spiked analyte concentration exceeded the upper calibration range and that the sample amount was far greater than the spiked amount. No action was taken other than to note that one of the laboratory duplicates and LCS percent recovery results are within criteria.

Other Quality Control Issues

No laboratory quality control issues were identified in the laboratory report with the following discussions:

- Multiple SDGs: Selected sample narratives for alkalinity results indicate that several sample containers had some headspace and exposure to air may have impacted the reported results. No action was taken other than to note this.
- Electronic data deliverables (EDDs) for these SDGs were provided by the laboratory and data validator qualifiers were entered. In some cases, different chemical synonyms are used between the EDD and the hardcopy however associated Chemical Abstracts Service (CAS) numbers are provided in the EDD to confirm chemical identifications.

Compound Identification and Quantitation Limits

Several chlorinated VOC compounds (including cis-1,2-dichloroethene, trans-1,2-dichloroethene, trichloroethene, and tetrachloroethene) elute within the GRO retention time range. Elevated chlorinated VOC compounds likely contribute to the GRO result and associated GRO results are likely biased high (J+). No action was taken for gasoline detections below the RDL since the results are estimated (J). Qualified samples are as follows:

Sample ID	Laboratory Identification	Result Parameter Name	Result Value (µg/L)	Qualified Result	Comments
MW-185-103119	L1156093-01	Gasoline Range Organics	446	J+	Elevated chlorinated VOCs within the GRO elution range
MW-165-110419	L1157016-01	Gasoline Range Organics	3940	J+	Elevated chlorinated VOCs within the GRO elution range

MW-166-110419	L1157016-02	Gasoline Range Organics	4360	J+	Elevated chlorinated VOCs within the GRO elution range
MW-172-110519	L1157450-01	Gasoline Range Organics	4960	J+	Elevated chlorinated VOCs within the GRO elution range
MW-171-110519	L1157450-02	Gasoline Range Organics	371	J+	Elevated chlorinated VOCs within the GRO elution range
MW-170-110519	L1157450-04	Gasoline Range Organics	22700	J+	Elevated chlorinated VOCs within the GRO elution range
MW-177-110619	L1158133-04	Gasoline Range Organics	122000	J+	Elevated chlorinated VOCs within the GRO elution range
MW-920-110619	L1158133-01	Gasoline Range Organics	127000	J+	Elevated chlorinated VOCs within the GRO elution range
MW-180-110619	L1158133-02	Gasoline Range Organics	220	J+	Elevated chlorinated VOCs within the GRO elution range
MW-178-110619	L1158133-03	Gasoline Range Organics	249	J+	Elevated chlorinated VOCs within the GRO elution range
MW-179-110619	L1158133-05	Gasoline Range Organics	2310	J+	Elevated chlorinated VOCs within the GRO elution range
MW-181-110819	L1159108-04	Gasoline Range Organics	23900	J+	Elevated chlorinated VOCs within the GRO elution range
MW-921-110819	L1159108-01	Gasoline Range Organics	23700	J+	Elevated chlorinated VOCs within the GRO elution range
MW-184-110819	L1159108-02	Gasoline Range Organics	2310	J+	Elevated chlorinated VOCs within the GRO elution range
MW-182-110819	L1159108-05	Gasoline Range Organics	14100	J+	Elevated chlorinated VOCs within the GRO elution range

Results of the analyses were reported based on laboratory RDLs for all compounds. RDLs for selected compounds are elevated due to method-required dilutions. No action is taken other than to note that Pace sample narrative notes indicate that VOC target compounds were too high to run at lower dilution for samples as follows:

- SDG L1157450: Sample MW-171-110519;
- SDG L1158133: Samples MW-180-110619, MW-177-110619 (and field duplicate MW-920-110619), MW-178-110619, MW-179-110619, and MW-107-072219;
- SDG L1158133: Sample MW-177-110619 (and field duplicate MW-920-110619) results for 1,1-dichloroethene are qualified (E) by the laboratory to indicate that these results exceed the upper limit of the calibration range. **Sample MW-177-110619 (and field duplicate MW-920-110619) results for 1,1-dichloroethene are estimated and qualified (J) because they exceed the upper limit of the calibration range.**; and
- SDG L1159108: Samples MW-181-110819 (and field duplicate MW-921-110819), MW-184-110819, and MW-182-110819.

Data Assessment

The laboratory data reported for this project were reviewed based on the criteria outlined in:

- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2017); and
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA, 2017).

Data qualifiers are assigned and laboratory report pages with qualifiers are attached. All data, including qualified data, are judged to be acceptable for their intended use.



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	731000		2710	20000	1	11/07/2019 02:33	WG1376333

Sample Narrative:

L1156093-01 WG1376333: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	116000		260	5000	5	11/01/2019 19:27	WG1373431
Nitrate	U		22.7	100	1	11/01/2019 18:48	WG1373431
Sulfate	38100		77.4	5000	1	11/02/2019 18:25	WG1373918

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	51400		102	1000	1	11/06/2019 09:22	WG1375433

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	9910		15.0	100	1	11/07/2019 13:21	WG1373704
Manganese	1630	V	0.250	5.00	1	11/07/2019 13:21	WG1373704

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	446	J+	31.6	100	1	11/06/2019 05:23	WG1375449
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120		11/06/2019 05:23	WG1375449

JC 1/6/20

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	10300		2.87	6.78	10	11/07/2019 11:18	WG1376536
Ethane	9.69		0.296	1.29	1	11/05/2019 15:15	WG1375047
Ethene	232		0.422	1.27	1	11/05/2019 15:15	WG1375047

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch	
Acetone	79.4	J	J0 J4	1.05	25.0	1	11/09/2019 13:23	WG1377899
Acrylonitrile	U		J4	0.873	5.00	1	11/09/2019 13:23	WG1377899
Benzene	0.140		J	0.0896	0.500	1	11/09/2019 13:23	WG1377899
Bromobenzene	U			0.133	0.500	1	11/09/2019 13:23	WG1377899
Bromodichloromethane	U			0.0800	0.500	1	11/09/2019 13:23	WG1377899
Bromochloromethane	U			0.145	0.500	1	11/09/2019 13:23	WG1377899
Bromoform	U			0.186	0.500	1	11/09/2019 13:23	WG1377899
Bromomethane	U			0.157	2.50	1	11/09/2019 13:23	WG1377899
n-Butylbenzene	U	UJ	J0 J4	0.143	0.500	1	11/09/2019 13:23	WG1377899
sec-Butylbenzene	U			0.134	0.500	1	11/09/2019 13:23	WG1377899
tert-Butylbenzene	U			0.183	0.500	1	11/09/2019 13:23	WG1377899
Carbon disulfide	U			0.101	0.500	1	11/09/2019 13:23	WG1377899
Carbon tetrachloride	U			0.159	0.500	1	11/09/2019 13:23	WG1377899

JC 1/3/2020

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Collected date/time: 10/31/19 11:00

L1156093

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/09/2019 13:23	WG1377899
Chlorodibromomethane	U		0.128	0.500	1	11/09/2019 13:23	WG1377899
Chloroethane	0.930	J	0.141	2.50	1	11/09/2019 13:23	WG1377899
Chloroform	0.504		0.0860	0.500	1	11/09/2019 13:23	WG1377899
Chloromethane	U		0.153	1.25	1	11/09/2019 13:23	WG1377899
2-Chlorotoluene	U		0.111	0.500	1	11/09/2019 13:23	WG1377899
4-Chlorotoluene	U		0.0972	0.500	1	11/09/2019 13:23	WG1377899
1,2-Dibromo-3-Chloropropane	U	UJ JO	0.325	2.50	1	11/09/2019 13:23	WG1377899
1,2-Dibromoethane	U		0.193	0.500	1	11/09/2019 13:23	WG1377899
Dibromomethane	U		0.117	0.500	1	11/09/2019 13:23	WG1377899
1,2-Dichlorobenzene	U		0.101	0.500	1	11/09/2019 13:23	WG1377899
1,3-Dichlorobenzene	U		0.130	0.500	1	11/09/2019 13:23	WG1377899
1,4-Dichlorobenzene	U		0.121	0.500	1	11/09/2019 13:23	WG1377899
Dichlorodifluoromethane	U		0.127	2.50	1	11/09/2019 13:23	WG1377899
1,1-Dichloroethane	U		0.114	0.500	1	11/09/2019 13:23	WG1377899
1,2-Dichloroethane	U		0.108	0.500	1	11/09/2019 13:23	WG1377899
1,1-Dichloroethene	0.897		0.188	0.500	1	11/09/2019 13:23	WG1377899
cis-1,2-Dichloroethene	547		1.87	10.0	20	11/11/2019 00:39	WG1378314
trans-1,2-Dichloroethene	5.47		0.152	0.500	1	11/09/2019 13:23	WG1377899
1,2-Dichloropropane	U		0.190	0.500	1	11/09/2019 13:23	WG1377899
1,1-Dichloropropene	U		0.128	0.500	1	11/09/2019 13:23	WG1377899
1,3-Dichloropropane	U		0.147	1.00	1	11/09/2019 13:23	WG1377899
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/09/2019 13:23	WG1377899
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/09/2019 13:23	WG1377899
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/09/2019 13:23	WG1377899
2,2-Dichloropropane	U		0.0929	0.500	1	11/09/2019 13:23	WG1377899
Di-isopropyl ether	U		0.0924	0.500	1	11/09/2019 13:23	WG1377899
Ethylbenzene	U		0.158	0.500	1	11/09/2019 13:23	WG1377899
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/09/2019 13:23	WG1377899
2-Hexanone	U		0.757	5.00	1	11/09/2019 13:23	WG1377899
n-Hexane	U		0.305	5.00	1	11/09/2019 13:23	WG1377899
Iodomethane	U		0.377	10.0	1	11/09/2019 13:23	WG1377899
Isopropylbenzene	U		0.126	0.500	1	11/09/2019 13:23	WG1377899
p-Isopropyltoluene	U		0.138	0.500	1	11/09/2019 13:23	WG1377899
2-Butanone (MEK)	16.0	J JO	1.28	5.00	1	11/09/2019 13:23	WG1377899
Methylene Chloride	U	UJ JO	1.07	2.50	1	11/09/2019 13:23	WG1377899
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/09/2019 13:23	WG1377899
Methyl tert-butyl ether	U		0.102	0.500	1	11/09/2019 13:23	WG1377899
Naphthalene	U		0.174	2.50	1	11/09/2019 13:23	WG1377899
n-Propylbenzene	U		0.162	0.500	1	11/09/2019 13:23	WG1377899
Styrene	U		0.117	0.500	1	11/09/2019 13:23	WG1377899
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/09/2019 13:23	WG1377899
1,1,2,2-Tetrachloroethane	U	UJ JO	0.130	0.500	1	11/09/2019 13:23	WG1377899
1,1,2-Trichlorotrifluoroethane	U	UJ J4	0.164	0.500	1	11/09/2019 13:23	WG1377899
Tetrachloroethene	2.57		0.199	0.500	1	11/09/2019 13:23	WG1377899
Toluene	U		0.412	0.500	1	11/09/2019 13:23	WG1377899
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/09/2019 13:23	WG1377899
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/09/2019 13:23	WG1377899
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/09/2019 13:23	WG1377899
1,1,2-Trichloroethane	U		0.186	0.500	1	11/09/2019 13:23	WG1377899
Trichloroethene	3.51		0.153	0.500	1	11/09/2019 13:23	WG1377899
Trichlorofluoromethane	U		0.130	2.50	1	11/09/2019 13:23	WG1377899
1,2,3-Trichloropropane	U		0.247	2.50	1	11/09/2019 13:23	WG1377899
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/09/2019 13:23	WG1377899
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/09/2019 13:23	WG1377899
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/09/2019 13:23	WG1377899

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 1/3/2020



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	11/09/2019 13:23	WG1377899
Vinyl chloride	179		0.118	0.500	1	11/09/2019 13:23	WG1377899
Xylenes, Total	U		0.316	1.50	1	11/09/2019 13:23	WG1377899
(S) Toluene-d8	95.7			80.0-120		11/09/2019 13:23	WG1377899
(S) Toluene-d8	110			80.0-120		11/11/2019 00:39	WG1378314
(S) 4-Bromofluorobenzene	105			77.0-126		11/09/2019 13:23	WG1377899
(S) 4-Bromofluorobenzene	108			77.0-126		11/11/2019 00:39	WG1378314
(S) 1,2-Dichloroethane-d4	118			70.0-130		11/09/2019 13:23	WG1377899
(S) 1,2-Dichloroethane-d4	115			70.0-130		11/11/2019 00:39	WG1378314

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 1/3/2020



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	320000		2710	20000	1	11/07/2019 02:41	WG1376333

Sample Narrative:

L1156093-02 WG1376333: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	62900		51.9	1000	1	11/01/2019 19:41	WG1373431
Nitrate	U		22.7	100	1	11/01/2019 19:41	WG1373431
Sulfate	31400		77.4	5000	1	11/02/2019 18:50	WG1373918

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	5290		102	1000	1	11/05/2019 22:13	WG1375433

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	501		15.0	100	1	11/07/2019 13:35	WG1373704
Manganese	280		0.250	5.00	1	11/07/2019 13:35	WG1373704

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	11/06/2019 05:47	WG1375449
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120		11/06/2019 05:47	WG1375449

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	1030		0.287	0.678	1	11/05/2019 15:18	WG1375047
Ethane	5.78		0.296	1.29	1	11/05/2019 15:18	WG1375047
Ethene	18.4		0.422	1.27	1	11/05/2019 15:18	WG1375047

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch	
Acetone	4.13	J	J JO J4	1.05	25.0	1	11/09/2019 13:43	WG1377899
Acrylonitrile	U		J4	0.873	5.00	1	11/09/2019 13:43	WG1377899
Benzene	U		0.0896	0.500	1	11/09/2019 13:43	WG1377899	
Bromobenzene	U		0.133	0.500	1	11/09/2019 13:43	WG1377899	
Bromodichloromethane	U		0.0800	0.500	1	11/09/2019 13:43	WG1377899	
Bromochloromethane	U		0.145	0.500	1	11/09/2019 13:43	WG1377899	
Bromoform	U		0.186	0.500	1	11/09/2019 13:43	WG1377899	
Bromomethane	U		0.157	2.50	1	11/09/2019 13:43	WG1377899	
n-Butylbenzene	U	UJ	JO J4	0.143	0.500	1	11/09/2019 13:43	WG1377899
sec-Butylbenzene	U		0.134	0.500	1	11/09/2019 13:43	WG1377899	
tert-Butylbenzene	U		0.183	0.500	1	11/09/2019 13:43	WG1377899	
Carbon disulfide	U		0.101	0.500	1	11/09/2019 13:43	WG1377899	
Carbon tetrachloride	U		0.159	0.500	1	11/09/2019 13:43	WG1377899	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 1/3/2020



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/09/2019 13:43	WG1377899
Chlorodibromomethane	U		0.128	0.500	1	11/09/2019 13:43	WG1377899
Chloroethane	U		0.141	2.50	1	11/09/2019 13:43	WG1377899
Chloroform	0.170	J	0.0860	0.500	1	11/09/2019 13:43	WG1377899
Chloromethane	U		0.153	1.25	1	11/09/2019 13:43	WG1377899
2-Chlorotoluene	U		0.111	0.500	1	11/09/2019 13:43	WG1377899
4-Chlorotoluene	U		0.0972	0.500	1	11/09/2019 13:43	WG1377899
1,2-Dibromo-3-Chloropropane	U	UJ JO	0.325	2.50	1	11/09/2019 13:43	WG1377899
1,2-Dibromoethane	U		0.193	0.500	1	11/09/2019 13:43	WG1377899
Dibromomethane	U		0.117	0.500	1	11/09/2019 13:43	WG1377899
1,2-Dichlorobenzene	U		0.101	0.500	1	11/09/2019 13:43	WG1377899
1,3-Dichlorobenzene	U		0.130	0.500	1	11/09/2019 13:43	WG1377899
1,4-Dichlorobenzene	U		0.121	0.500	1	11/09/2019 13:43	WG1377899
Dichlorodifluoromethane	U		0.127	2.50	1	11/09/2019 13:43	WG1377899
1,1-Dichloroethane	U		0.114	0.500	1	11/09/2019 13:43	WG1377899
1,2-Dichloroethane	U		0.108	0.500	1	11/09/2019 13:43	WG1377899
1,1-Dichloroethene	U		0.188	0.500	1	11/09/2019 13:43	WG1377899
cis-1,2-Dichloroethene	4.15		0.0933	0.500	1	11/10/2019 23:58	WG1378314
trans-1,2-Dichloroethene	U		0.152	0.500	1	11/09/2019 13:43	WG1377899
1,2-Dichloropropane	U		0.190	0.500	1	11/09/2019 13:43	WG1377899
1,1-Dichloropropene	U		0.128	0.500	1	11/09/2019 13:43	WG1377899
1,3-Dichloropropane	U		0.147	1.00	1	11/09/2019 13:43	WG1377899
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/09/2019 13:43	WG1377899
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/09/2019 13:43	WG1377899
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/09/2019 13:43	WG1377899
2,2-Dichloropropane	U		0.0929	0.500	1	11/09/2019 13:43	WG1377899
Di-isopropyl ether	U		0.0924	0.500	1	11/09/2019 13:43	WG1377899
Ethylbenzene	U		0.158	0.500	1	11/09/2019 13:43	WG1377899
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/09/2019 13:43	WG1377899
2-Hexanone	U		0.757	5.00	1	11/09/2019 13:43	WG1377899
n-Hexane	U		0.305	5.00	1	11/09/2019 13:43	WG1377899
Iodomethane	U		0.377	10.0	1	11/09/2019 13:43	WG1377899
Isopropylbenzene	U		0.126	0.500	1	11/09/2019 13:43	WG1377899
p-Isopropyltoluene	U		0.138	0.500	1	11/09/2019 13:43	WG1377899
2-Butanone (MEK)	U		1.28	5.00	1	11/09/2019 13:43	WG1377899
Methylene Chloride	U	UJ JO	1.07	2.50	1	11/09/2019 13:43	WG1377899
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/09/2019 13:43	WG1377899
Methyl tert-butyl ether	U		0.102	0.500	1	11/09/2019 13:43	WG1377899
Naphthalene	U		0.174	2.50	1	11/09/2019 13:43	WG1377899
n-Propylbenzene	U		0.162	0.500	1	11/09/2019 13:43	WG1377899
Styrene	U		0.117	0.500	1	11/09/2019 13:43	WG1377899
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/09/2019 13:43	WG1377899
1,1,2,2-Tetrachloroethane	U	UJ JO	0.130	0.500	1	11/09/2019 13:43	WG1377899
1,1,2-Trichlorotrifluoroethane	U	UJ J4	0.164	0.500	1	11/09/2019 13:43	WG1377899
Tetrachloroethene	0.199	J	0.199	0.500	1	11/09/2019 13:43	WG1377899
Toluene	U		0.412	0.500	1	11/09/2019 13:43	WG1377899
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/09/2019 13:43	WG1377899
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/09/2019 13:43	WG1377899
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/09/2019 13:43	WG1377899
1,1,2-Trichloroethane	U		0.186	0.500	1	11/09/2019 13:43	WG1377899
Trichloroethene	U		0.153	0.500	1	11/09/2019 13:43	WG1377899
Trichlorofluoromethane	U		0.130	2.50	1	11/09/2019 13:43	WG1377899
1,2,3-Trichloropropane	U		0.247	2.50	1	11/09/2019 13:43	WG1377899
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/09/2019 13:43	WG1377899
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/09/2019 13:43	WG1377899
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/09/2019 13:43	WG1377899

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 1/3/2020



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	11/09/2019 13:43	WG1377899
Vinyl chloride	23.4		0.118	0.500	1	11/09/2019 13:43	WG1377899
Xylenes, Total	U		0.316	1.50	1	11/09/2019 13:43	WG1377899
(S) Toluene-d8	95.1			80.0-120		11/09/2019 13:43	WG1377899
(S) Toluene-d8	109			80.0-120		11/10/2019 23:58	WG1378314
(S) 4-Bromofluorobenzene	101			77.0-126		11/09/2019 13:43	WG1377899
(S) 4-Bromofluorobenzene	112			77.0-126		11/10/2019 23:58	WG1378314
(S) 1,2-Dichloroethane-d4	115			70.0-130		11/09/2019 13:43	WG1377899
(S) 1,2-Dichloroethane-d4	116			70.0-130		11/10/2019 23:58	WG1378314

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 1/3/2020



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	196000		2710	20000	1	11/07/2019 02:49	WG1376333

Sample Narrative:

L1156093-03 WG1376333: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	22000		51.9	1000	1	11/01/2019 20:07	WG1373431
Nitrate	23.1	J	22.7	100	1	11/01/2019 20:07	WG1373431
Sulfate	38700		77.4	5000	1	11/02/2019 19:03	WG1373918

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1410	B	102	1000	1	11/05/2019 22:29	WG1375433

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	325		15.0	100	1	11/07/2019 13:38	WG1373704
Manganese	387		0.250	5.00	1	11/07/2019 13:38	WG1373704

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	11/07/2019 10:47	WG1375654
(S) a,a,a-Trifluorotoluene(FID)	104			78.0-120		11/07/2019 10:47	WG1375654

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	U		0.287	0.678	1	11/05/2019 15:50	WG1375047
Ethane	U		0.296	1.29	1	11/05/2019 15:50	WG1375047
Ethene	U		0.422	1.27	1	11/05/2019 15:50	WG1375047

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch	
Acetone	2.54	J	J JO J4	1.05	25.0	1	11/09/2019 14:03	WG1377899
Acrylonitrile	U		J4	0.873	5.00	1	11/09/2019 14:03	WG1377899
Benzene	U			0.0896	0.500	1	11/09/2019 14:03	WG1377899
Bromobenzene	U			0.133	0.500	1	11/09/2019 14:03	WG1377899
Bromodichloromethane	U			0.0800	0.500	1	11/09/2019 14:03	WG1377899
Bromochloromethane	U			0.145	0.500	1	11/09/2019 14:03	WG1377899
Bromoform	U			0.186	0.500	1	11/09/2019 14:03	WG1377899
Bromomethane	U			0.157	2.50	1	11/09/2019 14:03	WG1377899
n-Butylbenzene	U	UJ	JO J4	0.143	0.500	1	11/09/2019 14:03	WG1377899
sec-Butylbenzene	U			0.134	0.500	1	11/09/2019 14:03	WG1377899
tert-Butylbenzene	U			0.183	0.500	1	11/09/2019 14:03	WG1377899
Carbon disulfide	U			0.101	0.500	1	11/09/2019 14:03	WG1377899
Carbon tetrachloride	U			0.159	0.500	1	11/09/2019 14:03	WG1377899

JC 1/3/2020

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Collected date/time: 10/31/19 12:20

L1156093

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/09/2019 14:03	WG1377899
Chlorodibromomethane	U		0.128	0.500	1	11/09/2019 14:03	WG1377899
Chloroethane	U		0.141	2.50	1	11/09/2019 14:03	WG1377899
Chloroform	U		0.0860	0.500	1	11/09/2019 14:03	WG1377899
Chloromethane	U		0.153	1.25	1	11/09/2019 14:03	WG1377899
2-Chlorotoluene	U		0.111	0.500	1	11/09/2019 14:03	WG1377899
4-Chlorotoluene	U		0.0972	0.500	1	11/09/2019 14:03	WG1377899
1,2-Dibromo-3-Chloropropane	U	UJ JO	0.325	2.50	1	11/09/2019 14:03	WG1377899
1,2-Dibromoethane	U		0.193	0.500	1	11/09/2019 14:03	WG1377899
Dibromomethane	U		0.117	0.500	1	11/09/2019 14:03	WG1377899
1,2-Dichlorobenzene	U		0.101	0.500	1	11/09/2019 14:03	WG1377899
1,3-Dichlorobenzene	U		0.130	0.500	1	11/09/2019 14:03	WG1377899
1,4-Dichlorobenzene	U		0.121	0.500	1	11/09/2019 14:03	WG1377899
Dichlorodifluoromethane	U		0.127	2.50	1	11/09/2019 14:03	WG1377899
1,1-Dichloroethane	U		0.114	0.500	1	11/09/2019 14:03	WG1377899
1,2-Dichloroethane	U		0.108	0.500	1	11/09/2019 14:03	WG1377899
1,1-Dichloroethene	U		0.188	0.500	1	11/09/2019 14:03	WG1377899
cis-1,2-Dichloroethene	U		0.0933	0.500	1	11/09/2019 14:03	WG1377899
trans-1,2-Dichloroethene	U		0.152	0.500	1	11/09/2019 14:03	WG1377899
1,2-Dichloropropane	U		0.190	0.500	1	11/09/2019 14:03	WG1377899
1,1-Dichloropropene	U		0.128	0.500	1	11/09/2019 14:03	WG1377899
1,3-Dichloropropane	U		0.147	1.00	1	11/09/2019 14:03	WG1377899
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/09/2019 14:03	WG1377899
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/09/2019 14:03	WG1377899
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/09/2019 14:03	WG1377899
2,2-Dichloropropane	U		0.0929	0.500	1	11/09/2019 14:03	WG1377899
Di-isopropyl ether	U		0.0924	0.500	1	11/09/2019 14:03	WG1377899
Ethylbenzene	U		0.158	0.500	1	11/09/2019 14:03	WG1377899
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/09/2019 14:03	WG1377899
2-Hexanone	U		0.757	5.00	1	11/09/2019 14:03	WG1377899
n-Hexane	U		0.305	5.00	1	11/09/2019 14:03	WG1377899
Iodomethane	U		0.377	10.0	1	11/09/2019 14:03	WG1377899
Isopropylbenzene	U		0.126	0.500	1	11/09/2019 14:03	WG1377899
p-Isopropyltoluene	U		0.138	0.500	1	11/09/2019 14:03	WG1377899
2-Butanone (MEK)	U		1.28	5.00	1	11/09/2019 14:03	WG1377899
Methylene Chloride	U	UJ JO	1.07	2.50	1	11/09/2019 14:03	WG1377899
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/09/2019 14:03	WG1377899
Methyl tert-butyl ether	U		0.102	0.500	1	11/09/2019 14:03	WG1377899
Naphthalene	U		0.174	2.50	1	11/09/2019 14:03	WG1377899
n-Propylbenzene	U		0.162	0.500	1	11/09/2019 14:03	WG1377899
Styrene	U		0.117	0.500	1	11/09/2019 14:03	WG1377899
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/09/2019 14:03	WG1377899
1,1,2,2-Tetrachloroethane	U	UJ JO	0.130	0.500	1	11/09/2019 14:03	WG1377899
1,1,2-Trichlorotrifluoroethane	U	UJ J4	0.164	0.500	1	11/09/2019 14:03	WG1377899
Tetrachloroethene	U		0.199	0.500	1	11/09/2019 14:03	WG1377899
Toluene	U		0.412	0.500	1	11/09/2019 14:03	WG1377899
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/09/2019 14:03	WG1377899
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/09/2019 14:03	WG1377899
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/09/2019 14:03	WG1377899
1,1,2-Trichloroethane	U		0.186	0.500	1	11/09/2019 14:03	WG1377899
Trichloroethene	U		0.153	0.500	1	11/09/2019 14:03	WG1377899
Trichlorofluoromethane	U		0.130	2.50	1	11/09/2019 14:03	WG1377899
1,2,3-Trichloropropane	U		0.247	2.50	1	11/09/2019 14:03	WG1377899
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/09/2019 14:03	WG1377899
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/09/2019 14:03	WG1377899
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/09/2019 14:03	WG1377899

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 1/3/2020



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	11/09/2019 14:03	WG1377899
Vinyl chloride	U		0.118	0.500	1	11/09/2019 14:03	WG1377899
Xylenes, Total	U		0.316	1.50	1	11/09/2019 14:03	WG1377899
<i>(S) Toluene-d8</i>	96.6			80.0-120		11/09/2019 14:03	WG1377899
<i>(S) 4-Bromofluorobenzene</i>	105			77.0-126		11/09/2019 14:03	WG1377899
<i>(S) 1,2-Dichloroethane-d4</i>	117			70.0-130		11/09/2019 14:03	WG1377899

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 1/3/2020



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	193000		2710	20000	1	11/07/2019 19:59	WG1376785

Sample Narrative:

L1156483-01 WG1376785: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	24500		51.9	1000	1	11/02/2019 17:15	WG1373953
Nitrate	U		22.7	100	1	11/02/2019 17:15	WG1373953
Sulfate	21600		77.4	5000	1	11/02/2019 17:15	WG1373953

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	27500		102	1000	1	11/06/2019 06:03	WG1375433

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	5520		15.0	100	1	11/06/2019 16:24	WG1375892
Manganese	140		0.250	5.00	1	11/06/2019 16:24	WG1375892

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	11/07/2019 22:45	WG1375654
(S) a,a,a-Trifluorotoluene(FID)	103			78.0-120		11/07/2019 22:45	WG1375654

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	33.6		0.287	0.678	1	11/05/2019 17:05	WG1375047
Ethane	U		0.296	1.29	1	11/05/2019 17:05	WG1375047
Ethene	U		0.422	1.27	1	11/05/2019 17:05	WG1375047

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	12.3	U	1.05	25.0	1	11/12/2019 19:53	WG1378777
Acrylonitrile	U		0.873	5.00	1	11/09/2019 15:11	WG1377928
Benzene	U		0.0896	0.500	1	11/09/2019 15:11	WG1377928
Bromobenzene	U		0.133	0.500	1	11/09/2019 15:11	WG1377928
Bromodichloromethane	U		0.0800	0.500	1	11/09/2019 15:11	WG1377928
Bromochloromethane	U		0.145	0.500	1	11/09/2019 15:11	WG1377928
Bromoform	U		0.186	0.500	1	11/09/2019 15:11	WG1377928
Bromomethane	U	UJ	0.157	2.50	1	11/09/2019 15:11	WG1377928
n-Butylbenzene	U		0.143	0.500	1	11/09/2019 15:11	WG1377928
sec-Butylbenzene	U		0.134	0.500	1	11/09/2019 15:11	WG1377928
tert-Butylbenzene	U		0.183	0.500	1	11/09/2019 15:11	WG1377928
Carbon disulfide	0.353	J	0.101	0.500	1	11/09/2019 15:11	WG1377928
Carbon tetrachloride	U		0.159	0.500	1	11/09/2019 15:11	WG1377928

JC 1/3/2020

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/09/2019 15:11	WG1377928
Chlorodibromomethane	U		0.128	0.500	1	11/09/2019 15:11	WG1377928
Chloroethane	U		0.141	2.50	1	11/09/2019 15:11	WG1377928
Chloroform	0.223	J	0.0860	0.500	1	11/09/2019 15:11	WG1377928
Chloromethane	U	UJ JO	0.153	1.25	1	11/09/2019 15:11	WG1377928
2-Chlorotoluene	U		0.111	0.500	1	11/09/2019 15:11	WG1377928
4-Chlorotoluene	U		0.0972	0.500	1	11/09/2019 15:11	WG1377928
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/09/2019 15:11	WG1377928
1,2-Dibromoethane	U		0.193	0.500	1	11/09/2019 15:11	WG1377928
Dibromomethane	U		0.117	0.500	1	11/09/2019 15:11	WG1377928
1,2-Dichlorobenzene	U		0.101	0.500	1	11/09/2019 15:11	WG1377928
1,3-Dichlorobenzene	U		0.130	0.500	1	11/09/2019 15:11	WG1377928
1,4-Dichlorobenzene	U		0.121	0.500	1	11/09/2019 15:11	WG1377928
Dichlorodifluoromethane	U	J4	0.127	2.50	1	11/09/2019 15:11	WG1377928
1,1-Dichloroethane	U		0.114	0.500	1	11/09/2019 15:11	WG1377928
1,2-Dichloroethane	U		0.108	0.500	1	11/09/2019 15:11	WG1377928
1,1-Dichloroethene	U		0.188	0.500	1	11/09/2019 15:11	WG1377928
cis-1,2-Dichloroethene	2.34		0.0933	0.500	1	11/09/2019 15:11	WG1377928
trans-1,2-Dichloroethene	U		0.152	0.500	1	11/09/2019 15:11	WG1377928
1,2-Dichloropropane	U		0.190	0.500	1	11/09/2019 15:11	WG1377928
1,1-Dichloropropene	U		0.128	0.500	1	11/09/2019 15:11	WG1377928
1,3-Dichloropropane	U		0.147	1.00	1	11/09/2019 15:11	WG1377928
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/09/2019 15:11	WG1377928
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/09/2019 15:11	WG1377928
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/09/2019 15:11	WG1377928
2,2-Dichloropropane	U		0.0929	0.500	1	11/09/2019 15:11	WG1377928
Di-isopropyl ether	U		0.0924	0.500	1	11/09/2019 15:11	WG1377928
Ethylbenzene	U		0.158	0.500	1	11/09/2019 15:11	WG1377928
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/09/2019 15:11	WG1377928
2-Hexanone	U		0.757	5.00	1	11/09/2019 15:11	WG1377928
n-Hexane	U		0.305	5.00	1	11/09/2019 15:11	WG1377928
Iodomethane	U	UJ JO	0.377	10.0	1	11/09/2019 15:11	WG1377928
Isopropylbenzene	U		0.126	0.500	1	11/09/2019 15:11	WG1377928
p-Isopropyltoluene	U		0.138	0.500	1	11/09/2019 15:11	WG1377928
2-Butanone (MEK)	U		1.28	5.00	1	11/09/2019 15:11	WG1377928
Methylene Chloride	U		1.07	2.50	1	11/09/2019 15:11	WG1377928
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/09/2019 15:11	WG1377928
Methyl tert-butyl ether	U		0.102	0.500	1	11/09/2019 15:11	WG1377928
Naphthalene	0.306	J	0.174	2.50	1	11/09/2019 15:11	WG1377928
n-Propylbenzene	U		0.162	0.500	1	11/09/2019 15:11	WG1377928
Styrene	U		0.117	0.500	1	11/09/2019 15:11	WG1377928
1,1,1-Tetrachloroethane	U		0.120	0.500	1	11/09/2019 15:11	WG1377928
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/09/2019 15:11	WG1377928
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/09/2019 15:11	WG1377928
Tetrachloroethene	U		0.199	0.500	1	11/09/2019 15:11	WG1377928
Toluene	U		0.412	0.500	1	11/09/2019 15:11	WG1377928
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/09/2019 15:11	WG1377928
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/09/2019 15:11	WG1377928
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/09/2019 15:11	WG1377928
1,1,2-Trichloroethane	U		0.186	0.500	1	11/09/2019 15:11	WG1377928
Trichloroethene	U		0.153	0.500	1	11/09/2019 15:11	WG1377928
Trichlorofluoromethane	U		0.130	2.50	1	11/09/2019 15:11	WG1377928
1,2,3-Trichloropropane	U		0.247	2.50	1	11/09/2019 15:11	WG1377928
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/09/2019 15:11	WG1377928
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/09/2019 15:11	WG1377928
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/09/2019 15:11	WG1377928

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 1/3/2020



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	11/09/2019 15:11	WG1377928
Vinyl chloride	2.80		0.118	0.500	1	11/09/2019 15:11	WG1377928
Xylenes, Total	U		0.316	1.50	1	11/09/2019 15:11	WG1377928
(S) Toluene-d8	92.5			80.0-120		11/09/2019 15:11	WG1377928
(S) Toluene-d8	93.9			80.0-120		11/12/2019 19:53	WG1378777
(S) 4-Bromofluorobenzene	95.1			77.0-126		11/09/2019 15:11	WG1377928
(S) 4-Bromofluorobenzene	95.6			77.0-126		11/12/2019 19:53	WG1378777
(S) 1,2-Dichloroethane-d4	95.6			70.0-130		11/09/2019 15:11	WG1377928
(S) 1,2-Dichloroethane-d4	96.7			70.0-130		11/12/2019 19:53	WG1378777

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 1/3/2020



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	472000		2710	20000	1	11/07/2019 20:06	WG1376785

Sample Narrative:

L1156483-02 WG1376785: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	51700		51.9	1000	1	11/02/2019 17:33	WG1373953
Nitrate	U		22.7	100	1	11/02/2019 17:33	WG1373953
Sulfate	60600		77.4	5000	1	11/02/2019 17:33	WG1373953

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	14800		102	1000	1	11/06/2019 07:06	WG1375433

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	2860		15.0	100	1	11/06/2019 16:27	WG1375892
Manganese	380		0.250	5.00	1	11/06/2019 16:27	WG1375892

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	11/09/2019 01:52	WG1376401
(S) a,a,a-Trifluorotoluene(FID)	104			78.0-120		11/09/2019 01:52	WG1376401

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	7530		2.87	6.78	10	11/06/2019 16:51	WG1375796
Ethane	38.2		0.296	1.29	1	11/05/2019 16:43	WG1375047
Ethene	124		0.422	1.27	1	11/05/2019 16:43	WG1375047

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	3.84	U	1.05	25.0	1	11/12/2019 20:14	WG1378777
Acrylonitrile	U		0.873	5.00	1	11/09/2019 15:31	WG1377928
Benzene	0.141	J	0.0896	0.500	1	11/09/2019 15:31	WG1377928
Bromobenzene	U		0.133	0.500	1	11/09/2019 15:31	WG1377928
Bromodichloromethane	U		0.0800	0.500	1	11/09/2019 15:31	WG1377928
Bromochloromethane	U		0.145	0.500	1	11/09/2019 15:31	WG1377928
Bromoform	U		0.186	0.500	1	11/09/2019 15:31	WG1377928
Bromomethane	U	UJ	0.157	2.50	1	11/09/2019 15:31	WG1377928
n-Butylbenzene	U		0.143	0.500	1	11/09/2019 15:31	WG1377928
sec-Butylbenzene	U		0.134	0.500	1	11/09/2019 15:31	WG1377928
tert-Butylbenzene	U		0.183	0.500	1	11/09/2019 15:31	WG1377928
Carbon disulfide	U		0.101	0.500	1	11/09/2019 15:31	WG1377928
Carbon tetrachloride	U		0.159	0.500	1	11/09/2019 15:31	WG1377928

JC 1/3/2020

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 11/01/19 10:50

L1156483

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/09/2019 15:31	WG1377928
Chlorodibromomethane	U		0.128	0.500	1	11/09/2019 15:31	WG1377928
Chloroethane	U		0.141	2.50	1	11/09/2019 15:31	WG1377928
Chloroform	0.850		0.0860	0.500	1	11/09/2019 15:31	WG1377928
Chloromethane	U	UJ <u>JO</u>	0.153	1.25	1	11/09/2019 15:31	WG1377928
2-Chlorotoluene	U		0.111	0.500	1	11/09/2019 15:31	WG1377928
4-Chlorotoluene	U		0.0972	0.500	1	11/09/2019 15:31	WG1377928
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/09/2019 15:31	WG1377928
1,2-Dibromoethane	U		0.193	0.500	1	11/09/2019 15:31	WG1377928
Dibromomethane	U		0.117	0.500	1	11/09/2019 15:31	WG1377928
1,2-Dichlorobenzene	U		0.101	0.500	1	11/09/2019 15:31	WG1377928
1,3-Dichlorobenzene	U		0.130	0.500	1	11/09/2019 15:31	WG1377928
1,4-Dichlorobenzene	U		0.121	0.500	1	11/09/2019 15:31	WG1377928
Dichlorodifluoromethane	U	J4	0.127	2.50	1	11/09/2019 15:31	WG1377928
1,1-Dichloroethane	U		0.114	0.500	1	11/09/2019 15:31	WG1377928
1,2-Dichloroethane	U		0.108	0.500	1	11/09/2019 15:31	WG1377928
1,1-Dichloroethene	U		0.188	0.500	1	11/09/2019 15:31	WG1377928
cis-1,2-Dichloroethene	15.6		0.0933	0.500	1	11/09/2019 15:31	WG1377928
trans-1,2-Dichloroethene	2.31		0.152	0.500	1	11/09/2019 15:31	WG1377928
1,2-Dichloropropane	U		0.190	0.500	1	11/09/2019 15:31	WG1377928
1,1-Dichloropropene	U		0.128	0.500	1	11/09/2019 15:31	WG1377928
1,3-Dichloropropane	U		0.147	1.00	1	11/09/2019 15:31	WG1377928
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/09/2019 15:31	WG1377928
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/09/2019 15:31	WG1377928
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/09/2019 15:31	WG1377928
2,2-Dichloropropane	U		0.0929	0.500	1	11/09/2019 15:31	WG1377928
Di-isopropyl ether	U		0.0924	0.500	1	11/09/2019 15:31	WG1377928
Ethylbenzene	U		0.158	0.500	1	11/09/2019 15:31	WG1377928
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/09/2019 15:31	WG1377928
2-Hexanone	U		0.757	5.00	1	11/09/2019 15:31	WG1377928
n-Hexane	U		0.305	5.00	1	11/09/2019 15:31	WG1377928
Iodomethane	U	UJ <u>JO</u>	0.377	10.0	1	11/09/2019 15:31	WG1377928
Isopropylbenzene	U		0.126	0.500	1	11/09/2019 15:31	WG1377928
p-Isopropyltoluene	U		0.138	0.500	1	11/09/2019 15:31	WG1377928
2-Butanone (MEK)	U		1.28	5.00	1	11/09/2019 15:31	WG1377928
Methylene Chloride	U		1.07	2.50	1	11/09/2019 15:31	WG1377928
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/09/2019 15:31	WG1377928
Methyl tert-butyl ether	U		0.102	0.500	1	11/09/2019 15:31	WG1377928
Naphthalene	U		0.174	2.50	1	11/09/2019 15:31	WG1377928
n-Propylbenzene	U		0.162	0.500	1	11/09/2019 15:31	WG1377928
Styrene	U		0.117	0.500	1	11/09/2019 15:31	WG1377928
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/09/2019 15:31	WG1377928
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/09/2019 15:31	WG1377928
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/09/2019 15:31	WG1377928
Tetrachloroethene	0.704		0.199	0.500	1	11/09/2019 15:31	WG1377928
Toluene	U		0.412	0.500	1	11/09/2019 15:31	WG1377928
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/09/2019 15:31	WG1377928
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/09/2019 15:31	WG1377928
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/09/2019 15:31	WG1377928
1,1,2-Trichloroethane	U		0.186	0.500	1	11/09/2019 15:31	WG1377928
Trichloroethene	0.484	U <u>J4</u>	0.153	0.500	1	11/09/2019 15:31	WG1377928
Trichlorofluoromethane	U		0.130	2.50	1	11/09/2019 15:31	WG1377928
1,2,3-Trichloropropane	U		0.247	2.50	1	11/09/2019 15:31	WG1377928
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/09/2019 15:31	WG1377928
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/09/2019 15:31	WG1377928
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/09/2019 15:31	WG1377928

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 1/3/2020



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	11/09/2019 15:31	WG1377928
Vinyl chloride	67.2		0.118	0.500	1	11/09/2019 15:31	WG1377928
Xylenes, Total	U		0.316	1.50	1	11/09/2019 15:31	WG1377928
(S) Toluene-d8	93.8			80.0-120		11/09/2019 15:31	WG1377928
(S) Toluene-d8	98.3			80.0-120		11/12/2019 20:14	WG1378777
(S) 4-Bromofluorobenzene	96.4			77.0-126		11/09/2019 15:31	WG1377928
(S) 4-Bromofluorobenzene	99.2			77.0-126		11/12/2019 20:14	WG1378777
(S) 1,2-Dichloroethane-d4	93.8			70.0-130		11/09/2019 15:31	WG1377928
(S) 1,2-Dichloroethane-d4	90.4			70.0-130		11/12/2019 20:14	WG1378777

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 1/3/2020



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	593000		2710	20000	1	11/07/2019 20:23	WG1376785

Sample Narrative:

L1156483-03 WG1376785: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	99300		51.9	1000	1	11/02/2019 17:51	WG1373953
Nitrate	U		22.7	100	1	11/02/2019 17:51	WG1373953
Sulfate	17800		77.4	5000	1	11/02/2019 17:51	WG1373953

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	15300		102	1000	1	11/06/2019 07:27	WG1375433

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	9630		15.0	100	1	11/06/2019 16:30	WG1375892
Manganese	1730		0.250	5.00	1	11/06/2019 16:30	WG1375892

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	11/09/2019 02:16	WG1376401
(S) a,a,a-Trifluorotoluene(FID)	106			78.0-120		11/09/2019 02:16	WG1376401

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	21600		2.87	6.78	10	11/06/2019 15:33	WG1375796
Ethane	214		0.296	1.29	1	11/05/2019 16:48	WG1375047
Ethene	165		0.422	1.27	1	11/05/2019 16:48	WG1375047

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	3.56	U	1.05	25.0	1	11/12/2019 20:35	WG1378777
Acrylonitrile	U		0.873	5.00	1	11/09/2019 15:50	WG1377928
Benzene	U		0.0896	0.500	1	11/09/2019 15:50	WG1377928
Bromobenzene	U		0.133	0.500	1	11/09/2019 15:50	WG1377928
Bromodichloromethane	U		0.0800	0.500	1	11/09/2019 15:50	WG1377928
Bromochloromethane	U		0.145	0.500	1	11/09/2019 15:50	WG1377928
Bromoform	U		0.186	0.500	1	11/09/2019 15:50	WG1377928
Bromomethane	U	UJ JO	0.157	2.50	1	11/09/2019 15:50	WG1377928
n-Butylbenzene	U		0.143	0.500	1	11/09/2019 15:50	WG1377928
sec-Butylbenzene	U		0.134	0.500	1	11/09/2019 15:50	WG1377928
tert-Butylbenzene	U		0.183	0.500	1	11/09/2019 15:50	WG1377928
Carbon disulfide	U		0.101	0.500	1	11/09/2019 15:50	WG1377928
Carbon tetrachloride	U		0.159	0.500	1	11/09/2019 15:50	WG1377928

JC 1/3/2020

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/09/2019 15:50	WG1377928
Chlorodibromomethane	U		0.128	0.500	1	11/09/2019 15:50	WG1377928
Chloroethane	U		0.141	2.50	1	11/09/2019 15:50	WG1377928
Chloroform	1.28		0.0860	0.500	1	11/09/2019 15:50	WG1377928
Chloromethane	U	UJ JO	0.153	1.25	1	11/09/2019 15:50	WG1377928
2-Chlorotoluene	U		0.111	0.500	1	11/09/2019 15:50	WG1377928
4-Chlorotoluene	U		0.0972	0.500	1	11/09/2019 15:50	WG1377928
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/09/2019 15:50	WG1377928
1,2-Dibromoethane	U		0.193	0.500	1	11/09/2019 15:50	WG1377928
Dibromomethane	U		0.117	0.500	1	11/09/2019 15:50	WG1377928
1,2-Dichlorobenzene	U		0.101	0.500	1	11/09/2019 15:50	WG1377928
1,3-Dichlorobenzene	U		0.130	0.500	1	11/09/2019 15:50	WG1377928
1,4-Dichlorobenzene	U		0.121	0.500	1	11/09/2019 15:50	WG1377928
Dichlorodifluoromethane	U	J4	0.127	2.50	1	11/09/2019 15:50	WG1377928
1,1-Dichloroethane	U		0.114	0.500	1	11/09/2019 15:50	WG1377928
1,2-Dichloroethane	U		0.108	0.500	1	11/09/2019 15:50	WG1377928
1,1-Dichloroethene	U		0.188	0.500	1	11/09/2019 15:50	WG1377928
cis-1,2-Dichloroethene	0.286	U J4	0.0933	0.500	1	11/09/2019 15:50	WG1377928
trans-1,2-Dichloroethene	1.07		0.152	0.500	1	11/09/2019 15:50	WG1377928
1,2-Dichloropropane	U		0.190	0.500	1	11/09/2019 15:50	WG1377928
1,1-Dichloropropene	U		0.128	0.500	1	11/09/2019 15:50	WG1377928
1,3-Dichloropropane	U		0.147	1.00	1	11/09/2019 15:50	WG1377928
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/09/2019 15:50	WG1377928
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/09/2019 15:50	WG1377928
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/09/2019 15:50	WG1377928
2,2-Dichloropropane	U		0.0929	0.500	1	11/09/2019 15:50	WG1377928
Di-isopropyl ether	U		0.0924	0.500	1	11/09/2019 15:50	WG1377928
Ethylbenzene	U		0.158	0.500	1	11/09/2019 15:50	WG1377928
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/09/2019 15:50	WG1377928
2-Hexanone	U		0.757	5.00	1	11/09/2019 15:50	WG1377928
n-Hexane	U		0.305	5.00	1	11/09/2019 15:50	WG1377928
Iodomethane	U	UJ JO	0.377	10.0	1	11/09/2019 15:50	WG1377928
Isopropylbenzene	U		0.126	0.500	1	11/09/2019 15:50	WG1377928
p-Isopropyltoluene	U		0.138	0.500	1	11/09/2019 15:50	WG1377928
2-Butanone (MEK)	U		1.28	5.00	1	11/09/2019 15:50	WG1377928
Methylene Chloride	U		1.07	2.50	1	11/09/2019 15:50	WG1377928
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/09/2019 15:50	WG1377928
Methyl tert-butyl ether	U		0.102	0.500	1	11/09/2019 15:50	WG1377928
Naphthalene	U		0.174	2.50	1	11/09/2019 15:50	WG1377928
n-Propylbenzene	U		0.162	0.500	1	11/09/2019 15:50	WG1377928
Styrene	U		0.117	0.500	1	11/09/2019 15:50	WG1377928
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/09/2019 15:50	WG1377928
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/09/2019 15:50	WG1377928
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/09/2019 15:50	WG1377928
Tetrachloroethene	U		0.199	0.500	1	11/09/2019 15:50	WG1377928
Toluene	U		0.412	0.500	1	11/09/2019 15:50	WG1377928
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/09/2019 15:50	WG1377928
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/09/2019 15:50	WG1377928
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/09/2019 15:50	WG1377928
1,1,2-Trichloroethane	U		0.186	0.500	1	11/09/2019 15:50	WG1377928 JC 1/3/2020
Trichloroethene	U		0.153	0.500	1	11/09/2019 15:50	WG1377928
Trichlorofluoromethane	U		0.130	2.50	1	11/09/2019 15:50	WG1377928
1,2,3-Trichloropropane	U		0.247	2.50	1	11/09/2019 15:50	WG1377928
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/09/2019 15:50	WG1377928
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/09/2019 15:50	WG1377928
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/09/2019 15:50	WG1377928

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	11/09/2019 15:50	WG1377928
Vinyl chloride	6.85		0.118	0.500	1	11/09/2019 15:50	WG1377928
Xylenes, Total	U		0.316	1.50	1	11/09/2019 15:50	WG1377928
(S) Toluene-d8	93.7			80.0-120		11/09/2019 15:50	WG1377928
(S) Toluene-d8	95.0			80.0-120		11/12/2019 20:35	WG1378777
(S) 4-Bromofluorobenzene	94.6			77.0-126		11/09/2019 15:50	WG1377928
(S) 4-Bromofluorobenzene	91.9			77.0-126		11/12/2019 20:35	WG1378777
(S) 1,2-Dichloroethane-d4	90.0			70.0-130		11/09/2019 15:50	WG1377928
(S) 1,2-Dichloroethane-d4	92.7			70.0-130		11/12/2019 20:35	WG1378777

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 1/3/2020



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	351000		2710	20000	1	11/07/2019 21:22	WG1376785

Sample Narrative:

L1156483-04 WG1376785: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	66300		51.9	1000	1	11/02/2019 18:26	WG1373953
Nitrate	U		22.7	100	1	11/02/2019 18:26	WG1373953
Sulfate	224000		387	25000	5	11/03/2019 23:01	WG1373953

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	32100		102	1000	1	11/06/2019 20:00	WG1376183

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	800		15.0	100	1	11/06/2019 16:33	WG1375892
Manganese	178		0.250	5.00	1	11/06/2019 16:33	WG1375892

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	11/09/2019 03:04	WG1376401
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120		11/09/2019 03:04	WG1376401

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	1670		0.287	0.678	1	11/05/2019 16:59	WG1375047
Ethane	16.4		0.296	1.29	1	11/05/2019 16:59	WG1375047
Ethene	323		0.422	1.27	1	11/05/2019 16:59	WG1375047

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	12.5	U	10.5	250	10	11/12/2019 20:56	WG1378777
Acrylonitrile	U		0.873	5.00	1	11/09/2019 16:10	WG1377928
Benzene	U		0.0896	0.500	1	11/09/2019 16:10	WG1377928
Bromobenzene	U		0.133	0.500	1	11/09/2019 16:10	WG1377928
Bromodichloromethane	U		0.0800	0.500	1	11/09/2019 16:10	WG1377928
Bromochloromethane	U		0.145	0.500	1	11/09/2019 16:10	WG1377928
Bromoform	U		0.186	0.500	1	11/09/2019 16:10	WG1377928
Bromomethane	U	UJ JO	0.157	2.50	1	11/09/2019 16:10	WG1377928
n-Butylbenzene	U		0.143	0.500	1	11/09/2019 16:10	WG1377928
sec-Butylbenzene	U		0.134	0.500	1	11/09/2019 16:10	WG1377928
tert-Butylbenzene	U		0.183	0.500	1	11/09/2019 16:10	WG1377928
Carbon disulfide	0.573		0.101	0.500	1	11/09/2019 16:10	WG1377928
Carbon tetrachloride	U		0.159	0.500	1	11/09/2019 16:10	WG1377928

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Collected date/time: 11/01/19 14:15

L1156483

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/09/2019 16:10	WG1377928
Chlorodibromomethane	U		0.128	0.500	1	11/09/2019 16:10	WG1377928
Chloroethane	U		0.141	2.50	1	11/09/2019 16:10	WG1377928
Chloroform	0.810		0.0860	0.500	1	11/09/2019 16:10	WG1377928
Chloromethane	U	UJ JO	0.153	1.25	1	11/09/2019 16:10	WG1377928
2-Chlorotoluene	U		0.111	0.500	1	11/09/2019 16:10	WG1377928
4-Chlorotoluene	U		0.0972	0.500	1	11/09/2019 16:10	WG1377928
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/09/2019 16:10	WG1377928
1,2-Dibromoethane	U		0.193	0.500	1	11/09/2019 16:10	WG1377928
Dibromomethane	U		0.117	0.500	1	11/09/2019 16:10	WG1377928
1,2-Dichlorobenzene	U		0.101	0.500	1	11/09/2019 16:10	WG1377928
1,3-Dichlorobenzene	U		0.130	0.500	1	11/09/2019 16:10	WG1377928
1,4-Dichlorobenzene	U		0.121	0.500	1	11/09/2019 16:10	WG1377928
Dichlorodifluoromethane	U	J4	0.127	2.50	1	11/09/2019 16:10	WG1377928
1,1-Dichloroethane	U		0.114	0.500	1	11/09/2019 16:10	WG1377928
1,2-Dichloroethane	U		0.108	0.500	1	11/09/2019 16:10	WG1377928
1,1-Dichloroethene	0.661		0.188	0.500	1	11/09/2019 16:10	WG1377928
cis-1,2-Dichloroethene	258		0.933	5.00	10	11/12/2019 20:56	WG1378777
trans-1,2-Dichloroethene	6.03		0.152	0.500	1	11/09/2019 16:10	WG1377928
1,2-Dichloropropane	U		0.190	0.500	1	11/09/2019 16:10	WG1377928
1,1-Dichloropropene	U		0.128	0.500	1	11/09/2019 16:10	WG1377928
1,3-Dichloropropane	U		0.147	1.00	1	11/09/2019 16:10	WG1377928
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/09/2019 16:10	WG1377928
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/09/2019 16:10	WG1377928
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/09/2019 16:10	WG1377928
2,2-Dichloropropane	U		0.0929	0.500	1	11/09/2019 16:10	WG1377928
Di-isopropyl ether	U		0.0924	0.500	1	11/09/2019 16:10	WG1377928
Ethylbenzene	U		0.158	0.500	1	11/09/2019 16:10	WG1377928
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/09/2019 16:10	WG1377928
2-Hexanone	U		0.757	5.00	1	11/09/2019 16:10	WG1377928
n-Hexane	U		0.305	5.00	1	11/09/2019 16:10	WG1377928
Iodomethane	U	UJ JO	0.377	10.0	1	11/09/2019 16:10	WG1377928
Isopropylbenzene	U		0.126	0.500	1	11/09/2019 16:10	WG1377928
p-Isopropyltoluene	U		0.138	0.500	1	11/09/2019 16:10	WG1377928
2-Butanone (MEK)	U		1.28	5.00	1	11/09/2019 16:10	WG1377928
Methylene Chloride	U		1.07	2.50	1	11/09/2019 16:10	WG1377928
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/09/2019 16:10	WG1377928
Methyl tert-butyl ether	U		0.102	0.500	1	11/09/2019 16:10	WG1377928
Naphthalene	U		0.174	2.50	1	11/09/2019 16:10	WG1377928
n-Propylbenzene	U		0.162	0.500	1	11/09/2019 16:10	WG1377928
Styrene	U		0.117	0.500	1	11/09/2019 16:10	WG1377928
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/09/2019 16:10	WG1377928
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/09/2019 16:10	WG1377928
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/09/2019 16:10	WG1377928
Tetrachloroethene	1.25		0.199	0.500	1	11/09/2019 16:10	WG1377928
Toluene	0.671		0.412	0.500	1	11/09/2019 16:10	WG1377928
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/09/2019 16:10	WG1377928
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/09/2019 16:10	WG1377928
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/09/2019 16:10	WG1377928
1,1,2-Trichloroethane	U		0.186	0.500	1	11/09/2019 16:10	WG1377928
Trichloroethene	1.73		0.153	0.500	1	11/09/2019 16:10	WG1377928
Trichlorofluoromethane	U		0.130	2.50	1	11/09/2019 16:10	WG1377928
1,2,3-Trichloropropane	U		0.247	2.50	1	11/09/2019 16:10	WG1377928
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/09/2019 16:10	WG1377928
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/09/2019 16:10	WG1377928
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/09/2019 16:10	WG1377928

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 1/3/2020



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	11/09/2019 16:10	WG1377928
Vinyl chloride	41.5		0.118	0.500	1	11/09/2019 16:10	WG1377928
Xylenes, Total	U		0.316	1.50	1	11/09/2019 16:10	WG1377928
(S) Toluene-d8	92.9			80.0-120		11/09/2019 16:10	WG1377928
(S) Toluene-d8	94.8			80.0-120		11/12/2019 20:56	WG1378777
(S) 4-Bromofluorobenzene	93.4			77.0-126		11/09/2019 16:10	WG1377928
(S) 4-Bromofluorobenzene	94.8			77.0-126		11/12/2019 20:56	WG1378777
(S) 1,2-Dichloroethane-d4	94.8			70.0-130		11/09/2019 16:10	WG1377928
(S) 1,2-Dichloroethane-d4	93.9			70.0-130		11/12/2019 20:56	WG1378777

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 1/3/2020



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	358000		2710	20000	1	11/07/2019 21:30	WG1376785

Sample Narrative:

L1156483-05 WG1376785: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	12300		51.9	1000	1	11/02/2019 18:43	WG1373953
Nitrate	U		22.7	100	1	11/02/2019 18:43	WG1373953
Sulfate	15200		77.4	5000	1	11/02/2019 18:43	WG1373953

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1650	<u>B</u>	102	1000	1	11/06/2019 20:22	WG1376183

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	351		15.0	100	1	11/06/2019 16:37	WG1375892
Manganese	310		0.250	5.00	1	11/06/2019 16:37	WG1375892

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	11/09/2019 07:26	WG1376401
(S) a,a,a-Trifluorotoluene(FID)	104			78.0-120		11/09/2019 07:26	WG1376401

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	20.4		0.287	0.678	1	11/05/2019 17:01	WG1375047
Ethane	U		0.296	1.29	1	11/05/2019 17:01	WG1375047
Ethene	U		0.422	1.27	1	11/05/2019 17:01	WG1375047

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U		1.05	25.0	1	11/12/2019 21:17	WG1378777
Acrylonitrile	U		0.873	5.00	1	11/09/2019 16:29	WG1377928
Benzene	U		0.0896	0.500	1	11/09/2019 16:29	WG1377928
Bromobenzene	U		0.133	0.500	1	11/09/2019 16:29	WG1377928
Bromodichloromethane	U		0.0800	0.500	1	11/09/2019 16:29	WG1377928
Bromochloromethane	U		0.145	0.500	1	11/09/2019 16:29	WG1377928
Bromoform	U		0.186	0.500	1	11/09/2019 16:29	WG1377928
Bromomethane	U	<u>UJ</u> <u>JO</u>	0.157	2.50	1	11/09/2019 16:29	WG1377928
n-Butylbenzene	U		0.143	0.500	1	11/09/2019 16:29	WG1377928
sec-Butylbenzene	U		0.134	0.500	1	11/09/2019 16:29	WG1377928
tert-Butylbenzene	U		0.183	0.500	1	11/09/2019 16:29	WG1377928
Carbon disulfide	0.195	<u>J</u>	0.101	0.500	1	11/09/2019 16:29	WG1377928
Carbon tetrachloride	U		0.159	0.500	1	11/09/2019 16:29	WG1377928

JC 1/3/2020

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 11/01/19 13:30

L1156483

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	11/09/2019 16:29	WG1377928
Chlorodibromomethane	U		0.128	0.500	1	11/09/2019 16:29	WG1377928
Chloroethane	U		0.141	2.50	1	11/09/2019 16:29	WG1377928
Chloroform	U		0.0860	0.500	1	11/09/2019 16:29	WG1377928
Chloromethane	U	UJ <u>JO</u>	0.153	1.25	1	11/09/2019 16:29	WG1377928
2-Chlorotoluene	U		0.111	0.500	1	11/09/2019 16:29	WG1377928
4-Chlorotoluene	U		0.0972	0.500	1	11/09/2019 16:29	WG1377928
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/09/2019 16:29	WG1377928
1,2-Dibromoethane	U		0.193	0.500	1	11/09/2019 16:29	WG1377928
Dibromomethane	U		0.117	0.500	1	11/09/2019 16:29	WG1377928
1,2-Dichlorobenzene	U		0.101	0.500	1	11/09/2019 16:29	WG1377928
1,3-Dichlorobenzene	U		0.130	0.500	1	11/09/2019 16:29	WG1377928
1,4-Dichlorobenzene	U		0.121	0.500	1	11/09/2019 16:29	WG1377928
Dichlorodifluoromethane	U	JO	0.127	2.50	1	11/09/2019 16:29	WG1377928
1,1-Dichloroethane	U		0.114	0.500	1	11/09/2019 16:29	WG1377928
1,2-Dichloroethane	U		0.108	0.500	1	11/09/2019 16:29	WG1377928
1,1-Dichloroethene	U		0.188	0.500	1	11/09/2019 16:29	WG1377928
cis-1,2-Dichloroethene	U		0.0933	0.500	1	11/12/2019 21:17	WG1378777
trans-1,2-Dichloroethene	U		0.152	0.500	1	11/09/2019 16:29	WG1377928
1,2-Dichloropropane	U		0.190	0.500	1	11/09/2019 16:29	WG1377928
1,1-Dichloropropene	U		0.128	0.500	1	11/09/2019 16:29	WG1377928
1,3-Dichloropropane	U		0.147	1.00	1	11/09/2019 16:29	WG1377928
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/09/2019 16:29	WG1377928
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/09/2019 16:29	WG1377928
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/09/2019 16:29	WG1377928
2,2-Dichloropropane	U		0.0929	0.500	1	11/09/2019 16:29	WG1377928
Di-isopropyl ether	U		0.0924	0.500	1	11/09/2019 16:29	WG1377928
Ethylbenzene	U		0.158	0.500	1	11/09/2019 16:29	WG1377928
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/09/2019 16:29	WG1377928
2-Hexanone	U		0.757	5.00	1	11/09/2019 16:29	WG1377928
n-Hexane	U		0.305	5.00	1	11/09/2019 16:29	WG1377928
Iodomethane	U	UJ <u>JO</u>	0.377	10.0	1	11/09/2019 16:29	WG1377928
Isopropylbenzene	U		0.126	0.500	1	11/09/2019 16:29	WG1377928
p-Isopropyltoluene	U		0.138	0.500	1	11/09/2019 16:29	WG1377928
2-Butanone (MEK)	U		1.28	5.00	1	11/09/2019 16:29	WG1377928
Methylene Chloride	U		1.07	2.50	1	11/09/2019 16:29	WG1377928
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/09/2019 16:29	WG1377928
Methyl tert-butyl ether	U		0.102	0.500	1	11/09/2019 16:29	WG1377928
Naphthalene	U		0.174	2.50	1	11/09/2019 16:29	WG1377928
n-Propylbenzene	U		0.162	0.500	1	11/09/2019 16:29	WG1377928
Styrene	U		0.117	0.500	1	11/09/2019 16:29	WG1377928
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/09/2019 16:29	WG1377928
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/09/2019 16:29	WG1377928
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/09/2019 16:29	WG1377928
Tetrachloroethene	U		0.199	0.500	1	11/09/2019 16:29	WG1377928
Toluene	U		0.412	0.500	1	11/09/2019 16:29	WG1377928
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/09/2019 16:29	WG1377928
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/09/2019 16:29	WG1377928
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/09/2019 16:29	WG1377928
1,1,2-Trichloroethane	U		0.186	0.500	1	11/09/2019 16:29	WG1377928
Trichloroethene	U		0.153	0.500	1	11/09/2019 16:29	WG1377928
Trichlorofluoromethane	U		0.130	2.50	1	11/09/2019 16:29	WG1377928
1,2,3-Trichloropropane	U		0.247	2.50	1	11/09/2019 16:29	WG1377928
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/09/2019 16:29	WG1377928
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/09/2019 16:29	WG1377928
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/09/2019 16:29	WG1377928

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 1/3/2020



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	11/09/2019 16:29	WG1377928
Vinyl chloride	U		0.118	0.500	1	11/09/2019 16:29	WG1377928
Xylenes, Total	U		0.316	1.50	1	11/09/2019 16:29	WG1377928
(S) Toluene-d8	90.8			80.0-120		11/09/2019 16:29	WG1377928
(S) Toluene-d8	97.2			80.0-120		11/12/2019 21:17	WG1378777
(S) 4-Bromofluorobenzene	93.7			77.0-126		11/09/2019 16:29	WG1377928
(S) 4-Bromofluorobenzene	98.5			77.0-126		11/12/2019 21:17	WG1378777
(S) 1,2-Dichloroethane-d4	91.8			70.0-130		11/09/2019 16:29	WG1377928
(S) 1,2-Dichloroethane-d4	92.4			70.0-130		11/12/2019 21:17	WG1378777

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 1/3/2020



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	1060000		2710	20000	1	11/11/2019 19:16	WG1376842

Sample Narrative:

L1157016-01 WG1376842: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	51200		51.9	1000	1	11/05/2019 16:36	WG1375176
Nitrate	U		22.7	100	1	11/05/2019 16:36	WG1375176
Sulfate	57200		77.4	5000	1	11/05/2019 16:36	WG1375176

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	121000		510	5000	5	11/08/2019 11:35	WG1377288

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	60600		750	5000	50	11/11/2019 19:40	WG1376698
Manganese	5260		12.5	250	50	11/11/2019 19:40	WG1376698

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	3940	J+	31.6	100	1	11/10/2019 11:06	WG1378063
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120		11/10/2019 11:06	WG1378063

JC 1/6/20

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	12000		2.87	6.78	10	11/08/2019 11:40	WG1377285
Ethane	370		0.296	1.29	1	11/07/2019 14:12	WG1376537
Ethene	151		0.422	1.27	1	11/07/2019 14:12	WG1376537

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	16.1	J	10.5	250	10	11/12/2019 14:59	WG1378635
Acrylonitrile	U		0.873	5.00	1	11/11/2019 01:29	WG1378382
Benzene	U		0.0896	0.500	1	11/11/2019 01:29	WG1378382
Bromobenzene	U		0.133	0.500	1	11/11/2019 01:29	WG1378382
Bromodichloromethane	U		0.0800	0.500	1	11/11/2019 01:29	WG1378382
Bromochloromethane	U		0.145	0.500	1	11/11/2019 01:29	WG1378382
Bromoform	U		0.186	0.500	1	11/11/2019 01:29	WG1378382
Bromomethane	U	UJ JO	0.157	2.50	1	11/11/2019 01:29	WG1378382
n-Butylbenzene	U		0.143	0.500	1	11/11/2019 01:29	WG1378382
sec-Butylbenzene	U		0.134	0.500	1	11/11/2019 01:29	WG1378382
tert-Butylbenzene	U		0.183	0.500	1	11/11/2019 01:29	WG1378382
Carbon disulfide	0.357	J	0.101	0.500	1	11/11/2019 01:29	WG1378382
Carbon tetrachloride	U		0.159	0.500	1	11/11/2019 01:29	WG1378382

JC 1/3/2020

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/11/2019 01:29	WG1378382
Chlorodibromomethane	U		0.128	0.500	1	11/11/2019 01:29	WG1378382
Chloroethane	0.723	J	0.141	2.50	1	11/11/2019 01:29	WG1378382
Chloroform	U		0.0860	0.500	1	11/11/2019 01:29	WG1378382
Chloromethane	U	UJ JO	0.153	1.25	1	11/11/2019 01:29	WG1378382
2-Chlorotoluene	U		0.111	0.500	1	11/11/2019 01:29	WG1378382
4-Chlorotoluene	U		0.0972	0.500	1	11/11/2019 01:29	WG1378382
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/11/2019 01:29	WG1378382
1,2-Dibromoethane	U		0.193	0.500	1	11/11/2019 01:29	WG1378382
Dibromomethane	U		0.117	0.500	1	11/11/2019 01:29	WG1378382
1,2-Dichlorobenzene	U		0.101	0.500	1	11/11/2019 01:29	WG1378382
1,3-Dichlorobenzene	U		0.130	0.500	1	11/11/2019 01:29	WG1378382
1,4-Dichlorobenzene	U		0.121	0.500	1	11/11/2019 01:29	WG1378382
Dichlorodifluoromethane	U		0.127	2.50	1	11/11/2019 01:29	WG1378382
1,1-Dichloroethane	U		0.114	0.500	1	11/11/2019 01:29	WG1378382
1,2-Dichloroethane	U		0.108	0.500	1	11/11/2019 01:29	WG1378382
1,1-Dichloroethene	8.92		0.188	0.500	1	11/11/2019 01:29	WG1378382
cis-1,2-Dichloroethene	4180		9.33	50.0	100	11/13/2019 08:19	WG1379454
trans-1,2-Dichloroethene	91.1		0.152	0.500	1	11/11/2019 01:29	WG1378382
1,2-Dichloropropane	U		0.190	0.500	1	11/11/2019 01:29	WG1378382
1,1-Dichloropropene	U		0.128	0.500	1	11/11/2019 01:29	WG1378382
1,3-Dichloropropane	U		0.147	1.00	1	11/11/2019 01:29	WG1378382
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/11/2019 01:29	WG1378382
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/11/2019 01:29	WG1378382
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/11/2019 01:29	WG1378382
2,2-Dichloropropane	U		0.0929	0.500	1	11/11/2019 01:29	WG1378382
Di-isopropyl ether	U		0.0924	0.500	1	11/11/2019 01:29	WG1378382
Ethylbenzene	U		0.158	0.500	1	11/11/2019 01:29	WG1378382
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/11/2019 01:29	WG1378382
2-Hexanone	U		0.757	5.00	1	11/11/2019 01:29	WG1378382
n-Hexane	U		0.305	5.00	1	11/11/2019 01:29	WG1378382
Iodomethane	U	UJ JO	0.377	10.0	1	11/11/2019 01:29	WG1378382
Isopropylbenzene	U		0.126	0.500	1	11/11/2019 01:29	WG1378382
p-Isopropyltoluene	U		0.138	0.500	1	11/11/2019 01:29	WG1378382
2-Butanone (MEK)	U		1.28	5.00	1	11/11/2019 01:29	WG1378382
Methylene Chloride	U		1.07	2.50	1	11/11/2019 01:29	WG1378382
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/11/2019 01:29	WG1378382
Methyl tert-butyl ether	U		0.102	0.500	1	11/11/2019 01:29	WG1378382
Naphthalene	U		0.174	2.50	1	11/11/2019 01:29	WG1378382
n-Propylbenzene	U		0.162	0.500	1	11/11/2019 01:29	WG1378382
Styrene	U		0.117	0.500	1	11/11/2019 01:29	WG1378382
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/11/2019 01:29	WG1378382
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/11/2019 01:29	WG1378382
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/11/2019 01:29	WG1378382
Tetrachloroethene	3.95		0.199	0.500	1	11/11/2019 01:29	WG1378382
Toluene	U		0.412	0.500	1	11/11/2019 01:29	WG1378382
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/11/2019 01:29	WG1378382
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/11/2019 01:29	WG1378382
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/11/2019 01:29	WG1378382
1,1,2-Trichloroethane	U		0.186	0.500	1	11/11/2019 01:29	WG1378382
Trichloroethene	20.2		0.153	0.500	1	11/11/2019 01:29	WG1378382
Trichlorofluoromethane	U		0.130	2.50	1	11/11/2019 01:29	WG1378382
1,2,3-Trichloropropane	U		0.247	2.50	1	11/11/2019 01:29	WG1378382
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/11/2019 01:29	WG1378382
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/11/2019 01:29	WG1378382
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/11/2019 01:29	WG1378382

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 1/3/2020



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	UJ JO	0.645	5.00	1	11/11/2019 01:29	WG1378382
Vinyl chloride	642		1.18	5.00	10	11/12/2019 14:59	WG1378635
Xylenes, Total	U		0.316	1.50	1	11/11/2019 01:29	WG1378382
(S) Toluene-d8	92.9			80.0-120		11/11/2019 01:29	WG1378382
(S) Toluene-d8	96.1			80.0-120		11/12/2019 14:59	WG1378635
(S) Toluene-d8	97.1			80.0-120		11/13/2019 08:19	WG1379454
(S) 4-Bromofluorobenzene	95.4			77.0-126		11/11/2019 01:29	WG1378382
(S) 4-Bromofluorobenzene	95.9			77.0-126		11/12/2019 14:59	WG1378635
(S) 4-Bromofluorobenzene	98.4			77.0-126		11/13/2019 08:19	WG1379454
(S) 1,2-Dichloroethane-d4	98.8			70.0-130		11/11/2019 01:29	WG1378382
(S) 1,2-Dichloroethane-d4	90.1			70.0-130		11/12/2019 14:59	WG1378635
(S) 1,2-Dichloroethane-d4	97.4			70.0-130		11/13/2019 08:19	WG1379454

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 1/3/2020



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	948000		2710	20000	1	11/11/2019 19:23	WG1376842

Sample Narrative:

L1157016-02 WG1376842: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	93800		260	5000	5	11/05/2019 17:11	WG1375176
Nitrate	U		22.7	100	1	11/05/2019 16:54	WG1375176
Sulfate	13600		77.4	5000	1	11/05/2019 16:54	WG1375176

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	122000		510	5000	5	11/08/2019 11:52	WG1377288

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	54500		750	5000	50	11/11/2019 19:43	WG1376698
Manganese	2110		12.5	250	50	11/11/2019 19:43	WG1376698

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	4360	J+	31.6	100	1	11/10/2019 11:30	WG1378063
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	106			78.0-120		11/10/2019 11:30	WG1378063

JC 1/6/20

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	14300		2.87	6.78	10	11/08/2019 11:42	WG1377285
Ethane	67.6		0.296	1.29	1	11/07/2019 14:15	WG1376537
Ethene	2500		0.422	1.27	1	11/07/2019 14:15	WG1376537

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	46.4		1.05	25.0	1	11/11/2019 01:48	WG1378382
Acrylonitrile	U		0.873	5.00	1	11/11/2019 01:48	WG1378382
Benzene	U		0.0896	0.500	1	11/11/2019 01:48	WG1378382
Bromobenzene	U		0.133	0.500	1	11/11/2019 01:48	WG1378382
Bromodichloromethane	U		0.0800	0.500	1	11/11/2019 01:48	WG1378382
Bromochloromethane	U		0.145	0.500	1	11/11/2019 01:48	WG1378382
Bromoform	U		0.186	0.500	1	11/11/2019 01:48	WG1378382
Bromomethane	U	UJ JO	0.157	2.50	1	11/11/2019 01:48	WG1378382
n-Butylbenzene	U		0.143	0.500	1	11/11/2019 01:48	WG1378382
sec-Butylbenzene	U		0.134	0.500	1	11/11/2019 01:48	WG1378382
tert-Butylbenzene	U		0.183	0.500	1	11/11/2019 01:48	WG1378382
Carbon disulfide	1.41		0.101	0.500	1	11/11/2019 01:48	WG1378382
Carbon tetrachloride	U		0.159	0.500	1	11/11/2019 01:48	WG1378382

JC 1/3/2020

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/11/2019 01:48	WG1378382
Chlorodibromomethane	U		0.128	0.500	1	11/11/2019 01:48	WG1378382
Chloroethane	1.33	J	0.141	2.50	1	11/11/2019 01:48	WG1378382
Chloroform	0.278	J	0.0860	0.500	1	11/11/2019 01:48	WG1378382
Chloromethane	U	UJ JO	0.153	1.25	1	11/11/2019 01:48	WG1378382
2-Chlorotoluene	U		0.111	0.500	1	11/11/2019 01:48	WG1378382
4-Chlorotoluene	U		0.0972	0.500	1	11/11/2019 01:48	WG1378382
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/11/2019 01:48	WG1378382
1,2-Dibromoethane	U		0.193	0.500	1	11/11/2019 01:48	WG1378382
Dibromomethane	U		0.117	0.500	1	11/11/2019 01:48	WG1378382
1,2-Dichlorobenzene	U		0.101	0.500	1	11/11/2019 01:48	WG1378382
1,3-Dichlorobenzene	U		0.130	0.500	1	11/11/2019 01:48	WG1378382
1,4-Dichlorobenzene	U		0.121	0.500	1	11/11/2019 01:48	WG1378382
Dichlorodifluoromethane	U		0.127	2.50	1	11/11/2019 01:48	WG1378382
1,1-Dichloroethane	U		0.114	0.500	1	11/11/2019 01:48	WG1378382
1,2-Dichloroethane	U		0.108	0.500	1	11/11/2019 01:48	WG1378382
1,1-Dichloroethene	7.81		0.188	0.500	1	11/11/2019 01:48	WG1378382
cis-1,2-Dichloroethene	5130		4.67	25.0	50	11/12/2019 15:20	WG1378635
trans-1,2-Dichloroethene	47.0		0.152	0.500	1	11/11/2019 01:48	WG1378382
1,2-Dichloropropane	U		0.190	0.500	1	11/11/2019 01:48	WG1378382
1,1-Dichloropropene	U		0.128	0.500	1	11/11/2019 01:48	WG1378382
1,3-Dichloropropane	U		0.147	1.00	1	11/11/2019 01:48	WG1378382
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/11/2019 01:48	WG1378382
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/11/2019 01:48	WG1378382
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/11/2019 01:48	WG1378382
2,2-Dichloropropane	U		0.0929	0.500	1	11/11/2019 01:48	WG1378382
Di-isopropyl ether	U		0.0924	0.500	1	11/11/2019 01:48	WG1378382
Ethylbenzene	U		0.158	0.500	1	11/11/2019 01:48	WG1378382
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/11/2019 01:48	WG1378382
2-Hexanone	U		0.757	5.00	1	11/11/2019 01:48	WG1378382
n-Hexane	U		0.305	5.00	1	11/11/2019 01:48	WG1378382
Iodomethane	U	UJ JO	0.377	10.0	1	11/11/2019 01:48	WG1378382
Isopropylbenzene	U		0.126	0.500	1	11/11/2019 01:48	WG1378382
p-Isopropyltoluene	U		0.138	0.500	1	11/11/2019 01:48	WG1378382
2-Butanone (MEK)	19.6		1.28	5.00	1	11/11/2019 01:48	WG1378382
Methylene Chloride	U		1.07	2.50	1	11/11/2019 01:48	WG1378382
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/11/2019 01:48	WG1378382
Methyl tert-butyl ether	U		0.102	0.500	1	11/11/2019 01:48	WG1378382
Naphthalene	U		0.174	2.50	1	11/11/2019 01:48	WG1378382
n-Propylbenzene	U		0.162	0.500	1	11/11/2019 01:48	WG1378382
Styrene	U		0.117	0.500	1	11/11/2019 01:48	WG1378382
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/11/2019 01:48	WG1378382
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/11/2019 01:48	WG1378382
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/11/2019 01:48	WG1378382
Tetrachloroethene	U		0.199	0.500	1	11/11/2019 01:48	WG1378382
Toluene	0.526		0.412	0.500	1	11/11/2019 01:48	WG1378382
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/11/2019 01:48	WG1378382
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/11/2019 01:48	WG1378382
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/11/2019 01:48	WG1378382
1,1,2-Trichloroethane	U		0.186	0.500	1	11/11/2019 01:48	WG1378382
Trichloroethene	0.467	U F	0.153	0.500	1	11/11/2019 01:48	WG1378382
Trichlorofluoromethane	U		0.130	2.50	1	11/11/2019 01:48	WG1378382
1,2,3-Trichloropropane	U		0.247	2.50	1	11/11/2019 01:48	WG1378382
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/11/2019 01:48	WG1378382
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/11/2019 01:48	WG1378382
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/11/2019 01:48	WG1378382

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 1/3/2020



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	UJ JO	0.645	5.00	1	11/11/2019 01:48	WG1378382
Vinyl chloride	1420		5.90	25.0	50	11/12/2019 15:20	WG1378635
Xylenes, Total	U		0.316	1.50	1	11/11/2019 01:48	WG1378382
(S) Toluene-d8	93.8			80.0-120		11/11/2019 01:48	WG1378382
(S) Toluene-d8	98.5			80.0-120		11/12/2019 15:20	WG1378635
(S) 4-Bromofluorobenzene	94.3			77.0-126		11/11/2019 01:48	WG1378382
(S) 4-Bromofluorobenzene	97.2			77.0-126		11/12/2019 15:20	WG1378635
(S) 1,2-Dichloroethane-d4	96.6			70.0-130		11/11/2019 01:48	WG1378382
(S) 1,2-Dichloroethane-d4	85.9			70.0-130		11/12/2019 15:20	WG1378635

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 1/3/2020



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	347000		2710	20000	1	11/11/2019 19:30	WG1376842

Sample Narrative:

L1157016-03 WG1376842: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	38100		51.9	1000	1	11/05/2019 17:29	WG1375176
Nitrate	U		22.7	100	1	11/05/2019 17:29	WG1375176
Sulfate	61900		77.4	5000	1	11/05/2019 17:29	WG1375176

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	19600		102	1000	1	11/07/2019 07:09	WG1376183

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	849		15.0	100	1	11/11/2019 17:57	WG1376698
Manganese	345		0.250	5.00	1	11/11/2019 17:57	WG1376698

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	11/10/2019 11:54	WG1378063
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120		11/10/2019 11:54	WG1378063

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	8580		2.87	6.78	10	11/08/2019 11:46	WG1377285
Ethane	25.7		0.296	1.29	1	11/07/2019 14:18	WG1376537
Ethene	121		0.422	1.27	1	11/07/2019 14:18	WG1376537

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	1120		5.25	125	5	11/12/2019 15:41	WG1378635
Acrylonitrile	U		0.873	5.00	1	11/11/2019 02:08	WG1378382
Benzene	U		0.0896	0.500	1	11/11/2019 02:08	WG1378382
Bromobenzene	U		0.133	0.500	1	11/11/2019 02:08	WG1378382
Bromodichloromethane	U		0.0800	0.500	1	11/11/2019 02:08	WG1378382
Bromochloromethane	U		0.145	0.500	1	11/11/2019 02:08	WG1378382
Bromoform	U		0.186	0.500	1	11/11/2019 02:08	WG1378382
Bromomethane	U	UJ JO	0.157	2.50	1	11/11/2019 02:08	WG1378382
n-Butylbenzene	U		0.143	0.500	1	11/11/2019 02:08	WG1378382
sec-Butylbenzene	U		0.134	0.500	1	11/11/2019 02:08	WG1378382
tert-Butylbenzene	U		0.183	0.500	1	11/11/2019 02:08	WG1378382
Carbon disulfide	1.15		0.101	0.500	1	11/11/2019 02:08	WG1378382
Carbon tetrachloride	U		0.159	0.500	1	11/11/2019 02:08	WG1378382

JC 1/3/2020

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	11/11/2019 02:08	WG1378382
Chlorodibromomethane	U		0.128	0.500	1	11/11/2019 02:08	WG1378382
Chloroethane	U		0.141	2.50	1	11/11/2019 02:08	WG1378382
Chloroform	0.131	J	0.0860	0.500	1	11/11/2019 02:08	WG1378382
Chloromethane	U	UJ JO	0.153	1.25	1	11/11/2019 02:08	WG1378382
2-Chlorotoluene	U		0.111	0.500	1	11/11/2019 02:08	WG1378382
4-Chlorotoluene	U		0.0972	0.500	1	11/11/2019 02:08	WG1378382
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/11/2019 02:08	WG1378382
1,2-Dibromoethane	U		0.193	0.500	1	11/11/2019 02:08	WG1378382
Dibromomethane	U		0.117	0.500	1	11/11/2019 02:08	WG1378382
1,2-Dichlorobenzene	U		0.101	0.500	1	11/11/2019 02:08	WG1378382
1,3-Dichlorobenzene	U		0.130	0.500	1	11/11/2019 02:08	WG1378382
1,4-Dichlorobenzene	U		0.121	0.500	1	11/11/2019 02:08	WG1378382
Dichlorodifluoromethane	U		0.127	2.50	1	11/11/2019 02:08	WG1378382
1,1-Dichloroethane	U		0.114	0.500	1	11/11/2019 02:08	WG1378382
1,2-Dichloroethane	U		0.108	0.500	1	11/11/2019 02:08	WG1378382
1,1-Dichloroethene	U		0.188	0.500	1	11/11/2019 02:08	WG1378382
cis-1,2-Dichloroethene	14.6		0.467	2.50	5	11/13/2019 07:37	WG1379454
trans-1,2-Dichloroethene	0.599		0.152	0.500	1	11/11/2019 02:08	WG1378382
1,2-Dichloropropane	U		0.190	0.500	1	11/11/2019 02:08	WG1378382
1,1-Dichloropropene	U		0.128	0.500	1	11/11/2019 02:08	WG1378382
1,3-Dichloropropane	U		0.147	1.00	1	11/11/2019 02:08	WG1378382
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/11/2019 02:08	WG1378382
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/11/2019 02:08	WG1378382
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/11/2019 02:08	WG1378382
2,2-Dichloropropane	U		0.0929	0.500	1	11/11/2019 02:08	WG1378382
Di-isopropyl ether	U		0.0924	0.500	1	11/11/2019 02:08	WG1378382
Ethylbenzene	U		0.158	0.500	1	11/11/2019 02:08	WG1378382
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/11/2019 02:08	WG1378382
2-Hexanone	U		0.757	5.00	1	11/11/2019 02:08	WG1378382
n-Hexane	U		0.305	5.00	1	11/11/2019 02:08	WG1378382
Iodomethane	U	UJ JO	0.377	10.0	1	11/11/2019 02:08	WG1378382
Isopropylbenzene	U		0.126	0.500	1	11/11/2019 02:08	WG1378382
p-Isopropyltoluene	U		0.138	0.500	1	11/11/2019 02:08	WG1378382
2-Butanone (MEK)	U		1.28	5.00	1	11/11/2019 02:08	WG1378382
Methylene Chloride	U		1.07	2.50	1	11/11/2019 02:08	WG1378382
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/11/2019 02:08	WG1378382
Methyl tert-butyl ether	U		0.102	0.500	1	11/11/2019 02:08	WG1378382
Naphthalene	U		0.174	2.50	1	11/11/2019 02:08	WG1378382
n-Propylbenzene	U		0.162	0.500	1	11/11/2019 02:08	WG1378382
Styrene	U		0.117	0.500	1	11/11/2019 02:08	WG1378382
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/11/2019 02:08	WG1378382
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/11/2019 02:08	WG1378382
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/11/2019 02:08	WG1378382
Tetrachloroethene	0.326	J	0.199	0.500	1	11/11/2019 02:08	WG1378382
Toluene	0.567		0.412	0.500	1	11/11/2019 02:08	WG1378382
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/11/2019 02:08	WG1378382
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/11/2019 02:08	WG1378382
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/11/2019 02:08	WG1378382
1,1,2-Trichloroethane	U		0.186	0.500	1	11/11/2019 02:08	WG1378382
Trichloroethene	0.297	U J	0.153	0.500	1	11/11/2019 02:08	WG1378382
Trichlorofluoromethane	U		0.130	2.50	1	11/11/2019 02:08	WG1378382
1,2,3-Trichloropropane	U		0.247	2.50	1	11/11/2019 02:08	WG1378382
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/11/2019 02:08	WG1378382
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/11/2019 02:08	WG1378382
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/11/2019 02:08	WG1378382

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 1/3/2020



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	UJ JO	0.645	5.00	1	11/11/2019 02:08	WG1378382
Vinyl chloride	17.3		0.590	2.50	5	11/12/2019 15:41	WG1378635
Xylenes, Total	U		0.316	1.50	1	11/11/2019 02:08	WG1378382
(S) Toluene-d8	91.2			80.0-120		11/11/2019 02:08	WG1378382
(S) Toluene-d8	96.4			80.0-120		11/12/2019 15:41	WG1378635
(S) Toluene-d8	96.3			80.0-120		11/13/2019 07:37	WG1379454
(S) 4-Bromofluorobenzene	91.6			77.0-126		11/11/2019 02:08	WG1378382
(S) 4-Bromofluorobenzene	96.7			77.0-126		11/12/2019 15:41	WG1378635
(S) 4-Bromofluorobenzene	101			77.0-126		11/13/2019 07:37	WG1379454
(S) 1,2-Dichloroethane-d4	92.1			70.0-130		11/11/2019 02:08	WG1378382
(S) 1,2-Dichloroethane-d4	86.7			70.0-130		11/12/2019 15:41	WG1378635
(S) 1,2-Dichloroethane-d4	98.8			70.0-130		11/13/2019 07:37	WG1379454

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 1/3/2020



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	221000		2710	20000	1	11/11/2019 19:38	WG1376842

Sample Narrative:

L1157016-04 WG1376842: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	11800		51.9	1000	1	11/05/2019 17:46	WG1375176
Nitrate	U		22.7	100	1	11/05/2019 17:46	WG1375176
Sulfate	12100		77.4	5000	1	11/05/2019 17:46	WG1375176

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2440	B	102	1000	1	11/07/2019 10:19	WG1376376

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	378		15.0	100	1	11/11/2019 18:00	WG1376698
Manganese	254		0.250	5.00	1	11/11/2019 18:00	WG1376698

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	65.0	U B J	31.6	100	1	11/10/2019 17:31	WG1378064
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	105			78.0-120		11/10/2019 17:31	WG1378064

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	U		0.287	0.678	1	11/07/2019 14:22	WG1376537
Ethane	U		0.296	1.29	1	11/07/2019 14:22	WG1376537
Ethene	U		0.422	1.27	1	11/07/2019 14:22	WG1376537

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	1.38	J	1.05	25.0	1	11/13/2019 18:51	WG1379440
Acrylonitrile	U		0.873	5.00	1	11/11/2019 02:28	WG1378382
Benzene	U		0.0896	0.500	1	11/11/2019 02:28	WG1378382
Bromobenzene	U		0.133	0.500	1	11/11/2019 02:28	WG1378382
Bromodichloromethane	U		0.0800	0.500	1	11/11/2019 02:28	WG1378382
Bromochloromethane	U		0.145	0.500	1	11/11/2019 02:28	WG1378382
Bromoform	U		0.186	0.500	1	11/11/2019 02:28	WG1378382
Bromomethane	U	UJ JO	0.157	2.50	1	11/11/2019 02:28	WG1378382
n-Butylbenzene	U		0.143	0.500	1	11/11/2019 02:28	WG1378382
sec-Butylbenzene	U		0.134	0.500	1	11/11/2019 02:28	WG1378382
tert-Butylbenzene	U		0.183	0.500	1	11/11/2019 02:28	WG1378382
Carbon disulfide	0.219	J	0.101	0.500	1	11/11/2019 02:28	WG1378382
Carbon tetrachloride	U		0.159	0.500	1	11/11/2019 02:28	WG1378382

JC 1/3/2020

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	11/11/2019 02:28	WG1378382
Chlorodibromomethane	U		0.128	0.500	1	11/11/2019 02:28	WG1378382
Chloroethane	U		0.141	2.50	1	11/11/2019 02:28	WG1378382
Chloroform	U		0.0860	0.500	1	11/11/2019 02:28	WG1378382
Chloromethane	U	UJ JO	0.153	1.25	1	11/11/2019 02:28	WG1378382
2-Chlorotoluene	U		0.111	0.500	1	11/11/2019 02:28	WG1378382
4-Chlorotoluene	U		0.0972	0.500	1	11/11/2019 02:28	WG1378382
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/11/2019 02:28	WG1378382
1,2-Dibromoethane	U		0.193	0.500	1	11/11/2019 02:28	WG1378382
Dibromomethane	U		0.117	0.500	1	11/11/2019 02:28	WG1378382
1,2-Dichlorobenzene	U		0.101	0.500	1	11/11/2019 02:28	WG1378382
1,3-Dichlorobenzene	U		0.130	0.500	1	11/11/2019 02:28	WG1378382
1,4-Dichlorobenzene	U		0.121	0.500	1	11/11/2019 02:28	WG1378382
Dichlorodifluoromethane	U		0.127	2.50	1	11/11/2019 02:28	WG1378382
1,1-Dichloroethane	U		0.114	0.500	1	11/11/2019 02:28	WG1378382
1,2-Dichloroethane	U		0.108	0.500	1	11/11/2019 02:28	WG1378382
1,1-Dichloroethene	U		0.188	0.500	1	11/11/2019 02:28	WG1378382
cis-1,2-Dichloroethene	U		0.0933	0.500	1	11/13/2019 18:51	WG1379440
trans-1,2-Dichloroethene	U		0.152	0.500	1	11/11/2019 02:28	WG1378382
1,2-Dichloropropane	U		0.190	0.500	1	11/11/2019 02:28	WG1378382
1,1-Dichloropropene	U		0.128	0.500	1	11/11/2019 02:28	WG1378382
1,3-Dichloropropane	U		0.147	1.00	1	11/11/2019 02:28	WG1378382
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/11/2019 02:28	WG1378382
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/11/2019 02:28	WG1378382
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/11/2019 02:28	WG1378382
2,2-Dichloropropane	U		0.0929	0.500	1	11/11/2019 02:28	WG1378382
Di-isopropyl ether	U		0.0924	0.500	1	11/11/2019 02:28	WG1378382
Ethylbenzene	U		0.158	0.500	1	11/11/2019 02:28	WG1378382
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/11/2019 02:28	WG1378382
2-Hexanone	U		0.757	5.00	1	11/11/2019 02:28	WG1378382
n-Hexane	U		0.305	5.00	1	11/11/2019 02:28	WG1378382
Iodomethane	U	UJ JO	0.377	10.0	1	11/11/2019 02:28	WG1378382
Isopropylbenzene	U		0.126	0.500	1	11/11/2019 02:28	WG1378382
p-Isopropyltoluene	U		0.138	0.500	1	11/11/2019 02:28	WG1378382
2-Butanone (MEK)	U		1.28	5.00	1	11/11/2019 02:28	WG1378382
Methylene Chloride	U		1.07	2.50	1	11/11/2019 02:28	WG1378382
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/11/2019 02:28	WG1378382
Methyl tert-butyl ether	U		0.102	0.500	1	11/11/2019 02:28	WG1378382
Naphthalene	U		0.174	2.50	1	11/11/2019 02:28	WG1378382
n-Propylbenzene	U		0.162	0.500	1	11/11/2019 02:28	WG1378382
Styrene	U		0.117	0.500	1	11/11/2019 02:28	WG1378382
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/11/2019 02:28	WG1378382
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/11/2019 02:28	WG1378382
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/11/2019 02:28	WG1378382
Tetrachloroethene	U		0.199	0.500	1	11/11/2019 02:28	WG1378382
Toluene	U		0.412	0.500	1	11/11/2019 02:28	WG1378382
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/11/2019 02:28	WG1378382
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/11/2019 02:28	WG1378382
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/11/2019 02:28	WG1378382
1,1,2-Trichloroethane	U		0.186	0.500	1	11/11/2019 02:28	WG1378382
Trichloroethene	U		0.153	0.500	1	11/11/2019 02:28	WG1378382
Trichlorofluoromethane	U		0.130	2.50	1	11/11/2019 02:28	WG1378382
1,2,3-Trichloropropane	U		0.247	2.50	1	11/11/2019 02:28	WG1378382
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/11/2019 02:28	WG1378382
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/11/2019 02:28	WG1378382
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/11/2019 02:28	WG1378382

JC 1/3/2020

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	11/11/2019 02:28	WG1378382
Vinyl chloride	U	UJ JO	0.118	0.500	1	11/11/2019 02:28	WG1378382
Xylenes, Total	U		0.316	1.50	1	11/11/2019 02:28	WG1378382
(S) Toluene-d8	92.1			80.0-120		11/11/2019 02:28	WG1378382
(S) Toluene-d8	96.2			80.0-120		11/13/2019 18:51	WG1379440
(S) 4-Bromofluorobenzene	95.4			77.0-126		11/11/2019 02:28	WG1378382
(S) 4-Bromofluorobenzene	95.7			77.0-126		11/13/2019 18:51	WG1379440
(S) 1,2-Dichloroethane-d4	97.0			70.0-130		11/11/2019 02:28	WG1378382
(S) 1,2-Dichloroethane-d4	93.8			70.0-130		11/13/2019 18:51	WG1379440

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 1/3/2020



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	213000		2710	20000	1	11/12/2019 21:14	WG1378816

Sample Narrative:

L1157450-01 WG1378816: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	31000		51.9	1000	1	11/06/2019 18:48	WG1375905
Nitrate	U		22.7	100	1	11/06/2019 18:48	WG1375905
Sulfate	22100		77.4	5000	1	11/06/2019 18:48	WG1375905

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3310	B	102	1000	1	11/07/2019 21:19	WG1377120

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	131		15.0	100	1	11/08/2019 11:22	WG1376699
Manganese	392		0.250	5.00	1	11/08/2019 11:22	WG1376699

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	4960	J+	31.6	100	1	11/10/2019 17:54	WG1378064
(S) a,a,a-Trifluorotoluene(FID)	106			78.0-120		11/10/2019 17:54	WG1378064

JC 1/6/2020

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	18.1		0.287	0.678	1	11/07/2019 15:33	WG1376537
Ethane	U		0.296	1.29	1	11/07/2019 15:33	WG1376537
Ethene	U		0.422	1.27	1	11/07/2019 15:33	WG1376537

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	1.97	U +	1.05	25.0	1	11/11/2019 02:47	WG1378382
Acrylonitrile	U		0.873	5.00	1	11/11/2019 02:47	WG1378382
Benzene	U		0.0896	0.500	1	11/11/2019 02:47	WG1378382
Bromobenzene	U		0.133	0.500	1	11/11/2019 02:47	WG1378382
Bromodichloromethane	U		0.0800	0.500	1	11/11/2019 02:47	WG1378382
Bromochloromethane	U		0.145	0.500	1	11/11/2019 02:47	WG1378382
Bromoform	U		0.186	0.500	1	11/11/2019 02:47	WG1378382
Bromomethane	U	UJ JO	0.157	2.50	1	11/11/2019 02:47	WG1378382
n-Butylbenzene	U		0.143	0.500	1	11/11/2019 02:47	WG1378382
sec-Butylbenzene	U		0.134	0.500	1	11/11/2019 02:47	WG1378382
tert-Butylbenzene	U		0.183	0.500	1	11/11/2019 02:47	WG1378382
Carbon disulfide	U		0.101	0.500	1	11/11/2019 02:47	WG1378382
Carbon tetrachloride	U		0.159	0.500	1	11/11/2019 02:47	WG1378382

JC 1/3/2020

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc



Collected date/time: 11/05/19 11:10

L1157450

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/11/2019 02:47	WG1378382
Chlorodibromomethane	U		0.128	0.500	1	11/11/2019 02:47	WG1378382
Chloroethane	U		0.141	2.50	1	11/11/2019 02:47	WG1378382
Chloroform	0.244	<u>J</u>	0.0860	0.500	1	11/11/2019 02:47	WG1378382
Chloromethane	U	<u>UJ</u> <u>JO</u>	0.153	1.25	1	11/11/2019 02:47	WG1378382
2-Chlorotoluene	U		0.111	0.500	1	11/11/2019 02:47	WG1378382
4-Chlorotoluene	U		0.0972	0.500	1	11/11/2019 02:47	WG1378382
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/11/2019 02:47	WG1378382
1,2-Dibromoethane	U		0.193	0.500	1	11/11/2019 02:47	WG1378382
Dibromomethane	U		0.117	0.500	1	11/11/2019 02:47	WG1378382
1,2-Dichlorobenzene	U		0.101	0.500	1	11/11/2019 02:47	WG1378382
1,3-Dichlorobenzene	U		0.130	0.500	1	11/11/2019 02:47	WG1378382
1,4-Dichlorobenzene	U		0.121	0.500	1	11/11/2019 02:47	WG1378382
Dichlorodifluoromethane	U		0.127	2.50	1	11/11/2019 02:47	WG1378382
1,1-Dichloroethane	0.305	<u>J</u>	0.114	0.500	1	11/11/2019 02:47	WG1378382
1,2-Dichloroethane	U		0.108	0.500	1	11/11/2019 02:47	WG1378382
1,1-Dichloroethene	32.0		0.188	0.500	1	11/11/2019 02:47	WG1378382
cis-1,2-Dichloroethene	643		9.33	50.0	100	11/12/2019 16:02	WG1378635
trans-1,2-Dichloroethene	22.8		0.152	0.500	1	11/11/2019 02:47	WG1378382
1,2-Dichloropropane	U		0.190	0.500	1	11/11/2019 02:47	WG1378382
1,1-Dichloropropene	U		0.128	0.500	1	11/11/2019 02:47	WG1378382
1,3-Dichloropropane	U		0.147	1.00	1	11/11/2019 02:47	WG1378382
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/11/2019 02:47	WG1378382
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/11/2019 02:47	WG1378382
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/11/2019 02:47	WG1378382
2,2-Dichloropropane	U		0.0929	0.500	1	11/11/2019 02:47	WG1378382
Di-isopropyl ether	U		0.0924	0.500	1	11/11/2019 02:47	WG1378382
Ethylbenzene	U		0.158	0.500	1	11/11/2019 02:47	WG1378382
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/11/2019 02:47	WG1378382
2-Hexanone	U		0.757	5.00	1	11/11/2019 02:47	WG1378382
n-Hexane	U		0.305	5.00	1	11/11/2019 02:47	WG1378382
Iodomethane	U	<u>UJ</u> <u>JO</u>	0.377	10.0	1	11/11/2019 02:47	WG1378382
Isopropylbenzene	U		0.126	0.500	1	11/11/2019 02:47	WG1378382
p-Isopropyltoluene	U		0.138	0.500	1	11/11/2019 02:47	WG1378382
2-Butanone (MEK)	U		1.28	5.00	1	11/11/2019 02:47	WG1378382
Methylene Chloride	U		1.07	2.50	1	11/11/2019 02:47	WG1378382
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/11/2019 02:47	WG1378382
Methyl tert-butyl ether	U		0.102	0.500	1	11/11/2019 02:47	WG1378382
Naphthalene	U		0.174	2.50	1	11/11/2019 02:47	WG1378382
n-Propylbenzene	U		0.162	0.500	1	11/11/2019 02:47	WG1378382
Styrene	U		0.117	0.500	1	11/11/2019 02:47	WG1378382
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/11/2019 02:47	WG1378382
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/11/2019 02:47	WG1378382
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/11/2019 02:47	WG1378382
Tetrachloroethene	8810		19.9	50.0	100	11/12/2019 16:02	WG1378635
Toluene	0.460	<u>J</u>	0.412	0.500	1	11/11/2019 02:47	WG1378382
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/11/2019 02:47	WG1378382
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/11/2019 02:47	WG1378382
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/11/2019 02:47	WG1378382
1,1,2-Trichloroethane	U		0.186	0.500	1	11/11/2019 02:47	WG1378382
Trichloroethene	3280		15.3	50.0	100	11/12/2019 16:02	WG1378635
Trichlorofluoromethane	U		0.130	2.50	1	11/11/2019 02:47	WG1378382
1,2,3-Trichloropropane	U		0.247	2.50	1	11/11/2019 02:47	WG1378382
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/11/2019 02:47	WG1378382
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/11/2019 02:47	WG1378382
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/11/2019 02:47	WG1378382

JC 1/3/2020

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	UJ JO	0.645	5.00	1	11/11/2019 02:47	WG1378382
Vinyl chloride	2.64		0.118	0.500	1	11/11/2019 02:47	WG1378382
Xylenes, Total	U		0.316	1.50	1	11/11/2019 02:47	WG1378382
(S) Toluene-d8	90.6			80.0-120		11/11/2019 02:47	WG1378382
(S) Toluene-d8	96.4			80.0-120		11/12/2019 16:02	WG1378635
(S) 4-Bromofluorobenzene	94.1			77.0-126		11/11/2019 02:47	WG1378382
(S) 4-Bromofluorobenzene	97.4			77.0-126		11/12/2019 16:02	WG1378635
(S) 1,2-Dichloroethane-d4	95.8			70.0-130		11/11/2019 02:47	WG1378382
(S) 1,2-Dichloroethane-d4	90.5			70.0-130		11/12/2019 16:02	WG1378635

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 1/3/2020



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	258000		2710	20000	1	11/12/2019 21:22	WG1378816

Sample Narrative:

L1157450-02 WG1378816: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	42100		51.9	1000	1	11/06/2019 19:23	WG1375905
Nitrate	93.6	J	22.7	100	1	11/06/2019 19:23	WG1375905
Sulfate	22000		77.4	5000	1	11/06/2019 19:23	WG1375905

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	10200		102	1000	1	11/07/2019 22:44	WG1377120

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	3630		15.0	100	1	11/08/2019 11:25	WG1376699
Manganese	190		0.250	5.00	1	11/08/2019 11:25	WG1376699

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	371	J+	31.6	100	1	11/10/2019 18:16	WG1378064
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120		11/10/2019 18:16	WG1378064

JC 1/6/2020

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	231		0.287	0.678	1	11/07/2019 15:40	WG1376537
Ethane	U		0.296	1.29	1	11/07/2019 15:40	WG1376537
Ethene	10.8		0.422	1.27	1	11/07/2019 15:40	WG1376537

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	1130		10.5	250	10	11/12/2019 16:23	WG1378635
Acrylonitrile	U		0.873	5.00	1	11/11/2019 03:07	WG1378382
Benzene	U		0.0896	0.500	1	11/11/2019 03:07	WG1378382
Bromobenzene	U		0.133	0.500	1	11/11/2019 03:07	WG1378382
Bromodichloromethane	U		0.0800	0.500	1	11/11/2019 03:07	WG1378382
Bromochloromethane	U		0.145	0.500	1	11/11/2019 03:07	WG1378382
Bromoform	U		0.186	0.500	1	11/11/2019 03:07	WG1378382
Bromomethane	U	UJ JO	0.157	2.50	1	11/11/2019 03:07	WG1378382
n-Butylbenzene	U		0.143	0.500	1	11/11/2019 03:07	WG1378382
sec-Butylbenzene	U		0.134	0.500	1	11/11/2019 03:07	WG1378382
tert-Butylbenzene	U		0.183	0.500	1	11/11/2019 03:07	WG1378382
Carbon disulfide	0.332	J	0.101	0.500	1	11/11/2019 03:07	WG1378382
Carbon tetrachloride	U		0.159	0.500	1	11/11/2019 03:07	WG1378382

JC 1/3/2020

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Collected date/time: 11/05/19 12:40

L1157450

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/11/2019 03:07	WG1378382
Chlorodibromomethane	U		0.128	0.500	1	11/11/2019 03:07	WG1378382
Chloroethane	U		0.141	2.50	1	11/11/2019 03:07	WG1378382
Chloroform	U		0.0860	0.500	1	11/11/2019 03:07	WG1378382
Chloromethane	U	UJ <u>JO</u>	0.153	1.25	1	11/11/2019 03:07	WG1378382
2-Chlorotoluene	U		0.111	0.500	1	11/11/2019 03:07	WG1378382
4-Chlorotoluene	U		0.0972	0.500	1	11/11/2019 03:07	WG1378382
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/11/2019 03:07	WG1378382
1,2-Dibromoethane	U		0.193	0.500	1	11/11/2019 03:07	WG1378382
Dibromomethane	U		0.117	0.500	1	11/11/2019 03:07	WG1378382
1,2-Dichlorobenzene	U		0.101	0.500	1	11/11/2019 03:07	WG1378382
1,3-Dichlorobenzene	U		0.130	0.500	1	11/11/2019 03:07	WG1378382
1,4-Dichlorobenzene	U		0.121	0.500	1	11/11/2019 03:07	WG1378382
Dichlorodifluoromethane	U		0.127	2.50	1	11/11/2019 03:07	WG1378382
1,1-Dichloroethane	U		0.114	0.500	1	11/11/2019 03:07	WG1378382
1,2-Dichloroethane	U		0.108	0.500	1	11/11/2019 03:07	WG1378382
1,1-Dichloroethene	0.923		0.188	0.500	1	11/11/2019 03:07	WG1378382
cis-1,2-Dichloroethene	509		0.933	5.00	10	11/12/2019 16:23	WG1378635
trans-1,2-Dichloroethene	1.47		0.152	0.500	1	11/11/2019 03:07	WG1378382
1,2-Dichloropropane	U		0.190	0.500	1	11/11/2019 03:07	WG1378382
1,1-Dichloropropene	U		0.128	0.500	1	11/11/2019 03:07	WG1378382
1,3-Dichloropropane	U		0.147	1.00	1	11/11/2019 03:07	WG1378382
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/11/2019 03:07	WG1378382
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/11/2019 03:07	WG1378382
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/11/2019 03:07	WG1378382
2,2-Dichloropropane	U		0.0929	0.500	1	11/11/2019 03:07	WG1378382
Di-isopropyl ether	U		0.0924	0.500	1	11/11/2019 03:07	WG1378382
Ethylbenzene	U		0.158	0.500	1	11/11/2019 03:07	WG1378382
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/11/2019 03:07	WG1378382
2-Hexanone	U		0.757	5.00	1	11/11/2019 03:07	WG1378382
n-Hexane	U		0.305	5.00	1	11/11/2019 03:07	WG1378382
Iodomethane	U	UJ <u>JO</u>	0.377	10.0	1	11/11/2019 03:07	WG1378382
Isopropylbenzene	U		0.126	0.500	1	11/11/2019 03:07	WG1378382
p-Isopropyltoluene	U		0.138	0.500	1	11/11/2019 03:07	WG1378382
2-Butanone (MEK)	1.34	<u>J</u>	1.28	5.00	1	11/11/2019 03:07	WG1378382
Methylene Chloride	U		1.07	2.50	1	11/11/2019 03:07	WG1378382
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/11/2019 03:07	WG1378382
Methyl tert-butyl ether	U		0.102	0.500	1	11/11/2019 03:07	WG1378382
Naphthalene	U		0.174	2.50	1	11/11/2019 03:07	WG1378382
n-Propylbenzene	U		0.162	0.500	1	11/11/2019 03:07	WG1378382
Styrene	U		0.117	0.500	1	11/11/2019 03:07	WG1378382
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/11/2019 03:07	WG1378382
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/11/2019 03:07	WG1378382
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/11/2019 03:07	WG1378382
Tetrachloroethene	U		1.99	5.00	10	11/12/2019 16:23	WG1378635
Toluene	0.497	<u>J</u>	0.412	0.500	1	11/11/2019 03:07	WG1378382
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/11/2019 03:07	WG1378382
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/11/2019 03:07	WG1378382
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/11/2019 03:07	WG1378382
1,1,2-Trichloroethane	U		0.186	0.500	1	11/11/2019 03:07	WG1378382
Trichloroethene	U		1.53	5.00	10	11/12/2019 16:23	WG1378635
Trichlorofluoromethane	U		0.130	2.50	1	11/11/2019 03:07	WG1378382
1,2,3-Trichloropropane	U		0.247	2.50	1	11/11/2019 03:07	WG1378382
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/11/2019 03:07	WG1378382
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/11/2019 03:07	WG1378382
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/11/2019 03:07	WG1378382

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 1/3/2020



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U	UJ JO	0.645	5.00	1	11/11/2019 03:07	WG1378382
Vinyl chloride	13.3		0.118	0.500	1	11/11/2019 03:07	WG1378382
Xylenes, Total	U		0.316	1.50	1	11/11/2019 03:07	WG1378382
(S) Toluene-d8	93.0			80.0-120		11/11/2019 03:07	WG1378382
(S) Toluene-d8	97.3			80.0-120		11/12/2019 16:23	WG1378635
(S) 4-Bromofluorobenzene	95.8			77.0-126		11/11/2019 03:07	WG1378382
(S) 4-Bromofluorobenzene	100			77.0-126		11/12/2019 16:23	WG1378635
(S) 1,2-Dichloroethane-d4	96.6			70.0-130		11/11/2019 03:07	WG1378382
(S) 1,2-Dichloroethane-d4	90.9			70.0-130		11/12/2019 16:23	WG1378635

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Sample Narrative:

L1157450-02 WG1378635, WG1378382: Cannot be re-analyzed at lower dilution due to high levels of target analytes.
 L1157450-02 WG1378635, WG1378382: Not all compounds reportable at lower dilution.

JC 1/3/2020



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	577000		2710	20000	1	11/12/2019 21:30	WG1378816

Sample Narrative:

L1157450-03 WG1378816: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	149000		260	5000	5	11/06/2019 20:16	WG1375905
Nitrate	U		22.7	100	1	11/06/2019 19:58	WG1375905
Sulfate	333	J	77.4	5000	1	11/06/2019 19:58	WG1375905

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	19900		102	1000	1	11/07/2019 23:38	WG1377120

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	6150		15.0	100	1	11/08/2019 11:29	WG1376699
Manganese	832		0.250	5.00	1	11/08/2019 11:29	WG1376699

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	83.4	U	31.6	100	1	11/10/2019 18:39	WG1378064
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120		11/10/2019 18:39	WG1378064

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	19600		2.87	6.78	10	11/08/2019 13:04	WG1377285
Ethane	299		0.296	1.29	1	11/07/2019 15:56	WG1376537
Ethene	883		0.422	1.27	1	11/07/2019 15:56	WG1376537

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	11.7	U	1.05	25.0	1	11/11/2019 03:26	WG1378382
Acrylonitrile	U		0.873	5.00	1	11/11/2019 03:26	WG1378382
Benzene	0.130	J	0.0896	0.500	1	11/11/2019 03:26	WG1378382
Bromobenzene	U		0.133	0.500	1	11/11/2019 03:26	WG1378382
Bromodichloromethane	U		0.0800	0.500	1	11/11/2019 03:26	WG1378382
Bromochloromethane	U		0.145	0.500	1	11/11/2019 03:26	WG1378382
Bromoform	U		0.186	0.500	1	11/11/2019 03:26	WG1378382
Bromomethane	U	UJ	0.157	2.50	1	11/11/2019 03:26	WG1378382
n-Butylbenzene	U		0.143	0.500	1	11/11/2019 03:26	WG1378382
sec-Butylbenzene	U		0.134	0.500	1	11/11/2019 03:26	WG1378382
tert-Butylbenzene	U		0.183	0.500	1	11/11/2019 03:26	WG1378382
Carbon disulfide	0.962		0.101	0.500	1	11/11/2019 03:26	WG1378382
Carbon tetrachloride	U		0.159	0.500	1	11/11/2019 03:26	WG1378382

JC 1/3/2020

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Collected date/time: 11/05/19 14:00

L1157450

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/11/2019 03:26	WG1378382
Chlorodibromomethane	U		0.128	0.500	1	11/11/2019 03:26	WG1378382
Chloroethane	U		0.141	2.50	1	11/11/2019 03:26	WG1378382
Chloroform	U		0.0860	0.500	1	11/11/2019 03:26	WG1378382
Chloromethane	U	UJ JO	0.153	1.25	1	11/11/2019 03:26	WG1378382
2-Chlorotoluene	U		0.111	0.500	1	11/11/2019 03:26	WG1378382
4-Chlorotoluene	U		0.0972	0.500	1	11/11/2019 03:26	WG1378382
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/11/2019 03:26	WG1378382
1,2-Dibromoethane	U		0.193	0.500	1	11/11/2019 03:26	WG1378382
Dibromomethane	U		0.117	0.500	1	11/11/2019 03:26	WG1378382
1,2-Dichlorobenzene	U		0.101	0.500	1	11/11/2019 03:26	WG1378382
1,3-Dichlorobenzene	U		0.130	0.500	1	11/11/2019 03:26	WG1378382
1,4-Dichlorobenzene	U		0.121	0.500	1	11/11/2019 03:26	WG1378382
Dichlorodifluoromethane	U		0.127	2.50	1	11/11/2019 03:26	WG1378382
1,1-Dichloroethane	U		0.114	0.500	1	11/11/2019 03:26	WG1378382
1,2-Dichloroethane	U		0.108	0.500	1	11/11/2019 03:26	WG1378382
1,1-Dichloroethene	0.197	J	0.188	0.500	1	11/11/2019 03:26	WG1378382
cis-1,2-Dichloroethene	48.8		0.0933	0.500	1	11/11/2019 03:26	WG1378382
trans-1,2-Dichloroethene	11.9		0.152	0.500	1	11/11/2019 03:26	WG1378382
1,2-Dichloropropane	U		0.190	0.500	1	11/11/2019 03:26	WG1378382
1,1-Dichloropropene	U		0.128	0.500	1	11/11/2019 03:26	WG1378382
1,3-Dichloropropane	U		0.147	1.00	1	11/11/2019 03:26	WG1378382
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/11/2019 03:26	WG1378382
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/11/2019 03:26	WG1378382
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/11/2019 03:26	WG1378382
2,2-Dichloropropane	U		0.0929	0.500	1	11/11/2019 03:26	WG1378382
Di-isopropyl ether	U		0.0924	0.500	1	11/11/2019 03:26	WG1378382
Ethylbenzene	U		0.158	0.500	1	11/11/2019 03:26	WG1378382
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/11/2019 03:26	WG1378382
2-Hexanone	U		0.757	5.00	1	11/11/2019 03:26	WG1378382
n-Hexane	U		0.305	5.00	1	11/11/2019 03:26	WG1378382
Iodomethane	U	UJ JO	0.377	10.0	1	11/11/2019 03:26	WG1378382
Isopropylbenzene	U		0.126	0.500	1	11/11/2019 03:26	WG1378382
p-Isopropyltoluene	U		0.138	0.500	1	11/11/2019 03:26	WG1378382
2-Butanone (MEK)	U		1.28	5.00	1	11/11/2019 03:26	WG1378382
Methylene Chloride	U		1.07	2.50	1	11/11/2019 03:26	WG1378382
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/11/2019 03:26	WG1378382
Methyl tert-butyl ether	U		0.102	0.500	1	11/11/2019 03:26	WG1378382
Naphthalene	U		0.174	2.50	1	11/11/2019 03:26	WG1378382
n-Propylbenzene	U		0.162	0.500	1	11/11/2019 03:26	WG1378382
Styrene	U		0.117	0.500	1	11/11/2019 03:26	WG1378382
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/11/2019 03:26	WG1378382
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/11/2019 03:26	WG1378382
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/11/2019 03:26	WG1378382
Tetrachloroethene	2.72		0.199	0.500	1	11/11/2019 03:26	WG1378382
Toluene	U		0.412	0.500	1	11/11/2019 03:26	WG1378382
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/11/2019 03:26	WG1378382
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/11/2019 03:26	WG1378382
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/11/2019 03:26	WG1378382
1,1,2-Trichloroethane	U		0.186	0.500	1	11/11/2019 03:26	WG1378382
Trichloroethene	1.15		0.153	0.500	1	11/11/2019 03:26	WG1378382
Trichlorofluoromethane	U		0.130	2.50	1	11/11/2019 03:26	WG1378382
1,2,3-Trichloropropane	U		0.247	2.50	1	11/11/2019 03:26	WG1378382
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/11/2019 03:26	WG1378382
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/11/2019 03:26	WG1378382
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/11/2019 03:26	WG1378382

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

JC 1/3/2020



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U	UJ JO	0.645	5.00	1	11/11/2019 03:26	WG1378382
Vinyl chloride	1500		59.0	250	500	11/12/2019 16:44	WG1378635
Xylenes, Total	U		0.316	1.50	1	11/11/2019 03:26	WG1378382
(S) Toluene-d8	93.3			80.0-120		11/11/2019 03:26	WG1378382
(S) Toluene-d8	100			80.0-120		11/12/2019 16:44	WG1378635
(S) 4-Bromofluorobenzene	93.6			77.0-126		11/11/2019 03:26	WG1378382
(S) 4-Bromofluorobenzene	95.7			77.0-126		11/12/2019 16:44	WG1378635
(S) 1,2-Dichloroethane-d4	96.2			70.0-130		11/11/2019 03:26	WG1378382
(S) 1,2-Dichloroethane-d4	92.9			70.0-130		11/12/2019 16:44	WG1378635

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 1/3/2020



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	506000		2710	20000	1	11/12/2019 21:38	WG1378816

Sample Narrative:

L1157450-04 WG1378816: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	178000		260	5000	5	11/06/2019 21:26	WG1375905
Nitrate	U		22.7	100	1	11/06/2019 20:33	WG1375905
Sulfate	112000		387	25000	5	11/06/2019 21:26	WG1375905

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	22900		102	1000	1	11/07/2019 23:56	WG1377120

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	1870		15.0	100	1	11/08/2019 11:32	WG1376699
Manganese	947		0.250	5.00	1	11/08/2019 11:32	WG1376699

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	22700	J+	316	1000	10	11/14/2019 01:20	WG1380099
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120		11/14/2019 01:20	WG1380099

JC 1/6/2020

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	10000		2.87	6.78	10	11/08/2019 13:10	WG1377285
Ethane	62.0		0.296	1.29	1	11/07/2019 16:00	WG1376537
Ethene	1120		0.422	1.27	1	11/07/2019 16:00	WG1376537

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	8.46	U J	1.05	25.0	1	11/11/2019 03:46	WG1378382
Acrylonitrile	U		0.873	5.00	1	11/11/2019 03:46	WG1378382
Benzene	0.269	J	0.0896	0.500	1	11/11/2019 03:46	WG1378382
Bromobenzene	U		0.133	0.500	1	11/11/2019 03:46	WG1378382
Bromodichloromethane	U		0.0800	0.500	1	11/11/2019 03:46	WG1378382
Bromochloromethane	U		0.145	0.500	1	11/11/2019 03:46	WG1378382
Bromoform	U		0.186	0.500	1	11/11/2019 03:46	WG1378382
Bromomethane	U	UJ JO	0.157	2.50	1	11/11/2019 03:46	WG1378382
n-Butylbenzene	U		0.143	0.500	1	11/11/2019 03:46	WG1378382
sec-Butylbenzene	U		0.134	0.500	1	11/11/2019 03:46	WG1378382
tert-Butylbenzene	U		0.183	0.500	1	11/11/2019 03:46	WG1378382
Carbon disulfide	U		0.101	0.500	1	11/11/2019 03:46	WG1378382
Carbon tetrachloride	U		0.159	0.500	1	11/11/2019 03:46	WG1378382

JC 1/3/2020

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/11/2019 03:46	WG1378382
Chlorodibromomethane	U		0.128	0.500	1	11/11/2019 03:46	WG1378382
Chloroethane	U		0.141	2.50	1	11/11/2019 03:46	WG1378382
Chloroform	U		0.0860	0.500	1	11/11/2019 03:46	WG1378382
Chloromethane	U	UJ JO	0.153	1.25	1	11/11/2019 03:46	WG1378382
2-Chlorotoluene	U		0.111	0.500	1	11/11/2019 03:46	WG1378382
4-Chlorotoluene	U		0.0972	0.500	1	11/11/2019 03:46	WG1378382
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/11/2019 03:46	WG1378382
1,2-Dibromoethane	U		0.193	0.500	1	11/11/2019 03:46	WG1378382
Dibromomethane	U		0.117	0.500	1	11/11/2019 03:46	WG1378382
1,2-Dichlorobenzene	U		0.101	0.500	1	11/11/2019 03:46	WG1378382
1,3-Dichlorobenzene	U		0.130	0.500	1	11/11/2019 03:46	WG1378382
1,4-Dichlorobenzene	U		0.121	0.500	1	11/11/2019 03:46	WG1378382
Dichlorodifluoromethane	U		0.127	2.50	1	11/11/2019 03:46	WG1378382
1,1-Dichloroethane	U		0.114	0.500	1	11/11/2019 03:46	WG1378382
1,2-Dichloroethane	U		0.108	0.500	1	11/11/2019 03:46	WG1378382
1,1-Dichloroethene	73.1		0.188	0.500	1	11/11/2019 03:46	WG1378382
cis-1,2-Dichloroethene	27600		18.7	100	200	11/12/2019 17:05	WG1378635
trans-1,2-Dichloroethene	172		30.4	100	200	11/12/2019 17:05	WG1378635
1,2-Dichloropropane	U		0.190	0.500	1	11/11/2019 03:46	WG1378382
1,1-Dichloropropene	U		0.128	0.500	1	11/11/2019 03:46	WG1378382
1,3-Dichloropropane	U		0.147	1.00	1	11/11/2019 03:46	WG1378382
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/11/2019 03:46	WG1378382
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/11/2019 03:46	WG1378382
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	11/11/2019 03:46	WG1378382
2,2-Dichloropropane	U		0.0929	0.500	1	11/11/2019 03:46	WG1378382
Di-isopropyl ether	U		0.0924	0.500	1	11/11/2019 03:46	WG1378382
Ethylbenzene	U		0.158	0.500	1	11/11/2019 03:46	WG1378382
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/11/2019 03:46	WG1378382
2-Hexanone	U		0.757	5.00	1	11/11/2019 03:46	WG1378382
n-Hexane	U		0.305	5.00	1	11/11/2019 03:46	WG1378382
Iodomethane	U	UJ JO	0.377	10.0	1	11/11/2019 03:46	WG1378382
Isopropylbenzene	U		0.126	0.500	1	11/11/2019 03:46	WG1378382
p-Isopropyltoluene	U		0.138	0.500	1	11/11/2019 03:46	WG1378382
2-Butanone (MEK)	U		1.28	5.00	1	11/11/2019 03:46	WG1378382
Methylene Chloride	U		1.07	2.50	1	11/11/2019 03:46	WG1378382
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/11/2019 03:46	WG1378382
Methyl tert-butyl ether	U		0.102	0.500	1	11/11/2019 03:46	WG1378382
Naphthalene	U		0.174	2.50	1	11/11/2019 03:46	WG1378382
n-Propylbenzene	U		0.162	0.500	1	11/11/2019 03:46	WG1378382
Styrene	U		0.117	0.500	1	11/11/2019 03:46	WG1378382
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/11/2019 03:46	WG1378382
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/11/2019 03:46	WG1378382
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/11/2019 03:46	WG1378382
Tetrachloroethene	105		0.199	0.500	1	11/11/2019 03:46	WG1378382
Toluene	0.916		0.412	0.500	1	11/11/2019 03:46	WG1378382
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/11/2019 03:46	WG1378382
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/11/2019 03:46	WG1378382
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/11/2019 03:46	WG1378382
1,1,2-Trichloroethane	U		0.186	0.500	1	11/11/2019 03:46	WG1378382
Trichloroethene	125		0.153	0.500	1	11/11/2019 03:46	WG1378382
Trichlorofluoromethane	U		0.130	2.50	1	11/11/2019 03:46	WG1378382
1,2,3-Trichloropropane	U		0.247	2.50	1	11/11/2019 03:46	WG1378382
1,2,4-Trimethylbenzene	0.437		0.123	0.500	1	11/11/2019 03:46	WG1378382
1,2,3-Trimethylbenzene	0.315		0.0739	0.500	1	11/11/2019 03:46	WG1378382
1,3,5-Trimethylbenzene	0.154		0.124	0.500	1	11/11/2019 03:46	WG1378382

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 1/3/2020



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	UJ JO	0.645	5.00	1	11/11/2019 03:46	WG1378382
Vinyl chloride	6710		23.6	100	200	11/12/2019 17:05	WG1378635
Xylenes, Total	0.796	J	0.316	1.50	1	11/11/2019 03:46	WG1378382
(S) Toluene-d8	93.5			80.0-120		11/11/2019 03:46	WG1378382
(S) Toluene-d8	94.9			80.0-120		11/12/2019 17:05	WG1378635
(S) 4-Bromofluorobenzene	94.6			77.0-126		11/11/2019 03:46	WG1378382
(S) 4-Bromofluorobenzene	93.8			77.0-126		11/12/2019 17:05	WG1378635
(S) 1,2-Dichloroethane-d4	95.3			70.0-130		11/11/2019 03:46	WG1378382
(S) 1,2-Dichloroethane-d4	89.8			70.0-130		11/12/2019 17:05	WG1378635

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 1/3/2020



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	582000		2710	20000	1	11/14/2019 01:30	WG1379400

Sample Narrative:

L1158133-01 WG1379400: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	276000		519	10000	10	11/08/2019 06:19	WG1376738
Nitrate	U		22.7	100	1	11/08/2019 06:01	WG1376738
Sulfate	96200		77.4	5000	1	11/08/2019 06:01	WG1376738

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	56300		102	1000	1	11/10/2019 02:03	WG1378047

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	32200		300	2000	20	11/11/2019 19:18	WG1377945
Manganese	4130		5.00	100	20	11/11/2019 19:18	WG1377945

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	127000	J+	3160	10000	100	11/14/2019 07:55	WG1380099
(S) a,a,a-Trifluorotoluene(FID)	104			78.0-120		11/14/2019 07:55	WG1380099

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	20800		2.87	6.78	10	11/12/2019 13:33	WG1378754
Ethane	17.8		0.296	1.29	1	11/11/2019 14:07	WG1378445
Ethene	3730		0.422	1.27	1	11/11/2019 14:07	WG1378445

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	14.1	U	1.05	25.0	1	11/15/2019 23:48	WG1381516
Acrylonitrile	U		0.873	5.00	1	11/15/2019 23:48	WG1381516
Benzene	0.721		0.0896	0.500	1	11/15/2019 23:48	WG1381516
Bromobenzene	U		0.133	0.500	1	11/15/2019 23:48	WG1381516
Bromodichloromethane	U		0.0800	0.500	1	11/15/2019 23:48	WG1381516
Bromochloromethane	U		0.145	0.500	1	11/15/2019 23:48	WG1381516
Bromoform	U		0.186	0.500	1	11/15/2019 23:48	WG1381516
Bromomethane	U		157	2500	1000	11/19/2019 13:40	WG1382748
n-Butylbenzene	U		0.143	0.500	1	11/15/2019 23:48	WG1381516
sec-Butylbenzene	0.161	J	0.134	0.500	1	11/15/2019 23:48	WG1381516
tert-Butylbenzene	U		0.183	0.500	1	11/15/2019 23:48	WG1381516
Carbon disulfide	27.8	J	0.101	0.500	1	11/15/2019 23:48	WG1381516
Carbon tetrachloride	U		0.159	0.500	1	11/15/2019 23:48	WG1381516

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 11/06/19 09:00

L1158133

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/15/2019 23:48	WG1381516
Chlorodibromomethane	U		0.128	0.500	1	11/15/2019 23:48	WG1381516
Chloroethane	6.29	J	0.141	2.50	1	11/15/2019 23:48	WG1381516
Chloroform	U		0.0860	0.500	1	11/15/2019 23:48	WG1381516
Chloromethane	U		0.153	1.25	1	11/15/2019 23:48	WG1381516
2-Chlorotoluene	U		0.111	0.500	1	11/15/2019 23:48	WG1381516
4-Chlorotoluene	U		0.0972	0.500	1	11/15/2019 23:48	WG1381516
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/15/2019 23:48	WG1381516
1,2-Dibromoethane	U		0.193	0.500	1	11/15/2019 23:48	WG1381516
Dibromomethane	U		0.117	0.500	1	11/15/2019 23:48	WG1381516
1,2-Dichlorobenzene	U		0.101	0.500	1	11/15/2019 23:48	WG1381516
1,3-Dichlorobenzene	U		0.130	0.500	1	11/15/2019 23:48	WG1381516
1,4-Dichlorobenzene	U		0.121	0.500	1	11/15/2019 23:48	WG1381516
Dichlorodifluoromethane	U		0.127	2.50	1	11/15/2019 23:48	WG1381516
1,1-Dichloroethane	U		0.114	0.500	1	11/15/2019 23:48	WG1381516
1,2-Dichloroethane	U		0.108	0.500	1	11/15/2019 23:48	WG1381516
1,1-Dichloroethene	258	J E	0.188	0.500	1	11/15/2019 23:48	WG1381516
cis-1,2-Dichloroethene	93100	J	93.3	500	1000	11/19/2019 13:40	WG1382748
trans-1,2-Dichloroethene	200	J	152	500	1000	11/19/2019 13:40	WG1382748
1,2-Dichloropropane	U		0.190	0.500	1	11/15/2019 23:48	WG1381516
1,1-Dichloropropene	U		0.128	0.500	1	11/15/2019 23:48	WG1381516
1,3-Dichloropropane	U		0.147	1.00	1	11/15/2019 23:48	WG1381516
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/15/2019 23:48	WG1381516
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/15/2019 23:48	WG1381516
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	11/15/2019 23:48	WG1381516
2,2-Dichloropropane	U		0.0929	0.500	1	11/15/2019 23:48	WG1381516
Di-isopropyl ether	U		0.0924	0.500	1	11/15/2019 23:48	WG1381516
Ethylbenzene	0.510		0.158	0.500	1	11/15/2019 23:48	WG1381516
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/15/2019 23:48	WG1381516
2-Hexanone	U		0.757	5.00	1	11/15/2019 23:48	WG1381516
n-Hexane	U		0.305	5.00	1	11/15/2019 23:48	WG1381516
Iodomethane	U	UJ JO	0.377	10.0	1	11/15/2019 23:48	WG1381516
Isopropylbenzene	0.180	J	0.126	0.500	1	11/15/2019 23:48	WG1381516
p-Isopropyltoluene	U		0.138	0.500	1	11/15/2019 23:48	WG1381516
2-Butanone (MEK)	9.49		1.28	5.00	1	11/15/2019 23:48	WG1381516
Methylene Chloride	U		1.07	2.50	1	11/15/2019 23:48	WG1381516
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/15/2019 23:48	WG1381516
Methyl tert-butyl ether	U		0.102	0.500	1	11/15/2019 23:48	WG1381516
Naphthalene	0.677	J	0.174	2.50	1	11/15/2019 23:48	WG1381516
n-Propylbenzene	0.558		0.162	0.500	1	11/15/2019 23:48	WG1381516
Styrene	U		0.117	0.500	1	11/15/2019 23:48	WG1381516
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/15/2019 23:48	WG1381516
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/15/2019 23:48	WG1381516
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/15/2019 23:48	WG1381516
Tetrachloroethene	1910	J	199	500	1000	11/19/2019 13:40	WG1382748
Toluene	4.14		0.412	0.500	1	11/15/2019 23:48	WG1381516
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/15/2019 23:48	WG1381516
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/15/2019 23:48	WG1381516
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/15/2019 23:48	WG1381516
1,1,2-Trichloroethane	U		0.186	0.500	1	11/15/2019 23:48	WG1381516
Trichloroethene	1120	J	153	500	1000	11/19/2019 13:40	WG1382748
Trichlorofluoromethane	U		0.130	2.50	1	11/15/2019 23:48	WG1381516
1,2,3-Trichloropropane	U	UJ JO	247	2500	1000	11/19/2019 13:40	WG1382748
1,2,4-Trimethylbenzene	3.88		0.123	0.500	1	11/15/2019 23:48	WG1381516
1,2,3-Trimethylbenzene	1.88		0.0739	0.500	1	11/15/2019 23:48	WG1381516
1,3,5-Trimethylbenzene	1.24		0.124	0.500	1	11/15/2019 23:48	WG1381516

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	11/15/2019 23:48	WG1381516
Vinyl chloride	5470	J	118	500	1000	11/19/2019 13:40	WG1382748
Xylenes, Total	2.76		0.316	1.50	1	11/15/2019 23:48	WG1381516
(S) Toluene-d8	94.7			80.0-120		11/15/2019 23:48	WG1381516
(S) Toluene-d8	112			80.0-120		11/19/2019 13:40	WG1382748
(S) 4-Bromofluorobenzene	97.8			77.0-126		11/15/2019 23:48	WG1381516
(S) 4-Bromofluorobenzene	109			77.0-126		11/19/2019 13:40	WG1382748
(S) 1,2-Dichloroethane-d4	105			70.0-130		11/15/2019 23:48	WG1381516
(S) 1,2-Dichloroethane-d4	107			70.0-130		11/19/2019 13:40	WG1382748

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Sample Narrative:

L1158133-01 WG1381516, WG1382748: Not all compounds reportable at lower dilution.

L1158133-01 WG1381516, WG1382748: Cannot be re-analyzed at lower dilution due to high levels of target analytes.

JC 1/6/2020

JC 1/3/2020



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	940000		2710	20000	1	11/14/2019 01:37	WG1379400

Sample Narrative:

L1158133-02 WG1379400: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	50800		51.9	1000	1	11/07/2019 22:25	WG1376795
Nitrate	U		22.7	100	1	11/07/2019 22:25	WG1376795
Sulfate	86800		77.4	5000	1	11/07/2019 22:25	WG1376795

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	193000		510	5000	5	11/10/2019 02:23	WG1378047

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	17700		15.0	100	1	11/10/2019 21:18	WG1377945
Manganese	15700		0.250	5.00	1	11/10/2019 21:18	WG1377945

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	220	J+	31.6	100	1	11/14/2019 08:50	WG1380099
(S) a,a,a-Trifluorotoluene(FID)	104			78.0-120		11/14/2019 08:50	WG1380099

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	6310		0.287	0.678	1	11/11/2019 14:11	WG1378445
Ethane	U		0.296	1.29	1	11/11/2019 14:11	WG1378445
Ethene	49.2		0.422	1.27	1	11/11/2019 14:11	WG1378445

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	12.0	U	1.05	25.0	1	11/16/2019 00:08	WG1381516
Acrylonitrile	U		0.873	5.00	1	11/16/2019 00:08	WG1381516
Benzene	U		0.0896	0.500	1	11/16/2019 00:08	WG1381516
Bromobenzene	U		0.133	0.500	1	11/16/2019 00:08	WG1381516
Bromodichloromethane	U		0.0800	0.500	1	11/16/2019 00:08	WG1381516
Bromochloromethane	U		0.145	0.500	1	11/16/2019 00:08	WG1381516
Bromoform	U		0.186	0.500	1	11/16/2019 00:08	WG1381516
Bromomethane	U		0.785	12.5	5	11/19/2019 14:00	WG1382748
n-Butylbenzene	U		0.143	0.500	1	11/16/2019 00:08	WG1381516
sec-Butylbenzene	U		0.134	0.500	1	11/16/2019 00:08	WG1381516
tert-Butylbenzene	U		0.183	0.500	1	11/16/2019 00:08	WG1381516
Carbon disulfide	3.81		0.101	0.500	1	11/16/2019 00:08	WG1381516
Carbon tetrachloride	U		0.159	0.500	1	11/16/2019 00:08	WG1381516

JC 1/3/2020

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Collected date/time: 11/06/19 10:00

L1158133

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	11/16/2019 00:08	WG1381516
Chlorodibromomethane	U		0.128	0.500	1	11/16/2019 00:08	WG1381516
Chloroethane	U		0.141	2.50	1	11/16/2019 00:08	WG1381516
Chloroform	U		0.0860	0.500	1	11/16/2019 00:08	WG1381516
Chloromethane	U		0.153	1.25	1	11/16/2019 00:08	WG1381516
2-Chlorotoluene	U		0.111	0.500	1	11/16/2019 00:08	WG1381516
4-Chlorotoluene	U		0.0972	0.500	1	11/16/2019 00:08	WG1381516
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/16/2019 00:08	WG1381516
1,2-Dibromoethane	U		0.193	0.500	1	11/16/2019 00:08	WG1381516
Dibromomethane	U		0.117	0.500	1	11/16/2019 00:08	WG1381516
1,2-Dichlorobenzene	U		0.101	0.500	1	11/16/2019 00:08	WG1381516
1,3-Dichlorobenzene	U		0.130	0.500	1	11/16/2019 00:08	WG1381516
1,4-Dichlorobenzene	U		0.121	0.500	1	11/16/2019 00:08	WG1381516
Dichlorodifluoromethane	U		0.127	2.50	1	11/16/2019 00:08	WG1381516
1,1-Dichloroethane	U		0.114	0.500	1	11/16/2019 00:08	WG1381516
1,2-Dichloroethane	U		0.108	0.500	1	11/16/2019 00:08	WG1381516
1,1-Dichloroethene	U		0.940	2.50	5	11/19/2019 14:00	WG1382748
cis-1,2-Dichloroethene	155		0.467	2.50	5	11/19/2019 14:00	WG1382748
trans-1,2-Dichloroethene	U		0.760	2.50	5	11/19/2019 14:00	WG1382748
1,2-Dichloropropane	U		0.190	0.500	1	11/16/2019 00:08	WG1381516
1,1-Dichloropropene	U		0.128	0.500	1	11/16/2019 00:08	WG1381516
1,3-Dichloropropane	U		0.147	1.00	1	11/16/2019 00:08	WG1381516
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/16/2019 00:08	WG1381516
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/16/2019 00:08	WG1381516
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	11/16/2019 00:08	WG1381516
2,2-Dichloropropane	U		0.0929	0.500	1	11/16/2019 00:08	WG1381516
Di-isopropyl ether	U		0.0924	0.500	1	11/16/2019 00:08	WG1381516
Ethylbenzene	0.247	U	0.158	0.500	1	11/16/2019 00:08	WG1381516
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/16/2019 00:08	WG1381516
2-Hexanone	U		0.757	5.00	1	11/16/2019 00:08	WG1381516
n-Hexane	U		0.305	5.00	1	11/16/2019 00:08	WG1381516
Iodomethane	U	UJ JO	0.377	10.0	1	11/16/2019 00:08	WG1381516
Isopropylbenzene	U		0.126	0.500	1	11/16/2019 00:08	WG1381516
p-Isopropyltoluene	U		0.138	0.500	1	11/16/2019 00:08	WG1381516
2-Butanone (MEK)	55.1		1.28	5.00	1	11/16/2019 00:08	WG1381516
Methylene Chloride	U		1.07	2.50	1	11/16/2019 00:08	WG1381516
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/16/2019 00:08	WG1381516
Methyl tert-butyl ether	U		0.102	0.500	1	11/16/2019 00:08	WG1381516
Naphthalene	U		0.174	2.50	1	11/16/2019 00:08	WG1381516
n-Propylbenzene	U		0.162	0.500	1	11/16/2019 00:08	WG1381516
Styrene	U		0.117	0.500	1	11/16/2019 00:08	WG1381516
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/16/2019 00:08	WG1381516
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/16/2019 00:08	WG1381516
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/16/2019 00:08	WG1381516
Tetrachloroethene	2.10	U	0.995	2.50	5	11/19/2019 14:00	WG1382748
Toluene	U		0.412	0.500	1	11/16/2019 00:08	WG1381516
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/16/2019 00:08	WG1381516
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/16/2019 00:08	WG1381516
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/16/2019 00:08	WG1381516
1,1,2-Trichloroethane	U		0.186	0.500	1	11/16/2019 00:08	WG1381516
Trichloroethene	1.87	U	0.765	2.50	5	11/19/2019 14:00	WG1382748
Trichlorofluoromethane	U		0.130	2.50	1	11/16/2019 00:08	WG1381516
1,2,3-Trichloropropane	U	UJ JO	1.23	12.5	5	11/19/2019 14:00	WG1382748
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/16/2019 00:08	WG1381516
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/16/2019 00:08	WG1381516
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/16/2019 00:08	WG1381516

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 1/3/2020



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	11/16/2019 00:08	WG1381516
Vinyl chloride	76.6		0.590	2.50	5	11/19/2019 14:00	WG1382748
Xylenes, Total	U		0.316	1.50	1	11/16/2019 00:08	WG1381516
(S) Toluene-d8	99.7			80.0-120		11/16/2019 00:08	WG1381516
(S) Toluene-d8	108			80.0-120		11/19/2019 14:00	WG1382748
(S) 4-Bromofluorobenzene	103			77.0-126		11/16/2019 00:08	WG1381516
(S) 4-Bromofluorobenzene	109			77.0-126		11/19/2019 14:00	WG1382748
(S) 1,2-Dichloroethane-d4	97.2			70.0-130		11/16/2019 00:08	WG1381516
(S) 1,2-Dichloroethane-d4	109			70.0-130		11/19/2019 14:00	WG1382748

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Sample Narrative:

L1158133-02 WG1381516, WG1382748: Not all compounds reportable at lower dilution.
 L1158133-02 WG1381516, WG1382748: Cannot be re-analyzed at lower dilution due to high levels of target analytes.

JC 1/3/2020



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	1740000		2710	20000	1	11/14/2019 01:45	WG1379400

Sample Narrative:

L1158133-03 WG1379400: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	170000		260	5000	5	11/07/2019 22:51	WG1376795
Nitrate	U		22.7	100	1	11/07/2019 22:38	WG1376795
Sulfate	U		387	25000	5	11/07/2019 22:51	WG1376795

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	827000		20400	200000	200	11/12/2019 10:59	WG1378255

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	39300		750	5000	50	11/12/2019 18:26	WG1378898
Manganese	8530		12.5	250	50	11/12/2019 18:26	WG1378898

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	249	J+ B	31.6	100	1	11/10/2019 23:27	WG1378064
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120		11/10/2019 23:27	WG1378064

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	17600		2.87	6.78	10	11/12/2019 13:46	WG1378754
Ethane	71.9		0.296	1.29	1	11/11/2019 14:26	WG1378445
Ethene	7880		0.422	1.27	1	11/11/2019 14:26	WG1378445

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	245		1.05	25.0	1	11/16/2019 00:29	WG1381516
Acrylonitrile	U		0.873	5.00	1	11/16/2019 00:29	WG1381516
Benzene	U		0.0896	0.500	1	11/16/2019 00:29	WG1381516
Bromobenzene	U		0.133	0.500	1	11/16/2019 00:29	WG1381516
Bromodichloromethane	U		0.0800	0.500	1	11/16/2019 00:29	WG1381516
Bromochloromethane	U		0.145	0.500	1	11/16/2019 00:29	WG1381516
Bromoform	U		0.186	0.500	1	11/16/2019 00:29	WG1381516
Bromomethane	U		3.14	50.0	20	11/19/2019 14:20	WG1382748
n-Butylbenzene	U		0.143	0.500	1	11/16/2019 00:29	WG1381516
sec-Butylbenzene	U		0.134	0.500	1	11/16/2019 00:29	WG1381516
tert-Butylbenzene	U		0.183	0.500	1	11/16/2019 00:29	WG1381516
Carbon disulfide	1.16		0.101	0.500	1	11/16/2019 00:29	WG1381516
Carbon tetrachloride	U		0.159	0.500	1	11/16/2019 00:29	WG1381516

JC 1/3/2020

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 11/06/19 11:55

L1158133

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/16/2019 00:29	WG1381516
Chlorodibromomethane	U		0.128	0.500	1	11/16/2019 00:29	WG1381516
Chloroethane	U		0.141	2.50	1	11/16/2019 00:29	WG1381516
Chloroform	0.362	U	0.0860	0.500	1	11/16/2019 00:29	WG1381516
Chloromethane	U		0.153	1.25	1	11/16/2019 00:29	WG1381516
2-Chlorotoluene	U		0.111	0.500	1	11/16/2019 00:29	WG1381516
4-Chlorotoluene	U		0.0972	0.500	1	11/16/2019 00:29	WG1381516
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/16/2019 00:29	WG1381516
1,2-Dibromoethane	U		0.193	0.500	1	11/16/2019 00:29	WG1381516
Dibromomethane	U		0.117	0.500	1	11/16/2019 00:29	WG1381516
1,2-Dichlorobenzene	U		0.101	0.500	1	11/16/2019 00:29	WG1381516
1,3-Dichlorobenzene	U		0.130	0.500	1	11/16/2019 00:29	WG1381516
1,4-Dichlorobenzene	U		0.121	0.500	1	11/16/2019 00:29	WG1381516
Dichlorodifluoromethane	U		0.127	2.50	1	11/16/2019 00:29	WG1381516
1,1-Dichloroethane	U		0.114	0.500	1	11/16/2019 00:29	WG1381516
1,2-Dichloroethane	U		0.108	0.500	1	11/16/2019 00:29	WG1381516
1,1-Dichloroethene	U		0.188	0.500	1	11/16/2019 00:29	WG1381516
cis-1,2-Dichloroethene	5.28	U	1.87	10.0	20	11/19/2019 14:20	WG1382748
trans-1,2-Dichloroethene	24.6		0.152	0.500	1	11/16/2019 00:29	WG1381516
1,2-Dichloropropane	U		0.190	0.500	1	11/16/2019 00:29	WG1381516
1,1-Dichloropropene	U		0.128	0.500	1	11/16/2019 00:29	WG1381516
1,3-Dichloropropane	U		0.147	1.00	1	11/16/2019 00:29	WG1381516
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/16/2019 00:29	WG1381516
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/16/2019 00:29	WG1381516
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	11/16/2019 00:29	WG1381516
2,2-Dichloropropane	U		0.0929	0.500	1	11/16/2019 00:29	WG1381516
Di-isopropyl ether	U		0.0924	0.500	1	11/16/2019 00:29	WG1381516
Ethylbenzene	0.321	U	0.158	0.500	1	11/16/2019 00:29	WG1381516
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/16/2019 00:29	WG1381516
2-Hexanone	3.30	U	0.757	5.00	1	11/16/2019 00:29	WG1381516
n-Hexane	U		0.305	5.00	1	11/16/2019 00:29	WG1381516
Iodomethane	U	UJ JO	0.377	10.0	1	11/16/2019 00:29	WG1381516
Isopropylbenzene	U		0.126	0.500	1	11/16/2019 00:29	WG1381516
p-Isopropyltoluene	U		0.138	0.500	1	11/16/2019 00:29	WG1381516
2-Butanone (MEK)	165		1.28	5.00	1	11/16/2019 00:29	WG1381516
Methylene Chloride	U		1.07	2.50	1	11/16/2019 00:29	WG1381516
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/16/2019 00:29	WG1381516
Methyl tert-butyl ether	U		0.102	0.500	1	11/16/2019 00:29	WG1381516
Naphthalene	U		0.174	2.50	1	11/16/2019 00:29	WG1381516
n-Propylbenzene	U		0.162	0.500	1	11/16/2019 00:29	WG1381516
Styrene	U		0.117	0.500	1	11/16/2019 00:29	WG1381516
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/16/2019 00:29	WG1381516
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/16/2019 00:29	WG1381516
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/16/2019 00:29	WG1381516
Tetrachloroethene	U		3.98	10.0	20	11/19/2019 14:20	WG1382748
Toluene	0.477	U	0.412	0.500	1	11/16/2019 00:29	WG1381516
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/16/2019 00:29	WG1381516
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/16/2019 00:29	WG1381516
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/16/2019 00:29	WG1381516
1,1,2-Trichloroethane	U		0.186	0.500	1	11/16/2019 00:29	WG1381516
Trichloroethene	U		3.06	10.0	20	11/19/2019 14:20	WG1382748
Trichlorofluoromethane	U		0.130	2.50	1	11/16/2019 00:29	WG1381516
1,2,3-Trichloropropane	U	UJ JO	4.94	50.0	20	11/19/2019 14:20	WG1382748
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/16/2019 00:29	WG1381516
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/16/2019 00:29	WG1381516
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/16/2019 00:29	WG1381516

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 1/3/2020



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U		0.645	5.00	1	11/16/2019 00:29	WG1381516
Vinyl chloride	877		2.36	10.0	20	11/19/2019 14:20	WG1382748
Xylenes, Total	U		0.316	1.50	1	11/16/2019 00:29	WG1381516
(S) Toluene-d8	94.9			80.0-120		11/16/2019 00:29	WG1381516
(S) Toluene-d8	112			80.0-120		11/19/2019 14:20	WG1382748
(S) 4-Bromofluorobenzene	97.7			77.0-126		11/16/2019 00:29	WG1381516
(S) 4-Bromofluorobenzene	112			77.0-126		11/19/2019 14:20	WG1382748
(S) 1,2-Dichloroethane-d4	90.4			70.0-130		11/16/2019 00:29	WG1381516
(S) 1,2-Dichloroethane-d4	117			70.0-130		11/19/2019 14:20	WG1382748

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Sample Narrative:

L1158133-03 WG1381516, WG1382748: Not all compounds reportable at lower dilution.
 L1158133-03 WG1381516, WG1382748: Cannot be re-analyzed at lower dilution due to high levels of target analytes.

JC
1/3/2020



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	589000		2710	20000	1	11/14/2019 01:54	WG1379400

Sample Narrative:

L1158133-04 WG1379400: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	285000		519	10000	10	11/07/2019 23:18	WG1376795
Nitrate	U		22.7	100	1	11/07/2019 23:04	WG1376795
Sulfate	91800		77.4	5000	1	11/07/2019 23:04	WG1376795

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	56300		102	1000	1	11/10/2019 04:56	WG1378047

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	26800		15.0	100	1	11/10/2019 21:22	WG1377945
Manganese	3650		0.250	5.00	1	11/10/2019 21:22	WG1377945

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	122000	J+	3160	10000	100	11/14/2019 09:36	WG1380099
(S) a,a,a-Trifluorotoluene(FID)	104			78.0-120		11/14/2019 09:36	WG1380099

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	22500		2.87	6.78	10	11/12/2019 13:52	WG1378754
Ethane	15.1		0.296	1.29	1	11/11/2019 14:29	WG1378445
Ethene	4000		0.422	1.27	1	11/11/2019 14:29	WG1378445

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	15.0	U	1.05	25.0	1	11/16/2019 00:49	WG1381516
Acrylonitrile	U		0.873	5.00	1	11/16/2019 00:49	WG1381516
Benzene	0.744		0.0896	0.500	1	11/16/2019 00:49	WG1381516
Bromobenzene	U		0.133	0.500	1	11/16/2019 00:49	WG1381516
Bromodichloromethane	U		0.0800	0.500	1	11/16/2019 00:49	WG1381516
Bromochloromethane	U		0.145	0.500	1	11/16/2019 00:49	WG1381516
Bromoform	U		0.186	0.500	1	11/16/2019 00:49	WG1381516
Bromomethane	U		157	2500	1000	11/19/2019 14:41	WG1382748
n-Butylbenzene	U		0.143	0.500	1	11/16/2019 00:49	WG1381516
sec-Butylbenzene	U		0.134	0.500	1	11/16/2019 00:49	WG1381516
tert-Butylbenzene	U		0.183	0.500	1	11/16/2019 00:49	WG1381516
Carbon disulfide	38.3	J	0.101	0.500	1	11/16/2019 00:49	WG1381516
Carbon tetrachloride	U		0.159	0.500	1	11/16/2019 00:49	WG1381516

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 1/3/2020

JC 1/6/2020



Collected date/time: 11/06/19 13:05

L1158133

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/16/2019 00:49	WG1381516
Chlorodibromomethane	U		0.128	0.500	1	11/16/2019 00:49	WG1381516
Chloroethane	U	UJ	0.141	2.50	1	11/16/2019 00:49	WG1381516
Chloroform	U		0.0860	0.500	1	11/16/2019 00:49	WG1381516
Chloromethane	U		0.153	1.25	1	11/16/2019 00:49	WG1381516
2-Chlorotoluene	U		0.111	0.500	1	11/16/2019 00:49	WG1381516
4-Chlorotoluene	U		0.0972	0.500	1	11/16/2019 00:49	WG1381516
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/16/2019 00:49	WG1381516
1,2-Dibromoethane	U		0.193	0.500	1	11/16/2019 00:49	WG1381516
Dibromomethane	U		0.117	0.500	1	11/16/2019 00:49	WG1381516
1,2-Dichlorobenzene	U		0.101	0.500	1	11/16/2019 00:49	WG1381516
1,3-Dichlorobenzene	U		0.130	0.500	1	11/16/2019 00:49	WG1381516
1,4-Dichlorobenzene	U		0.121	0.500	1	11/16/2019 00:49	WG1381516
Dichlorodifluoromethane	U		0.127	2.50	1	11/16/2019 00:49	WG1381516
1,1-Dichloroethane	U		0.114	0.500	1	11/16/2019 00:49	WG1381516
1,2-Dichloroethane	U		0.108	0.500	1	11/16/2019 00:49	WG1381516
1,1-Dichloroethene	268	J E	0.188	0.500	1	11/16/2019 00:49	WG1381516
cis-1,2-Dichloroethene	131000	J	93.3	500	1000	11/19/2019 14:41	WG1382748
trans-1,2-Dichloroethene	395	J	152	500	1000	11/19/2019 14:41	WG1382748
1,2-Dichloropropane	U		0.190	0.500	1	11/16/2019 00:49	WG1381516
1,1-Dichloropropene	U		0.128	0.500	1	11/16/2019 00:49	WG1381516
1,3-Dichloropropane	U		0.147	1.00	1	11/16/2019 00:49	WG1381516
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/16/2019 00:49	WG1381516
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/16/2019 00:49	WG1381516
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	11/16/2019 00:49	WG1381516
2,2-Dichloropropane	U		0.0929	0.500	1	11/16/2019 00:49	WG1381516
Di-isopropyl ether	U		0.0924	0.500	1	11/16/2019 00:49	WG1381516
Ethylbenzene	0.579		0.158	0.500	1	11/16/2019 00:49	WG1381516
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/16/2019 00:49	WG1381516
2-Hexanone	U		0.757	5.00	1	11/16/2019 00:49	WG1381516
n-Hexane	U		0.305	5.00	1	11/16/2019 00:49	WG1381516
Iodomethane	U	UJ JO	0.377	10.0	1	11/16/2019 00:49	WG1381516
Isopropylbenzene	0.184	J	0.126	0.500	1	11/16/2019 00:49	WG1381516
p-Isopropyltoluene	U		0.138	0.500	1	11/16/2019 00:49	WG1381516
2-Butanone (MEK)	10.3		1.28	5.00	1	11/16/2019 00:49	WG1381516
Methylene Chloride	U		1.07	2.50	1	11/16/2019 00:49	WG1381516
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/16/2019 00:49	WG1381516
Methyl tert-butyl ether	U		0.102	0.500	1	11/16/2019 00:49	WG1381516
Naphthalene	0.672	J	0.174	2.50	1	11/16/2019 00:49	WG1381516
n-Propylbenzene	0.516		0.162	0.500	1	11/16/2019 00:49	WG1381516
Styrene	U		0.117	0.500	1	11/16/2019 00:49	WG1381516
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/16/2019 00:49	WG1381516
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/16/2019 00:49	WG1381516
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/16/2019 00:49	WG1381516
Tetrachloroethene	3180	J	199	500	1000	11/19/2019 14:41	WG1382748
Toluene	4.09		0.412	0.500	1	11/16/2019 00:49	WG1381516
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/16/2019 00:49	WG1381516
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/16/2019 00:49	WG1381516
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/16/2019 00:49	WG1381516
1,1,2-Trichloroethane	U		0.186	0.500	1	11/16/2019 00:49	WG1381516
Trichloroethene	1710	J	153	500	1000	11/19/2019 14:41	WG1382748
Trichlorofluoromethane	U		0.130	2.50	1	11/16/2019 00:49	WG1381516
1,2,3-Trichloropropane	U	UJ JO	247	2500	1000	11/19/2019 14:41	WG1382748
1,2,4-Trimethylbenzene	3.82		0.123	0.500	1	11/16/2019 00:49	WG1381516
1,2,3-Trimethylbenzene	1.96		0.0739	0.500	1	11/16/2019 00:49	WG1381516
1,3,5-Trimethylbenzene	1.21		0.124	0.500	1	11/16/2019 00:49	WG1381516

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

JC 1/3/2020
JC 1/6/2020



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	11/16/2019 00:49	WG1381516
Vinyl chloride	11000	J	118	500	1000	11/19/2019 14:41	WG1382748
Xylenes, Total	2.77		0.316	1.50	1	11/16/2019 00:49	WG1381516
(S) Toluene-d8	95.1			80.0-120		11/16/2019 00:49	WG1381516
(S) Toluene-d8	110			80.0-120		11/19/2019 14:41	WG1382748
(S) 4-Bromofluorobenzene	98.9			77.0-126		11/16/2019 00:49	WG1381516
(S) 4-Bromofluorobenzene	108			77.0-126		11/19/2019 14:41	WG1382748
(S) 1,2-Dichloroethane-d4	104			70.0-130		11/16/2019 00:49	WG1381516
(S) 1,2-Dichloroethane-d4	110			70.0-130		11/19/2019 14:41	WG1382748

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Sample Narrative:

L1158133-04 WG1381516, WG1382748: Not all compounds reportable at lower dilution.
 L1158133-04 WG1381516, WG1382748: Cannot be re-analyzed at lower dilution due to high levels of target analytes.

JC 1/6/2020

JC 1/3/2020



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	1180000		2710	20000	1	11/14/2019 02:09	WG1379400

Sample Narrative:

L1158133-05 WG1379400: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	121000		260	5000	5	11/07/2019 23:44	WG1376795
Nitrate	U		22.7	100	1	11/07/2019 23:31	WG1376795
Sulfate	89100		77.4	5000	1	11/07/2019 23:31	WG1376795

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	145000		510	5000	5	11/10/2019 05:19	WG1378047

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	21600		15.0	100	1	11/10/2019 22:02	WG1377945
Manganese	9130		0.250	5.00	1	11/10/2019 22:02	WG1377945

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	2310	J+	31.6	100	1	11/11/2019 00:12	WG1378064
(S) a,a,a-Trifluorotoluene(FID)	104			78.0-120		11/11/2019 00:12	WG1378064

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	29400		2.87	6.78	10	11/12/2019 13:54	WG1378754
Ethane	U		0.296	1.29	1	11/11/2019 14:34	WG1378445
Ethene	222		0.422	1.27	1	11/11/2019 14:34	WG1378445

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	19.1	U	1.05	25.0	1	11/16/2019 01:09	WG1381516
Acrylonitrile	U		0.873	5.00	1	11/16/2019 01:09	WG1381516
Benzene	U		0.0896	0.500	1	11/16/2019 01:09	WG1381516
Bromobenzene	U		0.133	0.500	1	11/16/2019 01:09	WG1381516
Bromodichloromethane	U		0.0800	0.500	1	11/16/2019 01:09	WG1381516
Bromochloromethane	U		0.145	0.500	1	11/16/2019 01:09	WG1381516
Bromoform	U		0.186	0.500	1	11/16/2019 01:09	WG1381516
Bromomethane	U		15.7	250	100	11/19/2019 15:01	WG1382748
n-Butylbenzene	U		0.143	0.500	1	11/16/2019 01:09	WG1381516
sec-Butylbenzene	U		0.134	0.500	1	11/16/2019 01:09	WG1381516
tert-Butylbenzene	U		0.183	0.500	1	11/16/2019 01:09	WG1381516
Carbon disulfide	4.06		0.101	0.500	1	11/16/2019 01:09	WG1381516
Carbon tetrachloride	U		0.159	0.500	1	11/16/2019 01:09	WG1381516

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	11/16/2019 01:09	WG1381516
Chlorodibromomethane	U		0.128	0.500	1	11/16/2019 01:09	WG1381516
Chloroethane	U		0.141	2.50	1	11/16/2019 01:09	WG1381516
Chloroform	U		0.0860	0.500	1	11/16/2019 01:09	WG1381516
Chloromethane	U		0.153	1.25	1	11/16/2019 01:09	WG1381516
2-Chlorotoluene	U		0.111	0.500	1	11/16/2019 01:09	WG1381516
4-Chlorotoluene	U		0.0972	0.500	1	11/16/2019 01:09	WG1381516
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/16/2019 01:09	WG1381516
1,2-Dibromoethane	U		0.193	0.500	1	11/16/2019 01:09	WG1381516
Dibromomethane	U		0.117	0.500	1	11/16/2019 01:09	WG1381516
1,2-Dichlorobenzene	U		0.101	0.500	1	11/16/2019 01:09	WG1381516
1,3-Dichlorobenzene	U		0.130	0.500	1	11/16/2019 01:09	WG1381516
1,4-Dichlorobenzene	U		0.121	0.500	1	11/16/2019 01:09	WG1381516
Dichlorodifluoromethane	U		0.127	2.50	1	11/16/2019 01:09	WG1381516
1,1-Dichloroethane	0.148	J	0.114	0.500	1	11/16/2019 01:09	WG1381516
1,2-Dichloroethane	U		0.108	0.500	1	11/16/2019 01:09	WG1381516
1,1-Dichloroethene	13.0		0.188	0.500	1	11/16/2019 01:09	WG1381516
cis-1,2-Dichloroethene	3780		9.33	50.0	100	11/19/2019 15:01	WG1382748
trans-1,2-Dichloroethene	U		15.2	50.0	100	11/19/2019 15:01	WG1382748
1,2-Dichloropropane	U		0.190	0.500	1	11/16/2019 01:09	WG1381516
1,1-Dichloropropene	U		0.128	0.500	1	11/16/2019 01:09	WG1381516
1,3-Dichloropropane	U		0.147	1.00	1	11/16/2019 01:09	WG1381516
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/16/2019 01:09	WG1381516
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/16/2019 01:09	WG1381516
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	11/16/2019 01:09	WG1381516
2,2-Dichloropropane	U		0.0929	0.500	1	11/16/2019 01:09	WG1381516
Di-isopropyl ether	U		0.0924	0.500	1	11/16/2019 01:09	WG1381516
Ethylbenzene	0.273	J	0.158	0.500	1	11/16/2019 01:09	WG1381516
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/16/2019 01:09	WG1381516
2-Hexanone	U		0.757	5.00	1	11/16/2019 01:09	WG1381516
n-Hexane	U		0.305	5.00	1	11/16/2019 01:09	WG1381516
Iodomethane	U	UJ JO	0.377	10.0	1	11/16/2019 01:09	WG1381516
Isopropylbenzene	U		0.126	0.500	1	11/16/2019 01:09	WG1381516
p-Isopropyltoluene	U		0.138	0.500	1	11/16/2019 01:09	WG1381516
2-Butanone (MEK)	30.6		1.28	5.00	1	11/16/2019 01:09	WG1381516
Methylene Chloride	U		1.07	2.50	1	11/16/2019 01:09	WG1381516
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/16/2019 01:09	WG1381516
Methyl tert-butyl ether	U		0.102	0.500	1	11/16/2019 01:09	WG1381516
Naphthalene	U		0.174	2.50	1	11/16/2019 01:09	WG1381516
n-Propylbenzene	U		0.162	0.500	1	11/16/2019 01:09	WG1381516
Styrene	U		0.117	0.500	1	11/16/2019 01:09	WG1381516
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/16/2019 01:09	WG1381516
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/16/2019 01:09	WG1381516
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/16/2019 01:09	WG1381516
Tetrachloroethene	50.5		19.9	50.0	100	11/19/2019 15:01	WG1382748
Toluene	0.443	J	0.412	0.500	1	11/16/2019 01:09	WG1381516
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/16/2019 01:09	WG1381516
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/16/2019 01:09	WG1381516
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/16/2019 01:09	WG1381516
1,1,2-Trichloroethane	U		0.186	0.500	1	11/16/2019 01:09	WG1381516
Trichloroethene	46.2	J	15.3	50.0	100	11/19/2019 15:01	WG1382748
Trichlorofluoromethane	U		0.130	2.50	1	11/16/2019 01:09	WG1381516
1,2,3-Trichloropropane	U	UJ JO	24.7	250	100	11/19/2019 15:01	WG1382748
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/16/2019 01:09	WG1381516
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/16/2019 01:09	WG1381516
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/16/2019 01:09	WG1381516

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 1/3/2020



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	11/16/2019 01:09	WG1381516
Vinyl chloride	533		11.8	50.0	100	11/19/2019 15:01	WG1382748
Xylenes, Total	U		0.316	1.50	1	11/16/2019 01:09	WG1381516
(S) Toluene-d8	95.0			80.0-120		11/16/2019 01:09	WG1381516
(S) Toluene-d8	113			80.0-120		11/19/2019 15:01	WG1382748
(S) 4-Bromofluorobenzene	100			77.0-126		11/16/2019 01:09	WG1381516
(S) 4-Bromofluorobenzene	112			77.0-126		11/19/2019 15:01	WG1382748
(S) 1,2-Dichloroethane-d4	98.4			70.0-130		11/16/2019 01:09	WG1381516
(S) 1,2-Dichloroethane-d4	110			70.0-130		11/19/2019 15:01	WG1382748

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Sample Narrative:

L1158133-05 WG1381516, WG1382748: Not all compounds reportable at lower dilution.
 L1158133-05 WG1381516, WG1382748: Cannot be re-analyzed at lower dilution due to high levels of target analytes.

JC 1/3/2020



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	605000		2710	20000	1	11/16/2019 11:46	WG1381472

Sample Narrative:

L1159108-01 WG1381472: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	161000		260	5000	5	11/09/2019 18:07	WG1377890
Nitrate	U		22.7	100	1	11/09/2019 17:53	WG1377890
Sulfate	449	U B J	77.4	5000	1	11/09/2019 17:53	WG1377890

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	26200		102	1000	1	11/13/2019 19:01	WG1379453

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	3740		15.0	100	1	11/15/2019 22:31	WG1379539
Manganese	1090		0.250	5.00	1	11/15/2019 22:31	WG1379539

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	12100		2.87	6.78	10	11/15/2019 11:14	WG1380940
Ethane	18.7		0.296	1.29	1	11/14/2019 14:14	WG1380294
Ethene	2710		0.422	1.27	1	11/14/2019 14:14	WG1380294

Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	24.4	U B J	5.25	125	5	11/16/2019 03:52	WG1381516
Gasoline Range Organics-NWTPH	23700	J+	498	2000	20	11/13/2019 23:40	WG1380039
Acrylonitrile	U		4.37	25.0	5	11/16/2019 03:52	WG1381516
Benzene	0.672	J	0.448	2.50	5	11/16/2019 03:52	WG1381516
Bromobenzene	U		0.665	2.50	5	11/16/2019 03:52	WG1381516
Bromodichloromethane	U		0.400	2.50	5	11/16/2019 03:52	WG1381516
Bromochloromethane	U		0.725	2.50	5	11/16/2019 03:52	WG1381516
Bromoform	U		0.930	2.50	5	11/16/2019 03:52	WG1381516
Bromomethane	U		39.3	625	250	11/19/2019 17:23	WG1382748
n-Butylbenzene	U		0.715	2.50	5	11/16/2019 03:52	WG1381516
sec-Butylbenzene	U		0.670	2.50	5	11/16/2019 03:52	WG1381516
tert-Butylbenzene	U		0.915	2.50	5	11/16/2019 03:52	WG1381516
Carbon disulfide	U	UJ	0.505	2.50	5	11/16/2019 03:52	WG1381516
Carbon tetrachloride	U		0.795	2.50	5	11/16/2019 03:52	WG1381516
Chlorobenzene	U		0.700	2.50	5	11/16/2019 03:52	WG1381516
Chlorodibromomethane	U		0.640	2.50	5	11/16/2019 03:52	WG1381516
Chloroethane	U		0.705	12.5	5	11/16/2019 03:52	WG1381516
Chloroform	U		0.430	2.50	5	11/16/2019 03:52	WG1381516
Chloromethane	U		0.765	6.25	5	11/16/2019 03:52	WG1381516
2-Chlorotoluene	U		0.555	2.50	5	11/16/2019 03:52	WG1381516

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 1/6/2020



Collected date/time: 11/08/19 08:00

L1159108

Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
4-Chlorotoluene	U		0.486	2.50	5	11/16/2019 03:52	WG1381516
1,2-Dibromo-3-Chloropropane	U		1.63	12.5	5	11/16/2019 03:52	WG1381516
1,2-Dibromoethane	U		0.965	2.50	5	11/16/2019 03:52	WG1381516
Dibromomethane	U		0.585	2.50	5	11/16/2019 03:52	WG1381516
1,2-Dichlorobenzene	U		0.505	2.50	5	11/16/2019 03:52	WG1381516
1,3-Dichlorobenzene	U		0.650	2.50	5	11/16/2019 03:52	WG1381516
1,4-Dichlorobenzene	U		0.605	2.50	5	11/16/2019 03:52	WG1381516
Dichlorodifluoromethane	U		0.635	12.5	5	11/16/2019 03:52	WG1381516
1,1-Dichloroethane	U		0.570	2.50	5	11/16/2019 03:52	WG1381516
1,2-Dichloroethane	U		0.540	2.50	5	11/16/2019 03:52	WG1381516
1,1-Dichloroethene	99.2		0.940	2.50	5	11/16/2019 03:52	WG1381516
cis-1,2-Dichloroethene	26300		23.3	125	250	11/19/2019 17:23	WG1382748
trans-1,2-Dichloroethene	237		0.760	2.50	5	11/16/2019 03:52	WG1381516
1,2-Dichloropropane	U		0.950	2.50	5	11/16/2019 03:52	WG1381516
1,1-Dichloropropene	U		0.640	2.50	5	11/16/2019 03:52	WG1381516
1,3-Dichloropropane	U		0.735	5.00	5	11/16/2019 03:52	WG1381516
cis-1,3-Dichloropropene	U		0.488	2.50	5	11/16/2019 03:52	WG1381516
trans-1,3-Dichloropropene	U		1.11	2.50	5	11/16/2019 03:52	WG1381516
trans-1,4-Dichloro-2-butene	U	UJ JO	1.29	25.0	5	11/16/2019 03:52	WG1381516
2,2-Dichloropropane	U		0.465	2.50	5	11/16/2019 03:52	WG1381516
Di-isopropyl ether	U		0.462	2.50	5	11/16/2019 03:52	WG1381516
Ethylbenzene	U		0.790	2.50	5	11/16/2019 03:52	WG1381516
Hexachloro-1,3-butadiene	U		0.785	5.00	5	11/16/2019 03:52	WG1381516
2-Hexanone	U		3.78	25.0	5	11/16/2019 03:52	WG1381516
n-Hexane	U		1.53	25.0	5	11/16/2019 03:52	WG1381516
Iodomethane	U	UJ JO	1.89	50.0	5	11/16/2019 03:52	WG1381516
Isopropylbenzene	U		0.630	2.50	5	11/16/2019 03:52	WG1381516
p-Isopropyltoluene	U		0.690	2.50	5	11/16/2019 03:52	WG1381516
2-Butanone (MEK)	U		6.40	25.0	5	11/16/2019 03:52	WG1381516
Methylene Chloride	U		5.35	12.5	5	11/16/2019 03:52	WG1381516
4-Methyl-2-pentanone (MIBK)	U		4.12	25.0	5	11/16/2019 03:52	WG1381516
Methyl tert-butyl ether	U		0.510	2.50	5	11/16/2019 03:52	WG1381516
Naphthalene	U		0.870	12.5	5	11/16/2019 03:52	WG1381516
n-Propylbenzene	U		0.810	2.50	5	11/16/2019 03:52	WG1381516
Styrene	U		0.585	2.50	5	11/16/2019 03:52	WG1381516
1,1,1,2-Tetrachloroethane	U		0.600	2.50	5	11/16/2019 03:52	WG1381516
1,1,2,2-Tetrachloroethane	U		0.650	2.50	5	11/16/2019 03:52	WG1381516
1,1,2-Trichlorotrifluoroethane	U		0.820	2.50	5	11/16/2019 03:52	WG1381516
Tetrachloroethene	U		49.8	125	250	11/19/2019 17:23	WG1382748
Toluene	U		2.06	2.50	5	11/16/2019 03:52	WG1381516
1,2,3-Trichlorobenzene	U		0.820	2.50	5	11/16/2019 03:52	WG1381516
1,2,4-Trichlorobenzene	U		1.78	2.50	5	11/16/2019 03:52	WG1381516
1,1,1-Trichloroethane	U		0.470	2.50	5	11/16/2019 03:52	WG1381516
1,1,2-Trichloroethane	U		0.930	2.50	5	11/16/2019 03:52	WG1381516
Trichloroethene	1.20	J	0.765	2.50	5	11/16/2019 03:52	WG1381516
Trichlorofluoromethane	U		0.650	12.5	5	11/16/2019 03:52	WG1381516
1,2,3-Trichloropropane	U	UJ JO	61.7	625	250	11/19/2019 17:23	WG1382748
1,2,4-Trimethylbenzene	U		0.615	2.50	5	11/16/2019 03:52	WG1381516
1,2,3-Trimethylbenzene	U		0.369	2.50	5	11/16/2019 03:52	WG1381516
1,3,5-Trimethylbenzene	U		0.620	2.50	5	11/16/2019 03:52	WG1381516
Vinyl acetate	U		3.22	25.0	5	11/16/2019 03:52	WG1381516
Vinyl chloride	9110		29.5	125	250	11/19/2019 17:23	WG1382748
Xylenes, Total	U		1.58	7.50	5	11/16/2019 03:52	WG1381516
(S) Toluene-d8	98.6			80.0-120		11/16/2019 03:52	WG1381516
(S) Toluene-d8	111			80.0-120		11/19/2019 17:23	WG1382748
(S) 4-Bromofluorobenzene	98.9			77.0-126		11/16/2019 03:52	WG1381516

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 1/6/2020



Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 4-Bromofluorobenzene	109			77.0-126		11/19/2019 17:23	WG1382748
(S) 1,2-Dichloroethane-d4	107			80.0-125		11/13/2019 23:40	WG1380039
(S) 4-Bromofluorobenzene	100			75.0-120		11/13/2019 23:40	WG1380039
(S) Toluene-d8	98.4			80.0-120		11/13/2019 23:40	WG1380039
(S) 1,2-Dichloroethane-d4	95.8			70.0-130		11/16/2019 03:52	WG1381516
(S) 1,2-Dichloroethane-d4	114			70.0-130		11/19/2019 17:23	WG1382748

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Sample Narrative:

L1159108-01 WG1381516, WG1382748: Not all compounds reportable at lower dilution.

L1159108-01 WG1381516, WG1382748: Cannot be re-analyzed at a lower dilution due to high levels of target analytes.

JC 1/6/2020



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	156000		2710	20000	1	11/16/2019 11:53	WG1381472

Sample Narrative:

L1159108-02 WG1381472: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	10800		51.9	1000	1	11/09/2019 18:20	WG1377890
Nitrate	28.4	J	22.7	100	1	11/09/2019 18:20	WG1377890
Sulfate	14300		77.4	5000	1	11/09/2019 18:20	WG1377890

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1080	B	102	1000	1	11/13/2019 19:15	WG1379453

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	83.6	J	15.0	100	1	11/15/2019 22:35	WG1379539
Manganese	268		0.250	5.00	1	11/15/2019 22:35	WG1379539

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	8.35		0.287	0.678	1	11/14/2019 14:21	WG1380294
Ethane	U		0.296	1.29	1	11/14/2019 14:21	WG1380294
Ethene	U		0.422	1.27	1	11/14/2019 14:21	WG1380294

Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	1.38	U	1.05	25.0	1	11/16/2019 04:13	WG1381516
Gasoline Range Organics-NWTPH	2310	J+	24.9	100	1	11/13/2019 22:58	WG1380039
Acrylonitrile	U		0.873	5.00	1	11/16/2019 04:13	WG1381516
Benzene	U		0.0896	0.500	1	11/16/2019 04:13	WG1381516
Bromobenzene	U		0.133	0.500	1	11/16/2019 04:13	WG1381516
Bromodichloromethane	U		0.0800	0.500	1	11/16/2019 04:13	WG1381516
Bromochloromethane	U		0.145	0.500	1	11/16/2019 04:13	WG1381516
Bromoform	U		0.186	0.500	1	11/16/2019 04:13	WG1381516
Bromomethane	U		15.7	250	100	11/19/2019 17:44	WG1382748
n-Butylbenzene	U		0.143	0.500	1	11/16/2019 04:13	WG1381516
sec-Butylbenzene	U		0.134	0.500	1	11/16/2019 04:13	WG1381516
tert-Butylbenzene	U		0.183	0.500	1	11/16/2019 04:13	WG1381516
Carbon disulfide	U		0.101	0.500	1	11/16/2019 04:13	WG1381516
Carbon tetrachloride	U		0.159	0.500	1	11/16/2019 04:13	WG1381516
Chlorobenzene	U		0.140	0.500	1	11/16/2019 04:13	WG1381516
Chlorodibromomethane	U		0.128	0.500	1	11/16/2019 04:13	WG1381516
Chloroethane	U		0.141	2.50	1	11/16/2019 04:13	WG1381516
Chloroform	U		0.0860	0.500	1	11/16/2019 04:13	WG1381516
Chloromethane	U		0.153	1.25	1	11/16/2019 04:13	WG1381516
2-Chlorotoluene	U		0.111	0.500	1	11/16/2019 04:13	WG1381516

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 1/6/2020



Collected date/time: 11/08/19 09:10

L1159108

Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
4-Chlorotoluene	U		0.0972	0.500	1	11/16/2019 04:13	WG1381516
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/16/2019 04:13	WG1381516
1,2-Dibromoethane	U		0.193	0.500	1	11/16/2019 04:13	WG1381516
Dibromomethane	U		0.117	0.500	1	11/16/2019 04:13	WG1381516
1,2-Dichlorobenzene	U		0.101	0.500	1	11/16/2019 04:13	WG1381516
1,3-Dichlorobenzene	U		0.130	0.500	1	11/16/2019 04:13	WG1381516
1,4-Dichlorobenzene	U		0.121	0.500	1	11/16/2019 04:13	WG1381516
Dichlorodifluoromethane	U		0.127	2.50	1	11/16/2019 04:13	WG1381516
1,1-Dichloroethane	U		0.114	0.500	1	11/16/2019 04:13	WG1381516
1,2-Dichloroethane	U		0.108	0.500	1	11/16/2019 04:13	WG1381516
1,1-Dichloroethene	16.0		0.188	0.500	1	11/16/2019 04:13	WG1381516
cis-1,2-Dichloroethene	79.0		0.0933	0.500	1	11/16/2019 04:13	WG1381516
trans-1,2-Dichloroethene	2.77		0.152	0.500	1	11/16/2019 04:13	WG1381516
1,2-Dichloropropane	U		0.190	0.500	1	11/16/2019 04:13	WG1381516
1,1-Dichloropropene	U		0.128	0.500	1	11/16/2019 04:13	WG1381516
1,3-Dichloropropane	U		0.147	1.00	1	11/16/2019 04:13	WG1381516
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/16/2019 04:13	WG1381516
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/16/2019 04:13	WG1381516
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	11/16/2019 04:13	WG1381516
2,2-Dichloropropane	U		0.0929	0.500	1	11/16/2019 04:13	WG1381516
Di-isopropyl ether	U		0.0924	0.500	1	11/16/2019 04:13	WG1381516
Ethylbenzene	U		0.158	0.500	1	11/16/2019 04:13	WG1381516
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/16/2019 04:13	WG1381516
2-Hexanone	U		0.757	5.00	1	11/16/2019 04:13	WG1381516
n-Hexane	U		0.305	5.00	1	11/16/2019 04:13	WG1381516
Iodomethane	U	UJ JO	0.377	10.0	1	11/16/2019 04:13	WG1381516
Isopropylbenzene	U		0.126	0.500	1	11/16/2019 04:13	WG1381516
p-Isopropyltoluene	U		0.138	0.500	1	11/16/2019 04:13	WG1381516
2-Butanone (MEK)	U		1.28	5.00	1	11/16/2019 04:13	WG1381516
Methylene Chloride	U		1.07	2.50	1	11/16/2019 04:13	WG1381516
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/16/2019 04:13	WG1381516
Methyl tert-butyl ether	U		0.102	0.500	1	11/16/2019 04:13	WG1381516
Naphthalene	U		0.174	2.50	1	11/16/2019 04:13	WG1381516
n-Propylbenzene	U		0.162	0.500	1	11/16/2019 04:13	WG1381516
Styrene	U		0.117	0.500	1	11/16/2019 04:13	WG1381516
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/16/2019 04:13	WG1381516
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/16/2019 04:13	WG1381516
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/16/2019 04:13	WG1381516
Tetrachloroethene	1590		19.9	50.0	100	11/19/2019 17:44	WG1382748
Toluene	U		0.412	0.500	1	11/16/2019 04:13	WG1381516
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/16/2019 04:13	WG1381516
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/16/2019 04:13	WG1381516
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/16/2019 04:13	WG1381516
1,1,2-Trichloroethane	U		0.186	0.500	1	11/16/2019 04:13	WG1381516
Trichloroethene	733		15.3	50.0	100	11/19/2019 17:44	WG1382748
Trichlorofluoromethane	U		0.130	2.50	1	11/16/2019 04:13	WG1381516
1,2,3-Trichloropropane	U	UJ JO	24.7	250	100	11/19/2019 17:44	WG1382748
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/16/2019 04:13	WG1381516
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/16/2019 04:13	WG1381516
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/16/2019 04:13	WG1381516
Vinyl acetate	U		0.645	5.00	1	11/16/2019 04:13	WG1381516
Vinyl chloride	U		11.8	50.0	100	11/19/2019 17:44	WG1382748
Xylenes, Total	U		0.316	1.50	1	11/16/2019 04:13	WG1381516
(S) Toluene-d8	96.1			80.0-120		11/16/2019 04:13	WG1381516
(S) Toluene-d8	112			80.0-120		11/19/2019 17:44	WG1382748
(S) 4-Bromofluorobenzene	98.6			77.0-126		11/16/2019 04:13	WG1381516

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

JC 1/6/2020



Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 4-Bromofluorobenzene	113			77.0-126		11/19/2019 17:44	WG1382748
(S) 1,2-Dichloroethane-d4	100			80.0-125		11/13/2019 22:58	WG1380039
(S) 4-Bromofluorobenzene	104			75.0-120		11/13/2019 22:58	WG1380039
(S) Toluene-d8	94.9			80.0-120		11/13/2019 22:58	WG1380039
(S) 1,2-Dichloroethane-d4	97.5			70.0-130		11/16/2019 04:13	WG1381516
(S) 1,2-Dichloroethane-d4	117			70.0-130		11/19/2019 17:44	WG1382748

Sample Narrative:

L1159108-02 WG1381516, WG1382748: Not all compounds reportable at lower dilution.

L1159108-02 WG1381516, WG1382748: Cannot be re-analyzed at a lower dilution due to high levels of target analytes.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 1/6/2020



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	162000		2710	20000	1	11/16/2019 12:02	WG1381472

Sample Narrative:

L1159108-03 WG1381472: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	13000		51.9	1000	1	11/09/2019 18:59	WG1377890
Nitrate	U		22.7	100	1	11/09/2019 18:59	WG1377890
Sulfate	297	B	77.4	5000	1	11/09/2019 18:59	WG1377890

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	7950		102	1000	1	11/13/2019 20:10	WG1379453

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	2460		15.0	100	1	11/16/2019 10:48	WG1379539
Manganese	119		0.250	5.00	1	11/16/2019 10:48	WG1379539

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	933		0.287	0.678	1	11/14/2019 14:24	WG1380294
Ethane	8.02		0.296	1.29	1	11/14/2019 14:24	WG1380294
Ethene	7.25		0.422	1.27	1	11/14/2019 14:24	WG1380294

Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	15.4	U	1.05	25.0	1	11/16/2019 04:33	WG1381516
Gasoline Range Organics-NWTPH	45.0	J	24.9	100	1	11/13/2019 23:19	WG1380039
Acrylonitrile	U		0.873	5.00	1	11/16/2019 04:33	WG1381516
Benzene	U		0.0896	0.500	1	11/16/2019 04:33	WG1381516
Bromobenzene	U		0.133	0.500	1	11/16/2019 04:33	WG1381516
Bromodichloromethane	U		0.0800	0.500	1	11/16/2019 04:33	WG1381516
Bromochloromethane	U		0.145	0.500	1	11/16/2019 04:33	WG1381516
Bromoform	U		0.186	0.500	1	11/16/2019 04:33	WG1381516
Bromomethane	U		0.157	2.50	1	11/19/2019 18:04	WG1382748
n-Butylbenzene	U		0.143	0.500	1	11/16/2019 04:33	WG1381516
sec-Butylbenzene	U		0.134	0.500	1	11/16/2019 04:33	WG1381516
tert-Butylbenzene	U		0.183	0.500	1	11/16/2019 04:33	WG1381516
Carbon disulfide	0.597		0.101	0.500	1	11/16/2019 04:33	WG1381516
Carbon tetrachloride	U		0.159	0.500	1	11/16/2019 04:33	WG1381516
Chlorobenzene	U		0.140	0.500	1	11/16/2019 04:33	WG1381516
Chlorodibromomethane	U		0.128	0.500	1	11/16/2019 04:33	WG1381516
Chloroethane	U		0.141	2.50	1	11/16/2019 04:33	WG1381516
Chloroform	U		0.0860	0.500	1	11/16/2019 04:33	WG1381516
Chloromethane	U		0.153	1.25	1	11/16/2019 04:33	WG1381516
2-Chlorotoluene	U		0.111	0.500	1	11/16/2019 04:33	WG1381516

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 11/08/19 10:00

L1159108

Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
4-Chlorotoluene	U		0.0972	0.500	1	11/16/2019 04:33	WG1381516
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/16/2019 04:33	WG1381516
1,2-Dibromoethane	U		0.193	0.500	1	11/16/2019 04:33	WG1381516
Dibromomethane	U		0.117	0.500	1	11/16/2019 04:33	WG1381516
1,2-Dichlorobenzene	U		0.101	0.500	1	11/16/2019 04:33	WG1381516
1,3-Dichlorobenzene	U		0.130	0.500	1	11/16/2019 04:33	WG1381516
1,4-Dichlorobenzene	U		0.121	0.500	1	11/16/2019 04:33	WG1381516
Dichlorodifluoromethane	U		0.127	2.50	1	11/16/2019 04:33	WG1381516
1,1-Dichloroethane	U		0.114	0.500	1	11/16/2019 04:33	WG1381516
1,2-Dichloroethane	U		0.108	0.500	1	11/16/2019 04:33	WG1381516
1,1-Dichloroethene	U		0.188	0.500	1	11/16/2019 04:33	WG1381516
cis-1,2-Dichloroethene	59.9		0.0933	0.500	1	11/16/2019 04:33	WG1381516
trans-1,2-Dichloroethene	0.167	J	0.152	0.500	1	11/16/2019 04:33	WG1381516
1,2-Dichloropropane	U		0.190	0.500	1	11/16/2019 04:33	WG1381516
1,1-Dichloropropene	U		0.128	0.500	1	11/16/2019 04:33	WG1381516
1,3-Dichloropropane	U		0.147	1.00	1	11/16/2019 04:33	WG1381516
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/16/2019 04:33	WG1381516
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/16/2019 04:33	WG1381516
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	11/16/2019 04:33	WG1381516
2,2-Dichloropropane	U		0.0929	0.500	1	11/16/2019 04:33	WG1381516
Di-isopropyl ether	U		0.0924	0.500	1	11/16/2019 04:33	WG1381516
Ethylbenzene	U		0.158	0.500	1	11/16/2019 04:33	WG1381516
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/16/2019 04:33	WG1381516
2-Hexanone	U		0.757	5.00	1	11/16/2019 04:33	WG1381516
n-Hexane	U		0.305	5.00	1	11/16/2019 04:33	WG1381516
Iodomethane	U	UJ JO	0.377	10.0	1	11/16/2019 04:33	WG1381516
Isopropylbenzene	U		0.126	0.500	1	11/16/2019 04:33	WG1381516
p-Isopropyltoluene	U		0.138	0.500	1	11/16/2019 04:33	WG1381516
2-Butanone (MEK)	U		1.28	5.00	1	11/16/2019 04:33	WG1381516
Methylene Chloride	U		1.07	2.50	1	11/16/2019 04:33	WG1381516
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/16/2019 04:33	WG1381516
Methyl tert-butyl ether	U		0.102	0.500	1	11/16/2019 04:33	WG1381516
Naphthalene	U		0.174	2.50	1	11/16/2019 04:33	WG1381516
n-Propylbenzene	U		0.162	0.500	1	11/16/2019 04:33	WG1381516
Styrene	U		0.117	0.500	1	11/16/2019 04:33	WG1381516
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/16/2019 04:33	WG1381516
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/16/2019 04:33	WG1381516
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/16/2019 04:33	WG1381516
Tetrachloroethene	U		0.199	0.500	1	11/19/2019 18:04	WG1382748
Toluene	0.459	J	0.412	0.500	1	11/16/2019 04:33	WG1381516
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/16/2019 04:33	WG1381516
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/16/2019 04:33	WG1381516
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/16/2019 04:33	WG1381516
1,1,2-Trichloroethane	U		0.186	0.500	1	11/16/2019 04:33	WG1381516
Trichloroethene	0.193	J	0.153	0.500	1	11/19/2019 18:04	WG1382748
Trichlorofluoromethane	U		0.130	2.50	1	11/16/2019 04:33	WG1381516
1,2,3-Trichloropropane	U	UJ JO	0.247	2.50	1	11/19/2019 18:04	WG1382748
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/16/2019 04:33	WG1381516
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/16/2019 04:33	WG1381516
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/16/2019 04:33	WG1381516
Vinyl acetate	U		0.645	5.00	1	11/16/2019 04:33	WG1381516
Vinyl chloride	4.29		0.118	0.500	1	11/16/2019 04:33	WG1381516
Xylenes, Total	U		0.316	1.50	1	11/16/2019 04:33	WG1381516
(S) Toluene-d8	96.6			80.0-120		11/16/2019 04:33	WG1381516
(S) Toluene-d8	111			80.0-120		11/19/2019 18:04	WG1382748
(S) 4-Bromofluorobenzene	97.4			77.0-126		11/16/2019 04:33	WG1381516

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 1/6/2020

ACCOUNT:

PES Environmental, Inc.- WA

PROJECT:

1413.001.05.601

SDG:

L1159108

DATE/TIME:

11/20/19 16:34

PAGE:

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Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 4-Bromofluorobenzene	108			77.0-126		11/19/2019 18:04	WG1382748
(S) 1,2-Dichloroethane-d4	105			80.0-125		11/13/2019 23:19	WG1380039
(S) 4-Bromofluorobenzene	102			75.0-120		11/13/2019 23:19	WG1380039
(S) Toluene-d8	97.6			80.0-120		11/13/2019 23:19	WG1380039
(S) 1,2-Dichloroethane-d4	94.9			70.0-130		11/16/2019 04:33	WG1381516
(S) 1,2-Dichloroethane-d4	116			70.0-130		11/19/2019 18:04	WG1382748

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 1/6/2020



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	605000		2710	20000	1	11/16/2019 12:10	WG1381472

Sample Narrative:

L1159108-04 WG1381472: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	161000		260	5000	5	11/09/2019 19:25	WG1377890
Nitrate	U		22.7	100	1	11/09/2019 19:12	WG1377890
Sulfate	392	B	77.4	5000	1	11/09/2019 19:12	WG1377890

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	26500		102	1000	1	11/13/2019 20:27	WG1379453

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	3390		15.0	100	1	11/16/2019 10:52	WG1379539
Manganese	1020		0.250	5.00	1	11/16/2019 10:52	WG1379539

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	14300		2.87	6.78	10	11/15/2019 11:16	WG1380940
Ethane	18.5		0.296	1.29	1	11/14/2019 14:32	WG1380294
Ethene	2870		0.422	1.27	1	11/14/2019 14:32	WG1380294

Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	18.6	U	1.05	25.0	1	11/16/2019 04:53	WG1381516 JC 1/6/2020
Gasoline Range Organics-NWTPH	23900	J+	623	2500	25	11/14/2019 00:00	WG1380039
Acrylonitrile	U		0.873	5.00	1	11/16/2019 04:53	WG1381516
Benzene	0.486	J	0.0896	0.500	1	11/16/2019 04:53	WG1381516
Bromobenzene	U		0.133	0.500	1	11/16/2019 04:53	WG1381516
Bromodichloromethane	U		0.0800	0.500	1	11/16/2019 04:53	WG1381516
Bromochloromethane	U		0.145	0.500	1	11/16/2019 04:53	WG1381516
Bromoform	U		0.186	0.500	1	11/16/2019 04:53	WG1381516
Bromomethane	U		78.5	1250	500	11/19/2019 18:24	WG1382748
n-Butylbenzene	U		0.143	0.500	1	11/16/2019 04:53	WG1381516
sec-Butylbenzene	U		0.134	0.500	1	11/16/2019 04:53	WG1381516
tert-Butylbenzene	U		0.183	0.500	1	11/16/2019 04:53	WG1381516
Carbon disulfide	3.91	J	0.101	0.500	1	11/16/2019 04:53	WG1381516
Carbon tetrachloride	U		0.159	0.500	1	11/16/2019 04:53	WG1381516
Chlorobenzene	U		0.140	0.500	1	11/16/2019 04:53	WG1381516
Chlorodibromomethane	U		0.128	0.500	1	11/16/2019 04:53	WG1381516
Chloroethane	U		0.141	2.50	1	11/16/2019 04:53	WG1381516
Chloroform	U		0.0860	0.500	1	11/16/2019 04:53	WG1381516
Chloromethane	U		0.153	1.25	1	11/16/2019 04:53	WG1381516
2-Chlorotoluene	U		0.111	0.500	1	11/16/2019 04:53	WG1381516 JC 1/6/2020

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 11/08/19 11:10

L1159108

Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
4-Chlorotoluene	U		0.0972	0.500	1	11/16/2019 04:53	WG1381516
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/16/2019 04:53	WG1381516
1,2-Dibromoethane	U		0.193	0.500	1	11/16/2019 04:53	WG1381516
Dibromomethane	U		0.117	0.500	1	11/16/2019 04:53	WG1381516
1,2-Dichlorobenzene	U		0.101	0.500	1	11/16/2019 04:53	WG1381516
1,3-Dichlorobenzene	U		0.130	0.500	1	11/16/2019 04:53	WG1381516
1,4-Dichlorobenzene	U		0.121	0.500	1	11/16/2019 04:53	WG1381516
Dichlorodifluoromethane	U		0.127	2.50	1	11/16/2019 04:53	WG1381516
1,1-Dichloroethane	U		0.114	0.500	1	11/16/2019 04:53	WG1381516
1,2-Dichloroethane	U		0.108	0.500	1	11/16/2019 04:53	WG1381516
1,1-Dichloroethene	116		0.188	0.500	1	11/16/2019 04:53	WG1381516
cis-1,2-Dichloroethene	30800		46.7	250	500	11/19/2019 18:24	WG1382748
trans-1,2-Dichloroethene	200	J	76.0	250	500	11/19/2019 18:24	WG1382748
1,2-Dichloropropane	U		0.190	0.500	1	11/16/2019 04:53	WG1381516
1,1-Dichloropropene	U		0.128	0.500	1	11/16/2019 04:53	WG1381516
1,3-Dichloropropane	U		0.147	1.00	1	11/16/2019 04:53	WG1381516
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/16/2019 04:53	WG1381516
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/16/2019 04:53	WG1381516
trans-1,4-Dichloro-2-butene	U	UJ JO	0.257	5.00	1	11/16/2019 04:53	WG1381516
2,2-Dichloropropane	U		0.0929	0.500	1	11/16/2019 04:53	WG1381516
Di-isopropyl ether	U		0.0924	0.500	1	11/16/2019 04:53	WG1381516
Ethylbenzene	U		0.158	0.500	1	11/16/2019 04:53	WG1381516
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/16/2019 04:53	WG1381516
2-Hexanone	U		0.757	5.00	1	11/16/2019 04:53	WG1381516
n-Hexane	U		0.305	5.00	1	11/16/2019 04:53	WG1381516
Iodomethane	U	UJ JO	0.377	10.0	1	11/16/2019 04:53	WG1381516
Isopropylbenzene	U		0.126	0.500	1	11/16/2019 04:53	WG1381516
p-Isopropyltoluene	U		0.138	0.500	1	11/16/2019 04:53	WG1381516
2-Butanone (MEK)	U		1.28	5.00	1	11/16/2019 04:53	WG1381516
Methylene Chloride	U		1.07	2.50	1	11/16/2019 04:53	WG1381516
4-Methyl-2-pentanone (MIBK)	1.11	J	0.823	5.00	1	11/16/2019 04:53	WG1381516
Methyl tert-butyl ether	U		0.102	0.500	1	11/16/2019 04:53	WG1381516
Naphthalene	U		0.174	2.50	1	11/16/2019 04:53	WG1381516
n-Propylbenzene	U		0.162	0.500	1	11/16/2019 04:53	WG1381516
Styrene	U		0.117	0.500	1	11/16/2019 04:53	WG1381516
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/16/2019 04:53	WG1381516
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/16/2019 04:53	WG1381516
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/16/2019 04:53	WG1381516
Tetrachloroethene	U		99.5	250	500	11/19/2019 18:24	WG1382748
Toluene	0.455	J	0.412	0.500	1	11/16/2019 04:53	WG1381516
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/16/2019 04:53	WG1381516
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/16/2019 04:53	WG1381516
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/16/2019 04:53	WG1381516
1,1,2-Trichloroethane	U		0.186	0.500	1	11/16/2019 04:53	WG1381516
Trichloroethene	U		76.5	250	500	11/19/2019 18:24	WG1382748
Trichlorofluoromethane	U		0.130	2.50	1	11/16/2019 04:53	WG1381516
1,2,3-Trichloropropane	U	UJ JO	123	1250	500	11/19/2019 18:24	WG1382748
1,2,4-Trimethylbenzene	U		0.123	0.500	1	11/16/2019 04:53	WG1381516
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	11/16/2019 04:53	WG1381516
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/16/2019 04:53	WG1381516
Vinyl acetate	U		0.645	5.00	1	11/16/2019 04:53	WG1381516
Vinyl chloride	10700		59.0	250	500	11/19/2019 18:24	WG1382748
Xylenes, Total	U		0.316	1.50	1	11/16/2019 04:53	WG1381516
(S) Toluene-d8	98.1			80.0-120		11/16/2019 04:53	WG1381516
(S) Toluene-d8	110			80.0-120		11/19/2019 18:24	WG1382748
(S) 4-Bromofluorobenzene	97.9			77.0-126		11/16/2019 04:53	WG1381516

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

JC 1/6/2020



Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 4-Bromofluorobenzene	109			77.0-126		11/19/2019 18:24	WG1382748
(S) 1,2-Dichloroethane-d4	107			80.0-125		11/14/2019 00:00	WG1380039
(S) 4-Bromofluorobenzene	102			75.0-120		11/14/2019 00:00	WG1380039
(S) Toluene-d8	97.4			80.0-120		11/14/2019 00:00	WG1380039
(S) 1,2-Dichloroethane-d4	97.1			70.0-130		11/16/2019 04:53	WG1381516
(S) 1,2-Dichloroethane-d4	117			70.0-130		11/19/2019 18:24	WG1382748

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Sample Narrative:

L1159108-04 WG1381516, WG1382748: Not all compounds reportable at lower dilution.

L1159108-04 WG1381516, WG1382748: Cannot be re-analyzed at a lower dilution due to high levels of target analytes.

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Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	1610000		2710	20000	1	11/16/2019 12:17	WG1381472

Sample Narrative:

L1159108-05 WG1381472: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	146000		260	5000	5	11/09/2019 19:51	WG1377890
Nitrate	38.9	J	22.7	100	1	11/09/2019 19:38	WG1377890
Sulfate	3440	J	77.4	5000	1	11/09/2019 19:38	WG1377890

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	198000		510	5000	5	11/13/2019 20:41	WG1379453

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	86800		15.0	100	1	11/16/2019 10:56	WG1379539
Manganese	7640		0.250	5.00	1	11/16/2019 10:56	WG1379539

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	12600		2.87	6.78	10	11/15/2019 11:19	WG1380940
Ethane	22.2		0.296	1.29	1	11/14/2019 14:38	WG1380294
Ethene	4150		0.422	1.27	1	11/14/2019 14:38	WG1380294

Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	56.6		1.05	25.0	1	11/16/2019 05:14	WG1381516
Gasoline Range Organics-NWTPH	14100	J+	249	1000	10	11/14/2019 00:21	WG1380039
Acrylonitrile	U		0.873	5.00	1	11/16/2019 05:14	WG1381516
Benzene	U		0.0896	0.500	1	11/16/2019 05:14	WG1381516
Bromobenzene	U		0.133	0.500	1	11/16/2019 05:14	WG1381516
Bromodichloromethane	U		0.0800	0.500	1	11/16/2019 05:14	WG1381516
Bromochloromethane	U		0.145	0.500	1	11/16/2019 05:14	WG1381516
Bromoform	U		0.186	0.500	1	11/16/2019 05:14	WG1381516
Bromomethane	U		78.5	1250	500	11/19/2019 18:45	WG1382748
n-Butylbenzene	U		0.143	0.500	1	11/16/2019 05:14	WG1381516
sec-Butylbenzene	U		0.134	0.500	1	11/16/2019 05:14	WG1381516
tert-Butylbenzene	U		0.183	0.500	1	11/16/2019 05:14	WG1381516
Carbon disulfide	2.06		0.101	0.500	1	11/16/2019 05:14	WG1381516
Carbon tetrachloride	U		0.159	0.500	1	11/16/2019 05:14	WG1381516
Chlorobenzene	U		0.140	0.500	1	11/16/2019 05:14	WG1381516
Chlorodibromomethane	U		0.128	0.500	1	11/16/2019 05:14	WG1381516
Chloroethane	U		0.141	2.50	1	11/16/2019 05:14	WG1381516
Chloroform	U		0.0860	0.500	1	11/16/2019 05:14	WG1381516
Chloromethane	U		0.153	1.25	1	11/16/2019 05:14	WG1381516
2-Chlorotoluene	U		0.111	0.500	1	11/16/2019 05:14	WG1381516

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 11/08/19 13:15

L1159108

Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
4-Chlorotoluene	U		0.0972	0.500	1	11/16/2019 05:14	WG1381516
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	11/16/2019 05:14	WG1381516
1,2-Dibromoethane	U		0.193	0.500	1	11/16/2019 05:14	WG1381516
Dibromomethane	U		0.117	0.500	1	11/16/2019 05:14	WG1381516
1,2-Dichlorobenzene	U		0.101	0.500	1	11/16/2019 05:14	WG1381516
1,3-Dichlorobenzene	U		0.130	0.500	1	11/16/2019 05:14	WG1381516
1,4-Dichlorobenzene	U		0.121	0.500	1	11/16/2019 05:14	WG1381516
Dichlorodifluoromethane	U		0.127	2.50	1	11/16/2019 05:14	WG1381516
1,1-Dichloroethane	U		0.114	0.500	1	11/16/2019 05:14	WG1381516
1,2-Dichloroethane	U		0.108	0.500	1	11/16/2019 05:14	WG1381516
1,1-Dichloroethene	15.0		0.188	0.500	1	11/16/2019 05:14	WG1381516
cis-1,2-Dichloroethene	19200		46.7	250	500	11/19/2019 18:45	WG1382748
trans-1,2-Dichloroethene	89.4	U	76.0	250	500	11/19/2019 18:45	WG1382748
1,2-Dichloropropane	U		0.190	0.500	1	11/16/2019 05:14	WG1381516
1,1-Dichloropropene	U		0.128	0.500	1	11/16/2019 05:14	WG1381516
1,3-Dichloropropane	U		0.147	1.00	1	11/16/2019 05:14	WG1381516
cis-1,3-Dichloropropene	U		0.0976	0.500	1	11/16/2019 05:14	WG1381516
trans-1,3-Dichloropropene	U		0.222	0.500	1	11/16/2019 05:14	WG1381516
trans-1,4-Dichloro-2-butene	U	UJ UO	0.257	5.00	1	11/16/2019 05:14	WG1381516
2,2-Dichloropropane	U		0.0929	0.500	1	11/16/2019 05:14	WG1381516
Di-isopropyl ether	U		0.0924	0.500	1	11/16/2019 05:14	WG1381516
Ethylbenzene	0.344	U	0.158	0.500	1	11/16/2019 05:14	WG1381516
Hexachloro-1,3-butadiene	U		0.157	1.00	1	11/16/2019 05:14	WG1381516
2-Hexanone	1.26	U	0.757	5.00	1	11/16/2019 05:14	WG1381516
n-Hexane	U		0.305	5.00	1	11/16/2019 05:14	WG1381516
Iodomethane	U	UJ UO	0.377	10.0	1	11/16/2019 05:14	WG1381516
Isopropylbenzene	U		0.126	0.500	1	11/16/2019 05:14	WG1381516
p-Isopropyltoluene	U		0.138	0.500	1	11/16/2019 05:14	WG1381516
2-Butanone (MEK)	88.9		1.28	5.00	1	11/16/2019 05:14	WG1381516
Methylene Chloride	U		1.07	2.50	1	11/16/2019 05:14	WG1381516
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	11/16/2019 05:14	WG1381516
Methyl tert-butyl ether	U		0.102	0.500	1	11/16/2019 05:14	WG1381516
Naphthalene	0.215	U	0.174	2.50	1	11/16/2019 05:14	WG1381516
n-Propylbenzene	U		0.162	0.500	1	11/16/2019 05:14	WG1381516
Styrene	U		0.117	0.500	1	11/16/2019 05:14	WG1381516
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	11/16/2019 05:14	WG1381516
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	11/16/2019 05:14	WG1381516
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	11/16/2019 05:14	WG1381516
Tetrachloroethene	1570		99.5	250	500	11/19/2019 18:45	WG1382748
Toluene	0.519		0.412	0.500	1	11/16/2019 05:14	WG1381516
1,2,3-Trichlorobenzene	U		0.164	0.500	1	11/16/2019 05:14	WG1381516
1,2,4-Trichlorobenzene	U		0.355	0.500	1	11/16/2019 05:14	WG1381516
1,1,1-Trichloroethane	U		0.0940	0.500	1	11/16/2019 05:14	WG1381516
1,1,2-Trichloroethane	U		0.186	0.500	1	11/16/2019 05:14	WG1381516
Trichloroethene	794		76.5	250	500	11/19/2019 18:45	WG1382748
Trichlorofluoromethane	U		0.130	2.50	1	11/16/2019 05:14	WG1381516
1,2,3-Trichloropropane	U	UJ UO	123	1250	500	11/19/2019 18:45	WG1382748
1,2,4-Trimethylbenzene	0.326	U	0.123	0.500	1	11/16/2019 05:14	WG1381516
1,2,3-Trimethylbenzene	0.506		0.0739	0.500	1	11/16/2019 05:14	WG1381516
1,3,5-Trimethylbenzene	U		0.124	0.500	1	11/16/2019 05:14	WG1381516
Vinyl acetate	U		0.645	5.00	1	11/16/2019 05:14	WG1381516
Vinyl chloride	1560		59.0	250	500	11/19/2019 18:45	WG1382748
Xylenes, Total	0.573	U	0.316	1.50	1	11/16/2019 05:14	WG1381516
(S) Toluene-d8	97.8			80.0-120		11/16/2019 05:14	WG1381516
(S) Toluene-d8	109			80.0-120		11/19/2019 18:45	WG1382748
(S) 4-Bromofluorobenzene	96.6			77.0-126		11/16/2019 05:14	WG1381516

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 1/6/2020



Volatile Organic Compounds (GC/MS) by Method 8260C/8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 4-Bromofluorobenzene	108			77.0-126		11/19/2019 18:45	WG1382748
(S) 1,2-Dichloroethane-d4	105			80.0-125		11/14/2019 00:21	WG1380039
(S) 4-Bromofluorobenzene	101			75.0-120		11/14/2019 00:21	WG1380039
(S) Toluene-d8	96.5			80.0-120		11/14/2019 00:21	WG1380039
(S) 1,2-Dichloroethane-d4	95.8			70.0-130		11/16/2019 05:14	WG1381516
(S) 1,2-Dichloroethane-d4	116			70.0-130		11/19/2019 18:45	WG1382748

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Sample Narrative:

L1159108-05 WG1381516, WG1382748: Not all compounds reportable at lower dilution.

L1159108-05 WG1381516, WG1382748: Cannot be re-analyzed at a lower dilution due to high levels of target analytes.

JC 1/6/2020

MEMORANDUM

TO: Project File **DATE:** December 9, 2019
FROM: Jessie Compeau
SUBJECT: Laboratory Data Validation Review
PROJECT: American Linen Data Validation
PROJECT #: 1413.001.02.501F
TASK: EIM Data Validation Level EPA2A for November 2019 – Soil Vapor Samples
LAB: Pace Sample Delivery Groups (SDG): L1156530

Three (3) soil vapor samples (including one field duplicate) were collected as part of the ongoing sampling event at the Former American Linen Supply Site, in Seattle, Washington on November 1, 2019. The samples were shipped and delivered to Pace Lab Sciences (Pace) of Mount Juliet, TN for laboratory analysis. Samples were analyzed for the following:

- Volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method TO-15

The quality assurance review of the sample data is summarized below.

DATA QUALIFICATIONS

Guidelines established by USEPA for a limited data validation review of analytical data along with PACE control limit criteria were used to validate the data. The comments presented in this memorandum refer to the laboratory's performance in meeting the quality control criteria outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2017). Following Guidelines, non-project-specific laboratory duplicates and matrix spike results were not evaluated as part of this data validation.

DATA VALIDATION

Completeness

All samples were collected and analyzed as requested.

Sample Collection and Preservation

The laboratory supplied a Summa Canister™ canister (1Liter) for the air sample. The sample was shipped, delivered by FedEx, and received in good condition by the laboratory. The sample was collected, handled, and delivered in an appropriate manner. No data qualifications were warranted based upon sampling techniques.

Holding Times

The analyses for VOCs by Method TO-15 were performed within the 30-day recommended holding time limit for the air samples collected in Summa canisters. All holding time criteria are met.

Initial and Continuing Calibration

Initial and continuing calibration data for this project are retained by the laboratory and available for review if necessary. Case narrative and laboratory notes do not indicate that there are any issues with calibration.

Method Blank Results

A laboratory method blank is included with the analytical batch per method requirement. The target analytes were not detected in the method blank at or above the RDLs.

Trip Blank Results

A trip blank was not required for the VOCs by TO-15 analyses. No action is taken other than to note this.

Field Duplicate Analyses

Field duplicate sample pair is as follows:

- SDG L1156530: Samples SV01-110119 and SV01-110119-D

Target analyte results are comparable and within a relative percent difference (RPD) of 30% for the field duplicate pair with the following exceptions:

- SDG L1156530: Samples SV01-110119 and SV01-110119-D – Multiple VOC results are not comparable with RPDs greater than 30% (for results < 5X RDL the absolute difference < 1X RDL). **Field duplicate results for 1,1-dichloroethane, ethanol, dichlorodifluoromethane, n-hexane, methylene chloride, 2-propanol, tetrachloroethene, toluene, and 1,1,1-trichloroethene are estimated and qualified (UJ/J).**

Laboratory Duplicate/Replicate Analyses

A laboratory replicate was not performed. Refer to the Laboratory Control Sample section for additional information.

Surrogate Recoveries

The surrogate percent recovery (% R) results for the VOCs by TO-15 air samples, method blank, and laboratory control samples are within the laboratory surrogate control limits of 60 -140% R. No data qualifications were warranted.

Laboratory Control Samples

A laboratory control sample/laboratory control sample duplicate (LCS/LCSD) were analyzed for the VOCs by TO-15 along with each analytical batch. The LCS/LCSD recovery and relative percent differences (RPDs) for all control compounds met laboratory control limit criteria.

Matrix Spike/Matrix Spike Duplicates

A matrix spike/matrix spike duplicate (MS/MSD) is not required for the VOCs by TO-15 method.

Other Quality Control Issues

No laboratory quality control issues were identified in the laboratory report with the following discussion:

- Electronic data deliverables (EDDs) for these SDGs were provided by the laboratory and data validator qualifiers were entered. In some cases, different chemical synonyms are used between the EDD and the hardcopy however associated Chemical Abstracts Service (CAS) numbers are provided in the EDD to confirm chemical identifications.

Quantitation Limits

Results of the VOCs by TO-15 analysis are reported based on laboratory MRLs (assuming standard temperature and pressure is equal to 24.45) and reported in units of ppbv and $\mu\text{g}/\text{m}^3$.

The RDLs indicate the minimum quantity of a target analyte that can be confidently determined by the reference method. The RDLs were acceptable for the project; therefore, no data qualifications were warranted.

Data Assessment

The laboratory data reported for this project were reviewed based on the criteria outlined in:

- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2017).

No data qualifiers are assigned. All data are judged to be acceptable for their intended use.



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	11.6	27.6		1	WG1375952
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1375952
Benzene	71-43-2	78.10	0.200	0.639	0.225	0.719		1	WG1375952
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1375952
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1375952
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1375952
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1375952
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1375952
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1375952
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1375952
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1375952
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1375952
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1375952
Chloromethane	74-87-3	50.50	0.200	0.413	0.384	0.793		1	WG1375952
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1375952
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1375952
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1375952
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1375952
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1375952
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1375952
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1375952
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1375952
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND	UJ	1	WG1375952
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1375952
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1375952
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1375952
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1375952
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1375952
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1375952
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1375952
Ethanol	64-17-5	46.10	0.630	1.19	22.3	42.0	J	1	WG1375952
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1375952
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1375952
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	ND	ND		1	WG1375952
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.488	2.41	J	1	WG1375952
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1375952
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1375952
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1375952
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1375952
n-Hexane	110-54-3	86.20	0.200	0.705	2.24	7.90	J	1	WG1375952
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1375952
Methylene Chloride	75-09-2	84.90	0.200	0.694	7.18	24.9	J	1	WG1375952
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1375952
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1375952
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1375952
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1375952
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1375952
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1375952
2-Propanol	67-63-0	60.10	1.25	3.07	6.65	16.3	J	1	WG1375952
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1375952
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1375952
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1375952
Tetrachloroethylene	127-18-4	166	0.200	1.36	ND	ND	UJ	1	WG1375952
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1375952
Toluene	108-88-3	92.10	0.200	0.753	1.43	5.39	J	1	WG1375952
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1375952

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	3.63	19.7	J	1	WG1375952
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1375952
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1375952
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1375952
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1375952
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1375952
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1375952
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1375952
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1375952
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1375952
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1375952
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		95.9				WG1375952

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

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Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	8.72	20.7		1	WG1375952
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1375952
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1375952
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1375952
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1375952
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1375952
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1375952
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1375952
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1375952
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1375952
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1375952
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1375952
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1375952
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1375952
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1375952
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1375952
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1375952
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1375952
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1375952
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1375952
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1375952
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1375952
1,1-Dichloroethane	75-34-3	98	0.200	0.802	0.853	3.42	J	1	WG1375952
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1375952
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1375952
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1375952
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1375952
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1375952
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1375952
1,4-Dioxane	123-91-1	88.10	0.200	0.721	0.221	0.796		1	WG1375952
Ethanol	64-17-5	46.10	0.630	1.19	10.2	19.2	J	1	WG1375952
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1375952
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1375952
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	ND	ND		1	WG1375952
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	ND	ND	UJ	1	WG1375952
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1375952
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1375952
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1375952
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1375952
n-Hexane	110-54-3	86.20	0.200	0.705	ND	ND	UJ	1	WG1375952
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1375952
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND	UJ	1	WG1375952
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1375952
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1375952
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1375952
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1375952
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1375952
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1375952
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND	UJ	1	WG1375952
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1375952
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1375952
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1375952
Tetrachloroethylene	127-18-4	166	0.200	1.36	0.405	2.75	J	1	WG1375952
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1375952
Toluene	108-88-3	92.10	0.200	0.753	0.431	1.62	J	1	WG1375952
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1375952

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	12.6	68.5	J	1	WG1375952
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1375952
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1375952
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1375952
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1375952
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1375952
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1375952
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1375952
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1375952
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1375952
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1375952
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		93.5				WG1375952

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

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Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	ND	ND		1	WG1375952
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1375952
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1375952
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1375952
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1375952
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1375952
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1375952
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1375952
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1375952
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1375952
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1375952
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1375952
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1375952
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1375952
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1375952
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1375952
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1375952
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1375952
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1375952
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1375952
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1375952
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1375952
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1375952
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1375952
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1375952
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1375952
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1375952
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1375952
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1375952
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1375952
Ethanol	64-17-5	46.10	0.630	1.19	16.6	31.3		1	WG1375952
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1375952
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1375952
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.851	4.78		1	WG1375952
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	ND	ND		1	WG1375952
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1375952
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1375952
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1375952
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1375952
n-Hexane	110-54-3	86.20	0.200	0.705	0.309	1.09		1	WG1375952
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1375952
Methylene Chloride	75-09-2	84.90	0.200	0.694	1.28	4.44		1	WG1375952
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1375952
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1375952
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1375952
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1375952
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1375952
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1375952
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1375952
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1375952
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1375952
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1375952
Tetrachloroethylene	127-18-4	166	0.200	1.36	2.14	14.5		1	WG1375952
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1375952
Toluene	108-88-3	92.10	0.200	0.753	0.386	1.45		1	WG1375952
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1375952

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1375952
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1375952
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1375952
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1375952
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1375952
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1375952
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1375952
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1375952
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1375952
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1375952
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1375952
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		102				WG1375952

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

JC 12/9/19

Sample Location	Sample ID	Lab ID	Sample Date	SDG	GRO	PCE	TCE	cDCE	VC	chromatographic analysis
MW-150	MW150-031319	L1079374-08	3/13/2019 12:50	L1079374	7540	36	262	15000	479	no discernable petroleum pattern
MW-135	MW135-031319	L1079374-09	3/13/2019 13:00	L1079374	32700	57300	8150	37200	706	no discernable petroleum pattern
MW-149	MW149-031319	L1079374-10	3/13/2019 13:45	L1079374	15300	2630	2770	30800	285	no discernable petroleum pattern
MW-151	MW151-031219	L1079374-04	3/12/2019 14:20	L1079374	143	B 0.981	1.36	196	24.9	no discernable petroleum pattern
MW-163	MW163-031219	L1079374-05	3/12/2019 14:30	L1079374	319	B 282	334	56.9	1.1	no discernable petroleum pattern
MW-164	MW164-031219	L1079374-06	3/12/2019 16:00	L1079374	565	B 444	327	529	7.8	no discernable petroleum pattern
MW104	MW104-031319	L1079374-11	3/13/2019 15:33	L1079374	124	B 31.6	75.7	83	25.9	no discernable petroleum pattern
MW-162	MW162-031219	L1079439-09	3/12/2019 11:10	L1079439	690	613	538	758	46.5	no discernable petroleum pattern
MW-152	MW152-031219	L1079439-10	3/12/2019 12:20	L1079439	55900	1000 U	18700	127000	11000	no discernable petroleum pattern
MW104	MW104-042319	L1091936-03	4/23/2019 8:35	L1091936	174	15.9	56.9	162	21.1 J	no discernable petroleum pattern
MW-147	MW147-042319	L1091936-05	4/23/2019 14:00	L1091936	139	0.199 U	5.13	322	499 UJ	no discernable petroleum pattern
W-MW-02	W-MW-02-042319	L1091958-01	4/23/2019 7:45	L1091958	429 J	0.199 U	40.1	672	81 J	no discernable petroleum pattern
MW-146	MW-146-042419	L1092400-02	4/24/2019 9:55	L1092400	88 J	1.5	12.4	257	383 J	no discernable petroleum pattern
MW-908	MW-908-042419	L1092440-03	4/24/2019 7:00	L1092440	2600 J	1440	717	1760	3.34 J	no discernable petroleum pattern
MW-156	MW-156-042419	L1092440-05	4/24/2019 12:30	L1092440	2570 J	1430	727	1770	3.21 J	no discernable petroleum pattern
MW-157	MW-157-042419	L1092440-06	4/24/2019 14:10	L1092440	3210 J	9.95 U	8.52 J	3550	622	no discernable petroleum pattern
MW-9	MW-9-042619	L1093242-08	4/26/2019 13:00	L1093242	121 J	157	45.2	75.1	0.861 J	no discernable petroleum pattern
MW107	MW107-050119	L1094387-07	5/1/2019 11:10	L1094387	481	0.199 U	99.9	1250	374	no discernable petroleum pattern
MW120	MW-120-071619	L1119171-08	7/16/2019 0:00	L1119171	152 J+	134	40.1	74.9	1.01	no discernable petroleum pattern
BB-8	BB-8-071719	L1119726-05	7/17/2019 0:00	L1119726	112 J+	169	28.9	19.3	0.118 U	no discernable petroleum pattern
MW113	MW113-071719	L1119726-02	7/17/2019 0:00	L1119726	2560 J+	3.14	20.4	4940	103	no discernable petroleum pattern
MW-147	MW-147-071819	L1120206-06	7/18/2019 0:00	L1120206	175 J+	0.199 U	4.79	219	446	no discernable petroleum pattern
MW-9	MW-912-071819	L1120206-03	7/18/2019 0:00	L1120206	170 J+	0.199 U	4.72	286	425	no discernable petroleum pattern
MW-146	MW-146-071919	L1120698-05	7/19/2019 0:00	L1120698	46.3 J	3.08	14.4	257	580	no discernable petroleum pattern
MW-146	MW-913-071919	L1120698-09	7/19/2019 0:00	L1120698	262 J+	2.8	15.9	371 J	842 J	no discernable petroleum pattern
MW104	MW-104-072219	L1121210-02	7/22/2019 0:00	L1121210	50.4 J	0.282 J	28.3	160	57.1	no discernable petroleum pattern
MW107	MW-107-072219	L1121210-07	7/22/2019 0:00	L1121210	210 J+	1.99 U	2.62 J	290	307	no discernable petroleum pattern
MW-156	MW-156-072219	L1121210-06	7/22/2019 0:00	L1121210	3100 J+	232	1270	2310	82	no discernable petroleum pattern
MW-157	MW-157-072219	L1121210-05	7/22/2019 0:00	L1121210	3880 J+	19.9 U	27.6	4530	666	no discernable petroleum pattern
MW-146	MW-146-101419	L1149851-02	10/14/2019 10:15	L1149851	1310	2.03	6.77	1350	2830	no discernable petroleum pattern
MW-147	MW-147-101419	L1149851-08	10/14/2019 13:55	L1149851	513	0.199 U	3.38	597	1410	no discernable petroleum pattern
MW107	MW-107-101519	L1150336-09	10/15/2019 14:00	L1150336	365	41.7	138	333	216	no discernable petroleum pattern
MW-143	MW-143-101619	L1150936-07	10/16/2019 14:45	L1150936	2000	2.35	28	2510	1180	no discernable petroleum pattern
MW120	MW-918-101719	L1151401-01	10/17/2019 8:30	L1151401	113	73.9	26.9	49.8	2.25	no discernable petroleum pattern
MW-156	MW-156-101719	L1151401-02	10/17/2019 9:40	L1151401	1450	682	430	1420	51.1	no discernable petroleum pattern
MW120	MW-120-101719	L1151401-04	10/17/2019 12:35	L1151401	106	61.5	22.3	48.8	2.31	no discernable petroleum pattern
FMW-129	FMW-129-102119	L1152340-07	10/21/2019 12:25	L1152340	141	114	198	350	0.259 J	no discernable petroleum pattern
BB-8	MW-918-102219	L1152823-01	10/22/2019 9:30	L1152823	174	169	48.3	30.4	0.152 J	no discernable petroleum pattern
BB-8	BB-8-102219	L1152823-05	10/22/2019 12:50	L1152823	176	135	46.6	31.8	0.162 J	no discernable petroleum pattern
MW-185	MW-185-103119	L1156093-01	10/31/2019 11:00	L1156093	446	2.57	3.51	547	179	no discernable petroleum pattern
MW-165	MW-165-110419	L1157016-01	11/4/2019 0:00	L1157016	3940	3.95	20.2	4180	642	no discernable petroleum pattern
MW-166	MW-166-110419	L1157016-02	11/4/2019 0:00	L1157016	4360	0.199 U	0.467 J	5130	1420	no discernable petroleum pattern
MW-170	MW-170-110519	L1157450-04	11/5/2019 0:00	L1157450	22700	105	125	27600	6710	no discernable petroleum pattern
MW-171	MW-171-110519	L1157450-02	11/5/2019 0:00	L1157450	371	1.99 U	1.53 U	509	13.3	no discernable petroleum pattern
MW-172	MW-172-110519	L1157450-01	11/5/2019 0:00	L1157450	4960	8810	3280	643	2.64	no discernable petroleum pattern
MW-169	MW-169-110519	L1157450-03	11/5/2019 0:00	L1157450	83.4 J	2.72	1.15	48.8	1500	no discernable petroleum pattern

Sample Location	Sample ID	Lab ID	Sample Date	SDG	GRO	PCE	TCE	cDCE	VC	chromatographic analysis
MW-177	MW-177-110619	L1158133-04	11/6/2019 0:00	L1158133	122000	3180	1710	131000	11000	no discernable petroleum pattern
MW-177	MW-920-110619	L1158133-01	11/6/2019 0:00	L1158133	127000	1910	1120	93100	5470	no discernable petroleum pattern
MW-178	MW-178-110619	L1158133-03	11/6/2019 0:00	L1158133	249	3.98 U	3.06 U	5.28 J	877	no discernable petroleum pattern
MW-179	MW-179-110619	L1158133-05	11/6/2019 0:00	L1158133	2310	50.5	46.2 J	3780	533	no discernable petroleum pattern
MW-180	MW-180-110619	L1158133-02	11/6/2019 0:00	L1158133	220	2.1 J	1.87 J	155	76.6	no discernable petroleum pattern
MW-181	MW-181-110819	L1159108-04	11/8/2019 0:00	L1159108	23900	99.5 U	76.5 U	30800	10700	no discernable petroleum pattern
MW-181	MW-921-110819	L1159108-01	11/8/2019 0:00	L1159108	23700	49.8 U	1.2 J	26300	9110	no discernable petroleum pattern
MW-182	MW-182-110819	L1159108-05	11/8/2019 0:00	L1159108	14100	1570	794	19200	1560	no discernable petroleum pattern
MW-184	MW-184-110819	L1159108-02	11/8/2019 0:00	L1159108	2310	1590	733	79	11.8 U	no discernable petroleum pattern
MW-183	MW-183-110819	L1159108-03	11/8/2019 0:00	L1159108	45 J	0.199 U	0.193 J	59.9	4.29	no discernable petroleum pattern

From: [Brian Ford](#)
To: [Shannon E. McKernan](#)
Cc: [Kim Vik](#); [Jessie Compeau](#)
Subject: RE: Elevated Gasoline results with CVOC detections for American Linen Project
Date: January 8, 2020 8:39:52 AM
Attachments: [GRO CVOCs 2019-01-07.xls.xlsx](#)

Shannon,

I have attached the chromatographic analysis.

GX is used to measure gasoline range organics. The instrument is calibrated using a gasoline standard. The GX instrument/method is non-selective, so it detects all organics in the gasoline range, and is not selective for petroleum based products. CVOCs are gasoline range organics, and therefore should be detected by GX. The method is working as intended. Let me know if you need any other information.

Thanks,

Brian Ford

Project Manager

Pace Analytical National Center for Testing & Innovation

12065 Lebanon Road | Mt. Juliet, TN 37122

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From: Shannon E. McKernan <SMcKernan@pesenv.com>
Sent: Tuesday, January 7, 2020 5:05 PM
To: Brian Ford <BFord@pacenational.com>
Cc: Kim Vik <KVik@pesenv.com>; Jessie Compeau <JCompeau@pesenv.com>
Subject: RE: Elevated Gasoline results with CVOC detections for American Linen Project

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Thanks Brian. We will plan on evaluating which chromatograms we would like to have reviewed and communicating them to you moving forward.

For prior samples, I've attached a list of sample IDs with their corresponding SDGs. The list includes samples where the GRO concentration and CVOC concentrations are elevated. Please review the chromatograms/analysis and let us know where it looks like the reported GRO concentration is potentially detected or elevated due to high CVOC concentrations.

Also, we've been having some discussion internally and I was hoping you could clarify some chemistry confusion. What is the difference between a "gasoline" concentration vs a "GRO" concentration, and how do the standards for reporting those vary? Is it an over simplification to say using a gasoline standard rather than gasoline range standard provides an accurate gasoline result?

Thanks so much!
Shannon

From: Brian Ford <BFord@pacenational.com>
Sent: January 6, 2020 1:25 PM
To: Shannon E. McKernan <SMcKernan@pesenv.com>
Cc: Kim Vik <KVik@pesenv.com>; Jessie Compeau <JCompeau@pesenv.com>
Subject: RE: Elevated Gasoline results with CVOC detections for American Linen Project

Shannon,

The best way to proceed would be to continue to send me any samples which need chromatograms reviewed for a gasoline pattern. That will ensure data is reported in a timely manner and will keep your (and our) costs low.

If we need to review every GRO detection sample chromatogram going forward, we can do that, but we may need to increase the turn-around time and pricing for this project. Let me know the best way to proceed going forward. Also, if we go this route, let me know if every GRO detection needs to be evaluated, or only above a certain screening level.

Thanks,

Brian Ford

Project Manager

Pace Analytical National Center for Testing & Innovation

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From: Shannon E. McKernan <SMcKernan@pesenv.com>
Sent: Monday, January 6, 2020 3:18 PM
To: Brian Ford <BFord@pacenational.com>
Cc: Kim Vik <KVik@pesenv.com>; Jessie Compeau <JCompeau@pesenv.com>
Subject: Elevated Gasoline results with CVOC detections for American Linen Project

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Brian-

We've been reviewing the fourth quarter results for groundwater sampling at American Linen. In the past, we have communicated with you about detected/elevated gasoline results that may have been the result of high detections of CVOCs. I believe in the past, we have reviewed results and then asked for a review of select samples to have PACE/ESC confirm whether gasoline results are actually likely to be low/no level detections due to elevated CVOCs. I am putting a list together with a similar request for this and some previous sampling events, which I am hoping to send tomorrow.

For future sampling events, is it possible to have the lab reporting procedure for American Linen samples include indications when Gasoline/CVOC interference is occurring? For quality purposes, we would like the observation to come from the lab, rather than reviewing it internally and circling it back to the lab.

Let me know what your thoughts are.

-Shannon