

May 27, 2021



Blair Rollins
Environmental Specialist
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REPORT OF WORK COMPLETED	
COGCC Location Name (ID)	N PARACHUTE /WF15A-23 F23596 (335667)
Operator Location Name	F23 596 Flowline
COGCC Spill/Release Point ID	479806
Legal Description	SENW Sec. 23 T5S-R96W
Coordinates (Lat/Long)	39.601606 / -108.140351
County	Garfield County, Colorado

Mr. Rollins,

Confluence Compliance Companies, LLC (Confluence) prepared this Report of Work Completed (ROWC) for Caerus Oil & Gas LLC (Caerus) to document recent remediation activities associated with a release of produced water at the F23 596 Well Pad (Location). The Location is 11.1 miles north-northwest of Parachute, Colorado in Garfield County. Additional information on the Location and the associated remediation project is provided in the title block above, the attached Site Diagram, and laboratory analytical reports. This ROWC provides background on the Location, methods used to complete the remedial investigation, results of the investigation, and recommendations for how to proceed with this information.

Background

On April 5, 2021, an unknown volume of produced water and condensate was released after a pressure test failed on well N. PARACHUTE #WF 14A-23F23596 (API: 05-045-14421). The release was confined to the working surface of the pad. The well was shut in and excavation activities were conducted immediately to determine the point of release (POR).

Methodology

On April 20, 2021, Confluence coordinated and oversaw excavation of impacted soil at the Location. Excavation activities were directed by Confluence personnel who characterized the soil using visual and olfactory observations and field-screened soil samples for volatile organic compounds using a photoionization detector (PID). Following completion of excavation activities, confirmation soil samples were collected from the base and sidewalls of the open excavation. The total depth of the excavation was 13 feet below ground surface (bgs). No groundwater was encountered during excavation activities. Soil samples were collected in laboratory prepared jars, immediately placed on ice, and shipped for laboratory analysis of constituents listed in COGCC Table 915-1.

On May 4, 2021, Confluence returned to the Location to advance the excavation northeast based on laboratory results of initial excavation samples indicating a COGCC Table 915-1 exceedance of

sodium adsorption ratio (SAR). Due to health and safety concerns associated with the proximity of the wellheads and the active flowlines, excavation activities were conducted by hand. The excavation was advanced horizontally, approximately 10 feet northwest. Following completion of excavation activities, one soil sample was collected from the northwest sidewall and submitted for laboratory analysis of SAR. Additionally, Confluence investigated the groundwater monitoring well located 246 feet west of the excavation. The well is owned by Caerus and registered with the Colorado Division of Water Resources (DWR) under permit number 295164. An oil/water interface probe was used to gauge the well, and it was observed to be dry with a total depth of 37.07 feet below top of casing. The well is approximately 17 feet lower in elevation than the Location pad surface.

During remediation activities, excavated soil was stockpiled on site. Following completion of excavation activities, a representative composite soil sample was collected from the stockpiles. The stockpile sample was collected, managed, and analyzed as previously described. The stockpile location and samples are illustrated in the attached Site Diagram.

Results

These results summarize observations from onsite support of excavation efforts and associated laboratory analytical results. For organizational and presentation purposes the results summary is divided between general observations of lithology and hydrogeology for the entire Location and excavation activities.

Collected spatial data are depicted in the attached Site Diagrams. Laboratory analytical reports are attached and summarized in the Laboratory Results Summary Table. All excavated soil has been stockpiled and stabilized.

Lithology and Hydrogeology

Lithology at the Location is characterized by clayey and silty gravels with angular and subangular cobbles throughout. Groundwater is expected to flow south towards Parachute Creek and ultimately the Colorado River, located 11.2 miles southeast of the Location.

Excavation Results

Laboratory results of final excavation soil samples indicate compliance with COGCC Table 915-1 with the exception of arsenic and pH. Arsenic exceedances range from 17.5 milligrams per kilogram (mg/kg) at the south sidewall of the excavation to 20.9 mg/kg at the east sidewall. Laboratory results indicate pH exceedances ranging from 8.52 at the east wall to 9.1 at the base of the excavation. All other excavation samples and analytes are compliant with COGCC Table 915-1. Groundwater was not encountered during excavation activities. Laboratory results of the excavated soil stockpile indicate compliance with COGCC Table 915-1 with the exception of arsenic and pH, with an arsenic concentration of 21.4 mg/kg and a pH value of 8.85.

Analysis and Recommendations

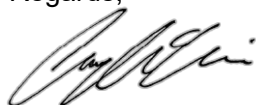
Laboratory results of final excavation and stockpile soil samples indicate concentrations of arsenic and pH values exceeding COGCC Table 915-1 remain in the sidewalls and base of the excavation as well as the stockpile. However, background data suggests that these exceedances are within naturally occurring levels near the Location. Background samples collected from the D23A (COGCC Location ID 335593) indicate arsenic concentrations ranging up to 20.78 mg/kg. Based on Footnote



11 of COGCC Table 915-1, the maximum allowable concentration of arsenic is 1.25 times the background concentration of 20.78 mg/kg, which equals 25.98 mg/kg. Background samples collected from the K25A (COGCC Location ID 335649) indicate a pH value of 9.35. Based on these data, laboratory results of excavation and stockpile samples indicate compliance with COGCC Table 915-1, and no additional investigation or remediation activities are warranted. Confluence recommends that Caerus request closure of Spill/Release Point ID 479806 using a COGCC Supplemental eForm 19. Additionally, Confluence recommends that Caerus request COGCC approval to use the excavated soil stockpile to backfill the excavation area.

Confluence is grateful for the opportunity to support you with this project. If you have any questions about the methods, results, or recommendations presented here, please do not hesitate to contact me.

Regards,



Chris McKisson
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Attachments

- Site Diagram
- Laboratory Results Summary Table
- Laboratory Analytical Reports



Site Diagram Excavation

Caerus Oil & Gas LLC

F23 596
(N PARACHUTE WF15A-23 F23596)
COGCC Location ID: 335667
Garfield County
SENW Sec. 23 T5S-R96W



Legend






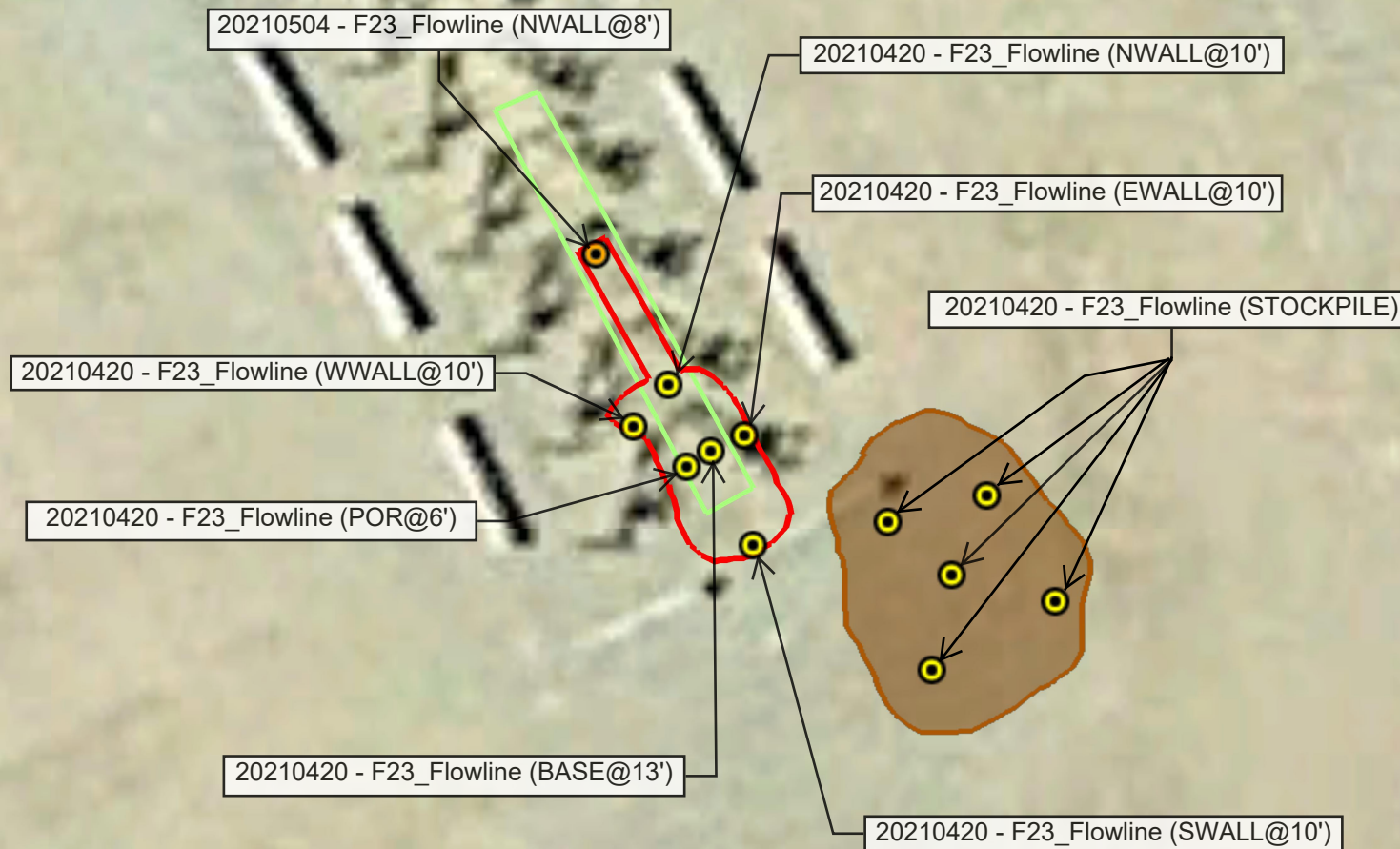
-  Remedial Excavation– 05/04/2021
-  Flowline Trench– 05/04/2021
-  Soil Stockpile– 04/20/2021
-  Soil sample – 04/20/2021
-  Soil sample – 05/04/2021

Illustration discrepancies may be present in this diagram due to the inherent limitations of data accuracy for both project data and the underlying aerial imagery. The position of illustrated data may have been manually adjusted to align with the aerial imagery in a manner more representative of field conditions for presentation purposes only.

Map created by: Andrew Smith on 05/26/2021.



Lab Results Summary Table				Organic Compounds (mg/kg [ppm])																				
COGCC Table 915-1 Groundwater Protection -->				500	NA	NA	NA	0.0026	0.69	0.78	9.9	0.0081	0.0087	0.55	5.8	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98
COGCC Table 915-1 Residential -->				500	NA	NA	NA	1.2	490	5.8	58	30	27	360	1800	1.1	0.11	1.1	11	110	0.11	240	240	1.1
Location	Sample Date	Depth - Z (feet) below ground surface (bgs)	Sample ID	TPH (total volatile and extractable petroleum hydrocarbons) (GRO+DRO+ORO)	TPH-GRO (C6-C10) Low Fraction	TPH-DRO (C10-C28) High Fraction	TPH-ORO (C28-C36) High Fraction	Benzene	Toluene	Ethylbenzene	Xylenes - total (sum of o-, m-, p- isomers)	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Acenaphthene	Anthracene	Benzo(A)anthracene	Benzo(A)pyrene	Benzo(B)fluoranthene	Benzo(K)fluoranthene	Chrysene	Dibenzo(A,H)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-C,D)pyrene
F23 596	4/20/2021	13	20210420 - F23_Flowline (BASE@13')	108.11	1.21	20.0	86.9	<0.00100	0.00135	0.00373	0.0661	0.0118	0.0296	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	0.00491	<0.00600	0.00291	<0.00600	<0.00600
F23 596	4/20/2021	10	20210420 - F23_Flowline (EWALL@10')	163.65	3.35	57.3	103	0.000925	0.0118	0.00430	0.953	0.105	0.349	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	0.00334	<0.00600
F23 596	4/20/2021	0.5	20210420 - F23_Flowline (STOCKPILE)	49.82	1.92	20.5	27.4	<0.00100	0.00275	0.00107	0.0174	0.00443	0.0674	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
F23 596	4/20/2021	10	20210420 - F23_Flowline (NWALL@10')	68.98	1.98	15.4	51.6	0.00420	0.0380	0.0121	0.222	0.0122	0.0351	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
F23 596	4/20/2021	6	20210420 - F23_Flowline (POR@6')	707	255	296	156	0.00278	0.147	0.0688	2.13	0.501	0.695	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	0.0502	<0.00600
F23 596	4/20/2021	10	20210420 - F23_Flowline (SWALL@10')	274.13	1.03	77.1	196	0.000500	0.00455	0.0017	0.0272	0.0049	0.0497	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	0.00330	<0.00600
F23 596	4/20/2021	10	20210420 - F23_Flowline (WWALL@10')	443.54	1.54	245	197	0.000575	0.00293	<0.00250	0.0160	0.00343	0.0262	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	0.00758	<0.00600
F23 596	5/4/2021	2.5	20210504 - F23_Dumpline (BGE@2.5')	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
F23 596	5/4/2021	1	20210504 - F23_Dumpline (BGN@1')	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
F23 596	5/4/2021	1	20210504 - F23_Dumpline (BGS@1')	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
F23 596	5/4/2021	1	20210504 - F23_Dumpline (BGSE@1')	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
F23 596	5/4/2021	8	20210504 - F23_Flowline (NWALL@8')	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
D23A	3/15/2021	1.5	20210315_D23A_Background_N@18"	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
D23A	3/15/2021	1.33	20210315_D23A_Background_E@16"	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
D23A	3/15/2021	1.17	20210315_D23A_Background_S@14"	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Lab Results Summary Table								Soil Suitability for Reclamation				Metals (mg/kg [ppm])									
COGCC Table 915-1 Groundwater Protection -->				0.006	0.019	0.0038	1.3	4	6	6-8.3	2	0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
COGCC Table 915-1 Residential -->				18	24	2	180	4	6	6-8.3	2	0.68	15000	71	0.3	3100	400	1500	390	390	23000
Location	Sample Date	Depth - Z (feet) below ground surface (bgs)	Sample ID	1- Methyleneanthracene	2- Methyleneanthracene	Naphthalene	Pyrene	EC (Specific Conductance) (millimhos/centimeter) (by saturated paste method)	SAR (Sodium Adsorption Ratio) (calculation) (by saturated paste method)	pH (pH Units) (by saturated paste method)	Boron - Hot Water Soluble (mg/L)	Arsenic	Barium	Cadmium (mg/kg)	Chromium (VI)	Copper	Lead	Nickel	Selenium	Silver	Zinc
F23 596	4/20/2021	13	20210420 - F23_Flowline (BASE@13')	<0.0200	0.0104	0.00551	0.00575	0.526	4.92	9.10	0.547	19.6	389	0.527	<1.0	24.9	17.2	21.7	3.43	<1.0	55.6
F23 596	4/20/2021	10	20210420 - F23_Flowline (EWALL@10')	0.0265	0.0667	0.0338	0.00202	0.656	3.90	8.52	0.686	20.9	524	0.506	<1.0	25.9	16.7	23.5	2.13	<1.0	61.9
F23 596	4/20/2021	0.5	20210420 - F23_Flowline (STOCKPILE)	0.0149	0.0322	0.0161	0.00243	0.466	2.11	8.85	0.624	21.4	2440	0.349	<1.0	29.7	21.0	23.0	2.60	<1.0	68.8
F23 596	4/20/2021	10	20210420 - F23_Flowline (NWALL@10')	0.00732	0.0178	0.00814	<0.00600	2.27	22.6	8.71	0.919	18.4	405	0.551	<1.0	27.0	15.9	20.6	2.63	<1.0	64.0
F23 596	4/20/2021	6	20210420 - F23_Flowline (POR@6')	0.205	0.582	0.229	0.00455	0.42	2.49	8.59	0.487	15.0	2920	0.629	<1.0	29.4	16.7	17.4	2.61	<1.0	73.4
F23 596	4/20/2021	10	20210420 - F23_Flowline (SWALL@10')	0.0159	0.0289	0.0147	0.00363	0.467	1.87	8.70	0.625	17.5	2400	0.394	<1.0	27.5	18.8	23.1	2.30	<1.0	64.4
F23 596	4/20/2021	10	20210420 - F23_Flowline (WWALL@10')	0.0355	0.0781	0.0319	0.0101	0.390	1.64	8.85	0.603	19.5	2070	0.369	<1.0	26.2	14.9	18.3	2.65	<1.0	65.2
F23 596	5/4/2021	2.5	20210504 - F23_Dumpline (BGE@2.5')	NA	NA	NA	NA	0.861	0.755	8.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
F23 596	5/4/2021	1	20210504 - F23_Dumpline (BGN@1')	NA	NA	NA	NA	0.177	0.242	8.70	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
F23 596	5/4/2021	1	20210504 - F23_Dumpline (BGS@1')	NA	NA	NA	NA	0.237	0.0748	8.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
F23 596	5/4/2021	1	20210504 - F23_Dumpline (BGSE@1')	NA	NA	NA	NA	0.172	0.504	8.67	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
F23 596	5/4/2021	8	20210504 - F23_Flowline (NWALL@8')	NA	NA	NA	NA	NA	2.97	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
D23A	3/15/2021	1.5	20210315_D23A_Background_N@18"	NA	NA	NA	NA	0.53	0.46	8.1	NA	8.99	NA	NA	NA	NA	NA	NA	NA	NA	NA
D23A	3/15/2021	1.33	20210315_D23A_Background_E@16"	NA	NA	NA	NA	0.99	0.31	8	NA	20.78	NA	NA	NA	NA	NA	NA	NA	NA	NA
D23A	3/15/2021	1.17	20210315_D23A_Background_S@14"	NA	NA	NA	NA	0.27	0.37	8	NA	14.67	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Soil Suitability for Reclamation		
PROTECTION OF GROUNDWATER SOIL SCREENING LEVEL CONCENTRATION (mg/Kg)				<4.0		
RESIDENTIAL SOIL SCREENING LEVEL CONCENTRATION (mg/Kg)				mmhos/c	<6	6 - 8.3
Location	Sample Date	Sample Matrix	Matrix Notes	Electrical Conductivity (EC) (by saturated paste method)	Sodium Adsorption Ratio (SAR) by saturated paste method)	pH (by saturated paste method)
K25A	6/29/2010	Background	NW background	1.94	5.35	9.35

Caerus Oil and Gas

Sample Delivery Group: L1342745
Samples Received: 04/22/2021
Project Number:
Description: F23 596 Flowline

Report To: Brett Middleton
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:



Chris Ward
Project Manager

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Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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

SAMPLE SUMMARY

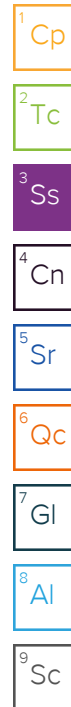
20210420-F23_FLOWLINE (POR@6) L1342745-01 Solid

Collected by
Andrew Smith

Collected date/time
04/20/21 10:30

Received date/time
04/22/21 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1658515	1	04/27/21 19:07	04/27/21 19:07	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1659898	1	05/01/21 11:03	05/01/21 18:26	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1659715	1	04/27/21 15:22	04/27/21 22:00	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1657331	1	04/26/21 23:41	04/27/21 17:27	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1662793	1	05/02/21 14:28	05/03/21 10:17	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1658188	1	04/26/21 15:11	04/28/21 09:51	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1662788	5	05/02/21 14:32	05/03/21 11:10	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1660774	25	04/25/21 12:56	04/30/21 08:09	TPR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1658969	1	04/25/21 12:56	04/26/21 14:30	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1661738	5	04/30/21 00:50	04/30/21 12:01	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1661740	1	04/30/21 00:27	04/30/21 10:44	TMM	Mt. Juliet, TN



20210420-F23_FLOWLINE(WWALL@10) L1342745-02 Solid

Collected by
Andrew Smith

Collected date/time
04/20/21 12:30

Received date/time
04/22/21 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1658515	1	04/27/21 19:10	04/27/21 19:10	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1659898	1	05/01/21 11:03	05/01/21 18:38	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1659715	1	04/27/21 15:22	04/27/21 22:00	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1657331	1	04/26/21 23:41	04/27/21 17:27	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1662793	1	05/02/21 14:28	05/03/21 10:20	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1658188	1	04/26/21 15:11	04/28/21 09:54	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1662788	5	05/02/21 14:32	05/03/21 11:14	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1659724	1	04/25/21 12:56	04/27/21 20:11	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1658969	1	04/25/21 12:56	04/26/21 14:49	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1661738	5	04/30/21 00:50	04/30/21 12:14	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1661740	1	04/30/21 00:27	04/30/21 11:02	TMM	Mt. Juliet, TN

20210420-F23_FLOWLINE(SWALL@10) L1342745-03 Solid

Collected by
Andrew Smith

Collected date/time
04/20/21 12:40

Received date/time
04/22/21 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1658515	1	04/27/21 19:13	04/27/21 19:13	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1659898	1	05/01/21 11:03	05/01/21 18:44	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1659715	1	04/27/21 15:22	04/27/21 22:00	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1657331	1	04/26/21 23:41	04/27/21 17:27	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1662793	1	05/02/21 14:28	05/03/21 10:23	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1658188	1	04/26/21 15:11	04/28/21 09:57	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1662788	5	05/02/21 14:32	05/03/21 11:17	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1659724	1	04/25/21 12:56	04/27/21 20:34	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1658969	1	04/25/21 12:56	04/26/21 15:08	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1661738	10	04/30/21 00:50	04/30/21 11:48	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1661740	1	04/30/21 00:27	04/30/21 11:20	TMM	Mt. Juliet, TN

20210420-F23_FLOWLINE(EWALL@10) L1342745-04 Solid

Collected by
Andrew Smith

Collected date/time
04/20/21 12:50

Received date/time
04/22/21 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1658515	1	04/27/21 19:16	04/27/21 19:16	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1659898	1	05/01/21 11:03	05/01/21 18:49	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1659715	1	04/27/21 15:22	04/27/21 22:00	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1657331	1	04/26/21 23:41	04/27/21 17:27	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1662793	1	05/02/21 14:28	05/03/21 10:26	EL	Mt. Juliet, TN

SAMPLE SUMMARY

20210420-F23_FLOWLINE(EWALL@10) L1342745-04 Solid

Collected by
Andrew Smith

Collected date/time
04/20/21 12:50

Received date/time
04/22/21 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1658188	1	04/26/21 15:11	04/28/21 10:00	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1662788	5	05/02/21 14:32	05/03/21 11:27	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1659724	1	04/25/21 12:56	04/27/21 20:58	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1658969	1	04/25/21 12:56	04/26/21 15:26	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1661738	2	04/30/21 00:50	04/30/21 11:22	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1661740	1	04/30/21 00:27	04/30/21 11:38	TMM	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

20210420-F23_FLOWLINE(BASE@13) L1342745-05 Solid

Collected by
Andrew Smith

Collected date/time
04/20/21 12:55

Received date/time
04/22/21 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1658515	1	04/27/21 19:19	04/27/21 19:19	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1659898	1	05/01/21 11:03	05/01/21 18:54	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1659715	1	04/27/21 15:22	04/27/21 22:00	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1657331	1	04/26/21 23:41	04/27/21 17:27	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1662793	1	05/02/21 14:28	05/03/21 10:29	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1658188	1	04/26/21 15:11	04/28/21 10:03	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1662788	5	05/02/21 14:32	05/03/21 11:31	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1659724	1	04/25/21 12:56	04/27/21 21:21	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1658969	1	04/25/21 12:56	04/26/21 15:45	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1661738	1	04/30/21 00:50	04/30/21 10:17	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1661740	1	04/30/21 00:27	04/30/21 11:55	TMM	Mt. Juliet, TN

20210420-F23_FLOWLINE(NWALL@10) L1342745-06 Solid

Collected by
Andrew Smith

Collected date/time
04/20/21 13:05

Received date/time
04/22/21 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1658515	1	04/27/21 19:21	04/27/21 19:21	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1659898	1	05/01/21 11:03	05/01/21 18:59	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1659715	1	04/27/21 15:22	04/27/21 22:00	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1657331	1	04/26/21 23:41	04/27/21 17:27	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1662793	1	05/02/21 14:28	05/03/21 10:32	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1658188	1	04/26/21 15:11	04/28/21 10:11	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1662788	5	05/02/21 14:32	05/03/21 11:34	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1659724	1	04/25/21 12:56	04/27/21 21:45	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1658969	1	04/25/21 12:56	04/26/21 16:04	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1661738	1	04/30/21 00:50	04/30/21 10:04	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1661740	1	04/30/21 00:27	04/30/21 12:13	TMM	Mt. Juliet, TN

20210420-F23_FLOWLINE(STOCKPILE) L1342745-07 Solid

Collected by
Andrew Smith

Collected date/time
04/20/21 13:15

Received date/time
04/22/21 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1658515	1	04/27/21 19:24	04/27/21 19:24	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1659898	1	05/01/21 11:03	05/01/21 19:04	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1659715	1	04/27/21 15:22	04/27/21 22:00	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1657331	1	04/26/21 23:41	04/27/21 17:27	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1662793	1	05/02/21 14:28	05/03/21 10:36	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1658188	1	04/26/21 15:11	04/28/21 10:14	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1662788	5	05/02/21 14:32	05/03/21 11:38	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1659724	1	04/25/21 12:56	04/27/21 22:08	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1658969	1	04/25/21 12:56	04/26/21 17:01	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1661738	1	04/30/21 00:50	04/30/21 12:40	CAG	Mt. Juliet, TN

SAMPLE SUMMARY

20210420-F23_FLOWLINE(STOCKPILE) L1342745-07 Solid

Collected by
Andrew Smith

Collected date/time
04/20/21 13:15

Received date/time
04/22/21 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1661740	1	04/30/21 00:27	04/30/21 12:31	TMM	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

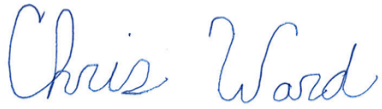
⁷Gl

⁸Al

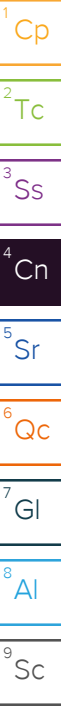
⁹Sc

CASE NARRATIVE

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.



Chris Ward
Project Manager



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.49		1	04/27/2021 19:07	WG1658515

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	05/01/2021 18:26	WG1659898

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.59	T8	1	04/27/2021 22:00	WG1659715

Sample Narrative:

L1342745-01 WG1659715: 8.59 at 21.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	420		10.0	1	04/27/2021 17:27	WG1657331

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	2920		0.0852	0.500	1	05/03/2021 10:17	WG1662793
Cadmium	0.629		0.0471	0.500	1	05/03/2021 10:17	WG1662793
Copper	29.4		0.400	2.00	1	05/03/2021 10:17	WG1662793
Lead	16.7		0.208	0.500	1	05/03/2021 10:17	WG1662793
Nickel	17.4		0.132	2.00	1	05/03/2021 10:17	WG1662793
Selenium	2.61		0.764	2.00	1	05/03/2021 10:17	WG1662793
Silver	U		0.127	1.00	1	05/03/2021 10:17	WG1662793
Zinc	73.4		0.832	5.00	1	05/03/2021 10:17	WG1662793

Metals (ICP) by Method 6010B-NE493 Ch 2

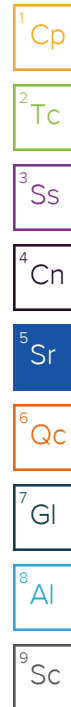
Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.487		0.0167	0.200	1	04/28/2021 09:51	WG1658188

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	15.0		0.100	1.00	5	05/03/2021 11:10	WG1662788

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	255		0.543	2.50	25	04/30/2021 08:09	WG1660774
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	103			77.0-120		04/30/2021 08:09	WG1660774



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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00278		0.000467	0.00100	1	04/26/2021 14:30	WG1658969
Toluene	0.147		0.00130	0.00500	1	04/26/2021 14:30	WG1658969
Ethylbenzene	0.0688		0.000737	0.00250	1	04/26/2021 14:30	WG1658969
Xylenes, Total	2.13		0.000880	0.00650	1	04/26/2021 14:30	WG1658969
1,2,4-Trimethylbenzene	0.501		0.00158	0.00500	1	04/26/2021 14:30	WG1658969
1,3,5-Trimethylbenzene	0.695		0.00200	0.00500	1	04/26/2021 14:30	WG1658969
(S) Toluene-d8	119			75.0-131		04/26/2021 14:30	WG1658969
(S) 4-Bromofluorobenzene	99.1			67.0-138		04/26/2021 14:30	WG1658969
(S) 1,2-Dichloroethane-d4	80.4			70.0-130		04/26/2021 14:30	WG1658969

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	296		8.05	20.0	5	04/30/2021 12:01	WG1661738
C28-C36 Motor Oil Range	156		1.37	20.0	5	04/30/2021 12:01	WG1661738
(S) o-Terphenyl	39.3			18.0-148		04/30/2021 12:01	WG1661738

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	04/30/2021 10:44	WG1661740
Acenaphthene	U		0.00209	0.00600	1	04/30/2021 10:44	WG1661740
Acenaphthylene	U		0.00216	0.00600	1	04/30/2021 10:44	WG1661740
Benzo(a)anthracene	U		0.00173	0.00600	1	04/30/2021 10:44	WG1661740
Benzo(a)pyrene	U		0.00179	0.00600	1	04/30/2021 10:44	WG1661740
Benzo(b)fluoranthene	U		0.00153	0.00600	1	04/30/2021 10:44	WG1661740
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	04/30/2021 10:44	WG1661740
Benzo(k)fluoranthene	U		0.00215	0.00600	1	04/30/2021 10:44	WG1661740
Chrysene	U		0.00232	0.00600	1	04/30/2021 10:44	WG1661740
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	04/30/2021 10:44	WG1661740
Fluoranthene	U		0.00227	0.00600	1	04/30/2021 10:44	WG1661740
Fluorene	0.0502		0.00205	0.00600	1	04/30/2021 10:44	WG1661740
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	04/30/2021 10:44	WG1661740
Naphthalene	0.229		0.00408	0.0200	1	04/30/2021 10:44	WG1661740
Phenanthrene	0.0287		0.00231	0.00600	1	04/30/2021 10:44	WG1661740
Pyrene	0.00455	<u>J</u>	0.00200	0.00600	1	04/30/2021 10:44	WG1661740
1-Methylnaphthalene	0.205		0.00449	0.0200	1	04/30/2021 10:44	WG1661740
2-Methylnaphthalene	0.582		0.00427	0.0200	1	04/30/2021 10:44	WG1661740
2-Chloronaphthalene	U		0.00466	0.0200	1	04/30/2021 10:44	WG1661740
(S) p-Terphenyl-d14	124	<u>J1</u>		23.0-120		04/30/2021 10:44	WG1661740
(S) Nitrobenzene-d5	176	<u>J1</u>		14.0-149		04/30/2021 10:44	WG1661740
(S) 2-Fluorobiphenyl	108			34.0-125		04/30/2021 10:44	WG1661740

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.64		1	04/27/2021 19:10	WG1658515

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	05/01/2021 18:38	WG1659898

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.85	T8	1	04/27/2021 22:00	WG1659715

Sample Narrative:

L1342745-02 WG1659715: 8.85 at 21.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	390		10.0	1	04/27/2021 17:27	WG1657331

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	2070		0.0852	0.500	1	05/03/2021 10:20	WG1662793
Cadmium	0.369	J	0.0471	0.500	1	05/03/2021 10:20	WG1662793
Copper	26.2		0.400	2.00	1	05/03/2021 10:20	WG1662793
Lead	14.9		0.208	0.500	1	05/03/2021 10:20	WG1662793
Nickel	18.3		0.132	2.00	1	05/03/2021 10:20	WG1662793
Selenium	2.65		0.764	2.00	1	05/03/2021 10:20	WG1662793
Silver	U		0.127	1.00	1	05/03/2021 10:20	WG1662793
Zinc	65.2		0.832	5.00	1	05/03/2021 10:20	WG1662793

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.603		0.0167	0.200	1	04/28/2021 09:54	WG1658188

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	19.5		0.100	1.00	5	05/03/2021 11:14	WG1662788

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	1.54		0.0217	0.100	1	04/27/2021 20:11	WG1659724
(S) a,a,a-Trifluorotoluene(FID)	89.6			77.0-120		04/27/2021 20:11	WG1659724

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.000575	U	0.000467	0.00100	1	04/26/2021 14:49	WG1658969
Toluene	0.00293	U	0.00130	0.00500	1	04/26/2021 14:49	WG1658969
Ethylbenzene	U		0.000737	0.00250	1	04/26/2021 14:49	WG1658969
Xylenes, Total	0.0160		0.000880	0.00650	1	04/26/2021 14:49	WG1658969
1,2,4-Trimethylbenzene	0.00343	U	0.00158	0.00500	1	04/26/2021 14:49	WG1658969
1,3,5-Trimethylbenzene	0.0262		0.00200	0.00500	1	04/26/2021 14:49	WG1658969
(S) Toluene-d8	118			75.0-131		04/26/2021 14:49	WG1658969
(S) 4-Bromofluorobenzene	104			67.0-138		04/26/2021 14:49	WG1658969
(S) 1,2-Dichloroethane-d4	86.1			70.0-130		04/26/2021 14:49	WG1658969

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	245		8.05	20.0	5	04/30/2021 12:14	WG1661738
C28-C36 Motor Oil Range	197		1.37	20.0	5	04/30/2021 12:14	WG1661738
(S) o-Terphenyl	47.2			18.0-148		04/30/2021 12:14	WG1661738

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	04/30/2021 11:02	WG1661740
Acenaphthene	U		0.00209	0.00600	1	04/30/2021 11:02	WG1661740
Acenaphthylene	U		0.00216	0.00600	1	04/30/2021 11:02	WG1661740
Benzo(a)anthracene	U		0.00173	0.00600	1	04/30/2021 11:02	WG1661740
Benzo(a)pyrene	U		0.00179	0.00600	1	04/30/2021 11:02	WG1661740
Benzo(b)fluoranthene	U		0.00153	0.00600	1	04/30/2021 11:02	WG1661740
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	04/30/2021 11:02	WG1661740
Benzo(k)fluoranthene	U		0.00215	0.00600	1	04/30/2021 11:02	WG1661740
Chrysene	U		0.00232	0.00600	1	04/30/2021 11:02	WG1661740
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	04/30/2021 11:02	WG1661740
Fluoranthene	U		0.00227	0.00600	1	04/30/2021 11:02	WG1661740
Fluorene	0.00758		0.00205	0.00600	1	04/30/2021 11:02	WG1661740
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	04/30/2021 11:02	WG1661740
Naphthalene	0.0319		0.00408	0.0200	1	04/30/2021 11:02	WG1661740
Phenanthrene	0.0137		0.00231	0.00600	1	04/30/2021 11:02	WG1661740
Pyrene	0.0101		0.00200	0.00600	1	04/30/2021 11:02	WG1661740
1-Methylnaphthalene	0.0355		0.00449	0.0200	1	04/30/2021 11:02	WG1661740
2-Methylnaphthalene	0.0781		0.00427	0.0200	1	04/30/2021 11:02	WG1661740
2-Chloronaphthalene	U		0.00466	0.0200	1	04/30/2021 11:02	WG1661740
(S) p-Terphenyl-d14	112			23.0-120		04/30/2021 11:02	WG1661740
(S) Nitrobenzene-d5	118			14.0-149		04/30/2021 11:02	WG1661740
(S) 2-Fluorobiphenyl	87.2			34.0-125		04/30/2021 11:02	WG1661740

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.87		1	04/27/2021 19:13	WG1658515

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	05/01/2021 18:44	WG1659898

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.70	T8	1	04/27/2021 22:00	WG1659715

Sample Narrative:

L1342745-03 WG1659715: 8.7 at 21.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	467		10.0	1	04/27/2021 17:27	WG1657331

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	2400		0.0852	0.500	1	05/03/2021 10:23	WG1662793
Cadmium	0.394	J	0.0471	0.500	1	05/03/2021 10:23	WG1662793
Copper	27.5		0.400	2.00	1	05/03/2021 10:23	WG1662793
Lead	18.8		0.208	0.500	1	05/03/2021 10:23	WG1662793
Nickel	23.1		0.132	2.00	1	05/03/2021 10:23	WG1662793
Selenium	2.30		0.764	2.00	1	05/03/2021 10:23	WG1662793
Silver	U		0.127	1.00	1	05/03/2021 10:23	WG1662793
Zinc	64.4		0.832	5.00	1	05/03/2021 10:23	WG1662793

Metals (ICP) by Method 6010B-NE493 Ch 2

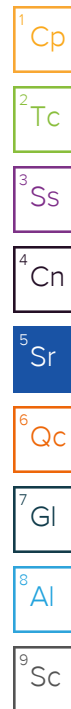
Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.625		0.0167	0.200	1	04/28/2021 09:57	WG1658188

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	17.5		0.100	1.00	5	05/03/2021 11:17	WG1662788

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	1.03		0.0217	0.100	1	04/27/2021 20:34	WG1659724
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	90.5			77.0-120		04/27/2021 20:34	WG1659724



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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.000500	U	0.000467	0.00100	1	04/26/2021 15:08	WG1658969
Toluene	0.00455	U	0.00130	0.00500	1	04/26/2021 15:08	WG1658969
Ethylbenzene	0.00170	U	0.000737	0.00250	1	04/26/2021 15:08	WG1658969
Xylenes, Total	0.0272		0.000880	0.00650	1	04/26/2021 15:08	WG1658969
1,2,4-Trimethylbenzene	0.00490	U	0.00158	0.00500	1	04/26/2021 15:08	WG1658969
1,3,5-Trimethylbenzene	0.0497		0.00200	0.00500	1	04/26/2021 15:08	WG1658969
(S) Toluene-d8	117			75.0-131		04/26/2021 15:08	WG1658969
(S) 4-Bromofluorobenzene	106			67.0-138		04/26/2021 15:08	WG1658969
(S) 1,2-Dichloroethane-d4	91.4			70.0-130		04/26/2021 15:08	WG1658969

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	77.1		16.1	40.0	10	04/30/2021 11:48	WG1661738
C28-C36 Motor Oil Range	196		2.74	40.0	10	04/30/2021 11:48	WG1661738
(S) o-Terphenyl	62.9			18.0-148		04/30/2021 11:48	WG1661738

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	04/30/2021 11:20	WG1661740
Acenaphthene	U		0.00209	0.00600	1	04/30/2021 11:20	WG1661740
Acenaphthylene	U		0.00216	0.00600	1	04/30/2021 11:20	WG1661740
Benzo(a)anthracene	U		0.00173	0.00600	1	04/30/2021 11:20	WG1661740
Benzo(a)pyrene	U		0.00179	0.00600	1	04/30/2021 11:20	WG1661740
Benzo(b)fluoranthene	U		0.00153	0.00600	1	04/30/2021 11:20	WG1661740
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	04/30/2021 11:20	WG1661740
Benzo(k)fluoranthene	U		0.00215	0.00600	1	04/30/2021 11:20	WG1661740
Chrysene	U		0.00232	0.00600	1	04/30/2021 11:20	WG1661740
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	04/30/2021 11:20	WG1661740
Fluoranthene	U		0.00227	0.00600	1	04/30/2021 11:20	WG1661740
Fluorene	0.00330	U	0.00205	0.00600	1	04/30/2021 11:20	WG1661740
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	04/30/2021 11:20	WG1661740
Naphthalene	0.0147	U	0.00408	0.0200	1	04/30/2021 11:20	WG1661740
Phenanthrene	0.00601		0.00231	0.00600	1	04/30/2021 11:20	WG1661740
Pyrene	0.00363	U	0.00200	0.00600	1	04/30/2021 11:20	WG1661740
1-Methylnaphthalene	0.0159	U	0.00449	0.0200	1	04/30/2021 11:20	WG1661740
2-Methylnaphthalene	0.0289		0.00427	0.0200	1	04/30/2021 11:20	WG1661740
2-Chloronaphthalene	U		0.00466	0.0200	1	04/30/2021 11:20	WG1661740
(S) p-Terphenyl-d14	115			23.0-120		04/30/2021 11:20	WG1661740
(S) Nitrobenzene-d5	121			14.0-149		04/30/2021 11:20	WG1661740
(S) 2-Fluorobiphenyl	90.8			34.0-125		04/30/2021 11:20	WG1661740

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	3.90		1	04/27/2021 19:16	WG1658515

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	05/01/2021 18:49	WG1659898

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.52	T8	1	04/27/2021 22:00	WG1659715

Sample Narrative:

L1342745-04 WG1659715: 8.52 at 21.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	656		10.0	1	04/27/2021 17:27	WG1657331

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	524		0.0852	0.500	1	05/03/2021 10:26	WG1662793
Cadmium	0.506		0.0471	0.500	1	05/03/2021 10:26	WG1662793
Copper	25.9		0.400	2.00	1	05/03/2021 10:26	WG1662793
Lead	16.7		0.208	0.500	1	05/03/2021 10:26	WG1662793
Nickel	23.5		0.132	2.00	1	05/03/2021 10:26	WG1662793
Selenium	2.13		0.764	2.00	1	05/03/2021 10:26	WG1662793
Silver	U		0.127	1.00	1	05/03/2021 10:26	WG1662793
Zinc	61.9		0.832	5.00	1	05/03/2021 10:26	WG1662793

Metals (ICP) by Method 6010B-NE493 Ch 2

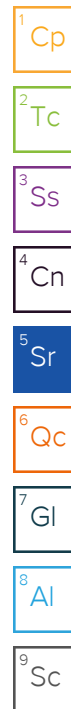
Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.686		0.0167	0.200	1	04/28/2021 10:00	WG1658188

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	20.9		0.100	1.00	5	05/03/2021 11:27	WG1662788

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	3.35		0.0217	0.100	1	04/27/2021 20:58	WG1659724
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	87.5			77.0-120		04/27/2021 20:58	WG1659724



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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.000925	U	0.000467	0.00100	1	04/26/2021 15:26	WG1658969
Toluene	0.0118		0.00130	0.00500	1	04/26/2021 15:26	WG1658969
Ethylbenzene	0.00430		0.000737	0.00250	1	04/26/2021 15:26	WG1658969
Xylenes, Total	0.953		0.000880	0.00650	1	04/26/2021 15:26	WG1658969
1,2,4-Trimethylbenzene	0.105		0.00158	0.00500	1	04/26/2021 15:26	WG1658969
1,3,5-Trimethylbenzene	0.349		0.00200	0.00500	1	04/26/2021 15:26	WG1658969
(S) Toluene-d8	119			75.0-131		04/26/2021 15:26	WG1658969
(S) 4-Bromofluorobenzene	103			67.0-138		04/26/2021 15:26	WG1658969
(S) 1,2-Dichloroethane-d4	91.2			70.0-130		04/26/2021 15:26	WG1658969

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	57.3		3.22	8.00	2	04/30/2021 11:22	WG1661738
C28-C36 Motor Oil Range	103		0.548	8.00	2	04/30/2021 11:22	WG1661738
(S) o-Terphenyl	33.5			18.0-148		04/30/2021 11:22	WG1661738

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	04/30/2021 11:38	WG1661740
Acenaphthene	U		0.00209	0.00600	1	04/30/2021 11:38	WG1661740
Acenaphthylene	U		0.00216	0.00600	1	04/30/2021 11:38	WG1661740
Benzo(a)anthracene	U		0.00173	0.00600	1	04/30/2021 11:38	WG1661740
Benzo(a)pyrene	U		0.00179	0.00600	1	04/30/2021 11:38	WG1661740
Benzo(b)fluoranthene	U		0.00153	0.00600	1	04/30/2021 11:38	WG1661740
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	04/30/2021 11:38	WG1661740
Benzo(k)fluoranthene	U		0.00215	0.00600	1	04/30/2021 11:38	WG1661740
Chrysene	U		0.00232	0.00600	1	04/30/2021 11:38	WG1661740
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	04/30/2021 11:38	WG1661740
Fluoranthene	U		0.00227	0.00600	1	04/30/2021 11:38	WG1661740
Fluorene	0.00334	U	0.00205	0.00600	1	04/30/2021 11:38	WG1661740
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	04/30/2021 11:38	WG1661740
Naphthalene	0.0338		0.00408	0.0200	1	04/30/2021 11:38	WG1661740
Phenanthrene	0.00590	U	0.00231	0.00600	1	04/30/2021 11:38	WG1661740
Pyrene	0.00202	U	0.00200	0.00600	1	04/30/2021 11:38	WG1661740
1-Methylnaphthalene	0.0265		0.00449	0.0200	1	04/30/2021 11:38	WG1661740
2-Methylnaphthalene	0.0667		0.00427	0.0200	1	04/30/2021 11:38	WG1661740
2-Chloronaphthalene	U		0.00466	0.0200	1	04/30/2021 11:38	WG1661740
(S) p-Terphenyl-d14	115			23.0-120		04/30/2021 11:38	WG1661740
(S) Nitrobenzene-d5	145			14.0-149		04/30/2021 11:38	WG1661740
(S) 2-Fluorobiphenyl	89.7			34.0-125		04/30/2021 11:38	WG1661740

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	4.92		1	04/27/2021 19:19	WG1658515

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	05/01/2021 18:54	WG1659898

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	9.10	T8	1	04/27/2021 22:00	WG1659715

Sample Narrative:

L1342745-05 WG1659715: 9.1 at 21.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	526		10.0	1	04/27/2021 17:27	WG1657331

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	389		0.0852	0.500	1	05/03/2021 10:29	WG1662793
Cadmium	0.527		0.0471	0.500	1	05/03/2021 10:29	WG1662793
Copper	24.9		0.400	2.00	1	05/03/2021 10:29	WG1662793
Lead	17.2		0.208	0.500	1	05/03/2021 10:29	WG1662793
Nickel	21.7		0.132	2.00	1	05/03/2021 10:29	WG1662793
Selenium	3.43		0.764	2.00	1	05/03/2021 10:29	WG1662793
Silver	U		0.127	1.00	1	05/03/2021 10:29	WG1662793
Zinc	55.6		0.832	5.00	1	05/03/2021 10:29	WG1662793

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.547		0.0167	0.200	1	04/28/2021 10:03	WG1658188

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	19.6		0.100	1.00	5	05/03/2021 11:31	WG1662788

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	1.21		0.0217	0.100	1	04/27/2021 21:21	WG1659724
(S) a,a,a-Trifluorotoluene(FID)	87.9			77.0-120		04/27/2021 21:21	WG1659724

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	04/26/2021 15:45	WG1658969
Toluene	0.00135	U	0.00130	0.00500	1	04/26/2021 15:45	WG1658969
Ethylbenzene	0.00373		0.000737	0.00250	1	04/26/2021 15:45	WG1658969
Xylenes, Total	0.0661		0.000880	0.00650	1	04/26/2021 15:45	WG1658969
1,2,4-Trimethylbenzene	0.0118		0.00158	0.00500	1	04/26/2021 15:45	WG1658969
1,3,5-Trimethylbenzene	0.0296		0.00200	0.00500	1	04/26/2021 15:45	WG1658969
(S) Toluene-d8	117			75.0-131		04/26/2021 15:45	WG1658969
(S) 4-Bromofluorobenzene	106			67.0-138		04/26/2021 15:45	WG1658969
(S) 1,2-Dichloroethane-d4	90.4			70.0-130		04/26/2021 15:45	WG1658969

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	20.0		1.61	4.00	1	04/30/2021 10:17	WG1661738
C28-C36 Motor Oil Range	86.9		0.274	4.00	1	04/30/2021 10:17	WG1661738
(S) o-Terphenyl	30.3			18.0-148		04/30/2021 10:17	WG1661738

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	04/30/2021 11:55	WG1661740
Acenaphthene	U		0.00209	0.00600	1	04/30/2021 11:55	WG1661740
Acenaphthylene	U		0.00216	0.00600	1	04/30/2021 11:55	WG1661740
Benzo(a)anthracene	U		0.00173	0.00600	1	04/30/2021 11:55	WG1661740
Benzo(a)pyrene	U		0.00179	0.00600	1	04/30/2021 11:55	WG1661740
Benzo(b)fluoranthene	U		0.00153	0.00600	1	04/30/2021 11:55	WG1661740
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	04/30/2021 11:55	WG1661740
Benzo(k)fluoranthene	U		0.00215	0.00600	1	04/30/2021 11:55	WG1661740
Chrysene	0.00491	U	0.00232	0.00600	1	04/30/2021 11:55	WG1661740
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	04/30/2021 11:55	WG1661740
Fluoranthene	0.00291	U	0.00227	0.00600	1	04/30/2021 11:55	WG1661740
Fluorene	U		0.00205	0.00600	1	04/30/2021 11:55	WG1661740
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	04/30/2021 11:55	WG1661740
Naphthalene	0.00551	U	0.00408	0.0200	1	04/30/2021 11:55	WG1661740
Phenanthrene	U		0.00231	0.00600	1	04/30/2021 11:55	WG1661740
Pyrene	0.00575	U	0.00200	0.00600	1	04/30/2021 11:55	WG1661740
1-Methylnaphthalene	U		0.00449	0.0200	1	04/30/2021 11:55	WG1661740
2-Methylnaphthalene	0.0104	U	0.00427	0.0200	1	04/30/2021 11:55	WG1661740
2-Chloronaphthalene	U		0.00466	0.0200	1	04/30/2021 11:55	WG1661740
(S) p-Terphenyl-d14	120			23.0-120		04/30/2021 11:55	WG1661740
(S) Nitrobenzene-d5	116			14.0-149		04/30/2021 11:55	WG1661740
(S) 2-Fluorobiphenyl	94.6			34.0-125		04/30/2021 11:55	WG1661740

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	22.6		1	04/27/2021 19:21	WG1658515

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	05/01/2021 18:59	WG1659898

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.71	T8	1	04/27/2021 22:00	WG1659715

Sample Narrative:

L1342745-06 WG1659715: 8.71 at 21.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	2270		10.0	1	04/27/2021 17:27	WG1657331

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	405		0.0852	0.500	1	05/03/2021 10:32	WG1662793
Cadmium	0.551		0.0471	0.500	1	05/03/2021 10:32	WG1662793
Copper	27.0		0.400	2.00	1	05/03/2021 10:32	WG1662793
Lead	15.9		0.208	0.500	1	05/03/2021 10:32	WG1662793
Nickel	20.6		0.132	2.00	1	05/03/2021 10:32	WG1662793
Selenium	2.63		0.764	2.00	1	05/03/2021 10:32	WG1662793
Silver	U		0.127	1.00	1	05/03/2021 10:32	WG1662793
Zinc	64.0		0.832	5.00	1	05/03/2021 10:32	WG1662793

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.919		0.0167	0.200	1	04/28/2021 10:11	WG1658188

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	18.4		0.100	1.00	5	05/03/2021 11:34	WG1662788

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	1.98		0.0217	0.100	1	04/27/2021 21:45	WG1659724
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	86.6			77.0-120		04/27/2021 21:45	WG1659724

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00420		0.000467	0.00100	1	04/26/2021 16:04	WG1658969
Toluene	0.0380		0.00130	0.00500	1	04/26/2021 16:04	WG1658969
Ethylbenzene	0.0121		0.000737	0.00250	1	04/26/2021 16:04	WG1658969
Xylenes, Total	0.222		0.000880	0.00650	1	04/26/2021 16:04	WG1658969
1,2,4-Trimethylbenzene	0.0122		0.00158	0.00500	1	04/26/2021 16:04	WG1658969
1,3,5-Trimethylbenzene	0.0351		0.00200	0.00500	1	04/26/2021 16:04	WG1658969
(S) Toluene-d8	113			75.0-131		04/26/2021 16:04	WG1658969
(S) 4-Bromofluorobenzene	113			67.0-138		04/26/2021 16:04	WG1658969
(S) 1,2-Dichloroethane-d4	113			70.0-130		04/26/2021 16:04	WG1658969

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	15.4		1.61	4.00	1	04/30/2021 10:04	WG1661738
C28-C36 Motor Oil Range	51.6		0.274	4.00	1	04/30/2021 10:04	WG1661738
(S) o-Terphenyl	56.2			18.0-148		04/30/2021 10:04	WG1661738

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	04/30/2021 12:13	WG1661740
Acenaphthene	U		0.00209	0.00600	1	04/30/2021 12:13	WG1661740
Acenaphthylene	U		0.00216	0.00600	1	04/30/2021 12:13	WG1661740
Benzo(a)anthracene	U		0.00173	0.00600	1	04/30/2021 12:13	WG1661740
Benzo(a)pyrene	U		0.00179	0.00600	1	04/30/2021 12:13	WG1661740
Benzo(b)fluoranthene	U		0.00153	0.00600	1	04/30/2021 12:13	WG1661740
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	04/30/2021 12:13	WG1661740
Benzo(k)fluoranthene	U		0.00215	0.00600	1	04/30/2021 12:13	WG1661740
Chrysene	U		0.00232	0.00600	1	04/30/2021 12:13	WG1661740
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	04/30/2021 12:13	WG1661740
Fluoranthene	U		0.00227	0.00600	1	04/30/2021 12:13	WG1661740
Fluorene	U		0.00205	0.00600	1	04/30/2021 12:13	WG1661740
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	04/30/2021 12:13	WG1661740
Naphthalene	0.00814	U	0.00408	0.0200	1	04/30/2021 12:13	WG1661740
Phenanthrene	U		0.00231	0.00600	1	04/30/2021 12:13	WG1661740
Pyrene	U		0.00200	0.00600	1	04/30/2021 12:13	WG1661740
1-Methylnaphthalene	0.00732	U	0.00449	0.0200	1	04/30/2021 12:13	WG1661740
2-Methylnaphthalene	0.0178	U	0.00427	0.0200	1	04/30/2021 12:13	WG1661740
2-Chloronaphthalene	U		0.00466	0.0200	1	04/30/2021 12:13	WG1661740
(S) p-Terphenyl-d14	112			23.0-120		04/30/2021 12:13	WG1661740
(S) Nitrobenzene-d5	108			14.0-149		04/30/2021 12:13	WG1661740
(S) 2-Fluorobiphenyl	89.4			34.0-125		04/30/2021 12:13	WG1661740

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.11		1	04/27/2021 19:24	WG1658515

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	05/01/2021 19:04	WG1659898

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.85	T8	1	04/27/2021 22:00	WG1659715

Sample Narrative:

L1342745-07 WG1659715: 8.85 at 21.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	466		10.0	1	04/27/2021 17:27	WG1657331

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	2440		0.0852	0.500	1	05/03/2021 10:36	WG1662793
Cadmium	0.349	J	0.0471	0.500	1	05/03/2021 10:36	WG1662793
Copper	29.7		0.400	2.00	1	05/03/2021 10:36	WG1662793
Lead	21.0		0.208	0.500	1	05/03/2021 10:36	WG1662793
Nickel	23.0		0.132	2.00	1	05/03/2021 10:36	WG1662793
Selenium	2.60		0.764	2.00	1	05/03/2021 10:36	WG1662793
Silver	U		0.127	1.00	1	05/03/2021 10:36	WG1662793
Zinc	68.8		0.832	5.00	1	05/03/2021 10:36	WG1662793

Metals (ICP) by Method 6010B-NE493 Ch 2

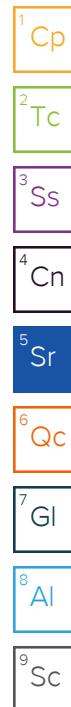
Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.624		0.0167	0.200	1	04/28/2021 10:14	WG1658188

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	21.4		0.100	1.00	5	05/03/2021 11:38	WG1662788

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	1.92		0.0217	0.100	1	04/27/2021 22:08	WG1659724
(S) a,a,a-Trifluorotoluene(FID)	88.9			77.0-120		04/27/2021 22:08	WG1659724



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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U	J5	0.000467	0.00100	1	04/26/2021 17:01	WG1658969
Toluene	0.00275	JJ5	0.00130	0.00500	1	04/26/2021 17:01	WG1658969
Ethylbenzene	0.00107	JJ5	0.000737	0.00250	1	04/26/2021 17:01	WG1658969
Xylenes, Total	0.0174	J5	0.000880	0.00650	1	04/26/2021 17:01	WG1658969
1,2,4-Trimethylbenzene	0.00443	JJ5	0.00158	0.00500	1	04/26/2021 17:01	WG1658969
1,3,5-Trimethylbenzene	0.0674	J5	0.00200	0.00500	1	04/26/2021 17:01	WG1658969
(S) Toluene-d8	113			75.0-131		04/26/2021 17:01	WG1658969
(S) 4-Bromofluorobenzene	109			67.0-138		04/26/2021 17:01	WG1658969
(S) 1,2-Dichloroethane-d4	88.2			70.0-130		04/26/2021 17:01	WG1658969

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	20.5		1.61	4.00	1	04/30/2021 12:40	WG1661738
C28-C36 Motor Oil Range	27.4		0.274	4.00	1	04/30/2021 12:40	WG1661738
(S) o-Terphenyl	19.5			18.0-148		04/30/2021 12:40	WG1661738

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	04/30/2021 12:31	WG1661740
Acenaphthene	U		0.00209	0.00600	1	04/30/2021 12:31	WG1661740
Acenaphthylene	U		0.00216	0.00600	1	04/30/2021 12:31	WG1661740
Benzo(a)anthracene	U		0.00173	0.00600	1	04/30/2021 12:31	WG1661740
Benzo(a)pyrene	U		0.00179	0.00600	1	04/30/2021 12:31	WG1661740
Benzo(b)fluoranthene	U		0.00153	0.00600	1	04/30/2021 12:31	WG1661740
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	04/30/2021 12:31	WG1661740
Benzo(k)fluoranthene	U		0.00215	0.00600	1	04/30/2021 12:31	WG1661740
Chrysene	U		0.00232	0.00600	1	04/30/2021 12:31	WG1661740
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	04/30/2021 12:31	WG1661740
Fluoranthene	U		0.00227	0.00600	1	04/30/2021 12:31	WG1661740
Fluorene	U		0.00205	0.00600	1	04/30/2021 12:31	WG1661740
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	04/30/2021 12:31	WG1661740
Naphthalene	0.0161	JL	0.00408	0.0200	1	04/30/2021 12:31	WG1661740
Phenanthrene	0.00358	JL	0.00231	0.00600	1	04/30/2021 12:31	WG1661740
Pyrene	0.00243	JL	0.00200	0.00600	1	04/30/2021 12:31	WG1661740
1-Methylnaphthalene	0.0149	JL	0.00449	0.0200	1	04/30/2021 12:31	WG1661740
2-Methylnaphthalene	0.0322		0.00427	0.0200	1	04/30/2021 12:31	WG1661740
2-Chloronaphthalene	U		0.00466	0.0200	1	04/30/2021 12:31	WG1661740
(S) p-Terphenyl-d14	115			23.0-120		04/30/2021 12:31	WG1661740
(S) Nitrobenzene-d5	124			14.0-149		04/30/2021 12:31	WG1661740
(S) 2-Fluorobiphenyl	92.6			34.0-125		04/30/2021 12:31	WG1661740

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3649288-1 05/01/21 17:02

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Hexavalent Chromium	U		0.255	1.00

L1342745-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1342745-01 05/01/21 18:26 • (DUP) R3649288-3 05/01/21 18:33

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	U	U	1	0.000		20

L1343754-43 Original Sample (OS) • Duplicate (DUP)

(OS) L1343754-43 05/01/21 21:30 • (DUP) R3649288-8 05/01/21 21:35

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3649288-2 05/01/21 17:10

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	10.4	104	80.0-120	

L1343689-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1343689-04 05/01/21 20:28 • (MS) R3649288-4 05/01/21 20:33 • (MSD) R3649288-5 05/01/21 20:38

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Hexavalent Chromium	20.0	0.550	20.2	20.1	98.2	97.9	1	75.0-125			0.289	20

L1343689-04 Original Sample (OS) • Matrix Spike (MS)

(OS) L1343689-04 05/01/21 20:28 • (MS) R3649288-6 05/01/21 20:44

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	643	0.550	628	97.7	50	75.0-125	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1341019-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1341019-03 04/27/21 22:00 • (DUP) R3647344-2 04/27/21 22:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.77	7.82	1	0.641		1

Sample Narrative:

OS: 7.77 at 21.4C

DUP: 7.82 at 21.6C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1343871-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1343871-01 04/27/21 22:00 • (DUP) R3647344-3 04/27/21 22:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.26	8.24	1	0.242		1

Sample Narrative:

OS: 8.26 at 21.7C

DUP: 8.24 at 21.7C

Laboratory Control Sample (LCS)

(LCS) R3647344-1 04/27/21 22:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	9.98	99.8	99.0-101	

Sample Narrative:

LCS: 9.98 at 21C

Method Blank (MB)

(MB) R3647294-1 04/27/21 17:27

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

L1341019-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1341019-03 04/27/21 17:27 • (DUP) R3647294-3 04/27/21 17:27

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	6350	6380	1	0.471		20

L1343871-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1343871-01 04/27/21 17:27 • (DUP) R3647294-4 04/27/21 17:27

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	422	424	1	0.473		20

Laboratory Control Sample (LCS)

(LCS) R3647294-2 04/27/21 17:27

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	741	744	100	85.0-115	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3649552-1 05/03/21 09:44

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Barium	0.217	U	0.0852	0.500
Cadmium	U		0.0471	0.500
Copper	U		0.400	2.00
Lead	U		0.208	0.500
Nickel	U		0.132	2.00
Selenium	U		0.764	2.00
Silver	U		0.127	1.00
Zinc	1.11	U	0.832	5.00

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

Laboratory Control Sample (LCS)

(LCS) R3649552-2 05/03/21 09:46

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	103	103	80.0-120	
Cadmium	100	97.9	97.9	80.0-120	
Copper	100	100	100	80.0-120	
Lead	100	99.4	99.4	80.0-120	
Nickel	100	101	101	80.0-120	
Selenium	100	98.2	98.2	80.0-120	
Silver	20.0	19.1	95.7	80.0-120	
Zinc	100	98.8	98.8	80.0-120	

7
Gl

8
Al

9
Sc

L1346666-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1346666-01 05/03/21 09:49 • (MS) R3649552-5 05/03/21 09:57 • (MSD) R3649552-6 05/03/21 10:00

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	100	147	263	265	116	118	1	75.0-125			0.786	20
Cadmium	100	0.143	96.8	95.1	96.7	94.9	1	75.0-125			1.78	20
Copper	100	10.1	109	108	99.2	97.8	1	75.0-125			1.33	20
Lead	100	6.83	106	105	99.4	98.3	1	75.0-125			1.08	20
Nickel	100	6.42	109	108	103	102	1	75.0-125			0.774	20
Selenium	100	U	98.4	94.9	98.4	94.9	1	75.0-125			3.65	20
Silver	20.0	U	18.9	18.6	94.7	93.0	1	75.0-125			1.76	20
Zinc	100	32.6	129	128	96.0	95.3	1	75.0-125			0.541	20

Method Blank (MB)

(MB) R3647538-1 04/28/21 09:37

Analyte	MB Result mg/l	<u>MB Qualifier</u>	MB MDL mg/l	MB RDL mg/l
Hot Water Sol. Boron	U		0.0167	0.200

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

(LCS) R3647538-2 04/28/21 09:40 • (LCSD) R3647538-3 04/28/21 09:42

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	1.04	1.05	104	105	80.0-120			0.728	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3649587-1 05/03/21 10:46

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00

Laboratory Control Sample (LCS)

(LCS) R3649587-2 05/03/21 10:50

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	96.8	96.8	80.0-120	

L1346666-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1346666-01 05/03/21 10:53 • (MS) R3649587-5 05/03/21 11:03 • (MSD) R3649587-6 05/03/21 11:07

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	2.04	93.3	92.2	91.3	90.1	5	75.0-125			1.22	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3647653-2 04/27/21 13:03

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	97.5			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3647653-1 04/27/21 12:16

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	6.12	111	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			107	77.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3648629-4 04/30/21 06:24

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	117			77.0-120

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

(LCS) R3648629-2 04/30/21 05:17 • (LCSD) R3648629-3 04/30/21 05:39

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	4.90	4.91	89.1	89.3	72.0-127			0.204	20
(S) a,a,a-Trifluorotoluene(FID)				108	109	77.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3646785-3 04/26/21 12:01

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	121			75.0-131
(S) 4-Bromofluorobenzene	106			67.0-138
(S) 1,2-Dichloroethane-d4	82.9			70.0-130

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

(LCS) R3646785-1 04/26/21 10:46 • (LCSD) R3646785-2 04/26/21 11:04

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.122	0.117	97.6	93.6	70.0-123			4.18	20
Ethylbenzene	0.125	0.131	0.137	105	110	74.0-126			4.48	20
Toluene	0.125	0.133	0.136	106	109	75.0-121			2.23	20
1,2,4-Trimethylbenzene	0.125	0.0981	0.0970	78.5	77.6	70.0-126			1.13	20
1,3,5-Trimethylbenzene	0.125	0.101	0.103	80.8	82.4	73.0-127			1.96	20
Xylenes, Total	0.375	0.411	0.411	110	110	72.0-127			0.000	20
(S) Toluene-d8				113	115	75.0-131				
(S) 4-Bromofluorobenzene				111	111	67.0-138				
(S) 1,2-Dichloroethane-d4				104	104	70.0-130				

L1342745-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1342745-07 04/26/21 17:01 • (MS) R3646785-4 04/26/21 20:46 • (MSD) R3646785-5 04/26/21 21:05

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	U	0.158	0.207	126	166	1	10.0-149		J5	26.8	37
Ethylbenzene	0.125	0.00107	0.182	0.229	145	182	1	10.0-160		J5	22.9	38
Toluene	0.125	0.00275	0.675	0.738	538	588	1	10.0-156	J5	J5	8.92	38
1,2,4-Trimethylbenzene	0.125	0.00443	0.238	0.270	187	212	1	10.0-160	J5	J5	12.6	36
1,3,5-Trimethylbenzene	0.125	0.0674	0.592	0.532	420	372	1	10.0-160	J5	J5	10.7	38
Xylenes, Total	0.375	0.0174	1.91	2.25	505	595	1	10.0-160	J5	J5	16.3	38
(S) Toluene-d8					117	111		75.0-131				
(S) 4-Bromofluorobenzene					105	114		67.0-138				
(S) 1,2-Dichloroethane-d4					91.9	115		70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3648773-1 04/30/21 09:24

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
(S) o-Terphenyl	67.9			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3648773-2 04/30/21 09:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	28.0	56.0	50.0-150	
(S) o-Terphenyl			42.0	18.0-148	

L1342722-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1342722-01 04/30/21 10:43 • (MS) R3648773-3 04/30/21 10:56 • (MSD) R3648773-4 04/30/21 11:09

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	50.0	4.60	39.7	38.2	70.2	70.9	1	50.0-150			3.85	20
(S) o-Terphenyl					33.8	32.1		18.0-148				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3648902-2 04/30/21 10:26

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) Nitrobenzene-d5	116			14.0-149
(S) 2-Fluorobiphenyl	100			34.0-125
(S) p-Terphenyl-d14	134	J1		23.0-120

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R3648902-1 04/30/21 10:08

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0743	92.9	50.0-126	
Acenaphthene	0.0800	0.0800	100	50.0-120	
Acenaphthylene	0.0800	0.0817	102	50.0-120	
Benzo(a)anthracene	0.0800	0.0806	101	45.0-120	
Benzo(a)pyrene	0.0800	0.0684	85.5	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0811	101	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0804	101	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0782	97.8	49.0-125	
Chrysene	0.0800	0.0833	104	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0750	93.8	47.0-125	
Fluoranthene	0.0800	0.0784	98.0	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3648902-1 04/30/21 10:08

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0805	101	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0762	95.3	46.0-125	
Naphthalene	0.0800	0.0800	100	50.0-120	
Phenanthrene	0.0800	0.0754	94.3	47.0-120	
Pyrene	0.0800	0.0896	112	43.0-123	
1-Methylnaphthalene	0.0800	0.0843	105	51.0-121	
2-Methylnaphthalene	0.0800	0.0793	99.1	50.0-120	
2-Chloronaphthalene	0.0800	0.0729	91.1	50.0-120	
(S) Nitrobenzene-d5			114	14.0-149	
(S) 2-Fluorobiphenyl			99.0	34.0-125	
(S) p-Terphenyl-d14			125	23.0-120	J1

L1343561-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1343561-01 04/30/21 14:36 • (MS) R3648902-3 04/30/21 14:54 • (MSD) R3648902-4 04/30/21 15:12

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0784	U	0.0574	0.0643	73.2	82.0	1	10.0-145			11.3	30
Acenaphthene	0.0784	U	0.0613	0.0699	78.2	89.2	1	14.0-127			13.1	27
Acenaphthylene	0.0784	U	0.0617	0.0692	78.7	88.3	1	21.0-124			11.5	25
Benzo(a)anthracene	0.0784	U	0.0628	0.0712	80.1	90.8	1	10.0-139			12.5	30
Benzo(a)pyrene	0.0784	U	0.0585	0.0650	74.6	82.9	1	10.0-141			10.5	31
Benzo(b)fluoranthene	0.0784	0.00291	0.0611	0.0668	74.2	81.5	1	10.0-140			8.91	36
Benzo(g,h,i)perylene	0.0784	0.00224	0.0597	0.0678	73.3	83.6	1	10.0-140			12.7	33
Benzo(k)fluoranthene	0.0784	U	0.0583	0.0677	74.4	86.4	1	10.0-137			14.9	31
Chrysene	0.0784	U	0.0660	0.0739	84.2	94.3	1	10.0-145			11.3	30
Dibenz(a,h)anthracene	0.0784	U	0.0574	0.0649	73.2	82.8	1	10.0-132			12.3	31
Fluoranthene	0.0784	0.00386	0.0659	0.0737	79.1	89.1	1	10.0-153			11.2	33
Fluorene	0.0784	U	0.0632	0.0714	80.6	91.1	1	11.0-130			12.2	29
Indeno(1,2,3-cd)pyrene	0.0784	0.00185	0.0583	0.0659	72.0	81.7	1	10.0-137			12.2	32
Naphthalene	0.0784	U	0.0670	0.0721	85.5	92.0	1	10.0-135			7.33	27
Phenanthrene	0.0784	U	0.0592	0.0666	75.5	84.9	1	10.0-144			11.8	31
Pyrene	0.0784	0.00395	0.0683	0.0769	82.1	93.0	1	10.0-148			11.8	35
1-Methylnaphthalene	0.0784	U	0.0676	0.0748	86.2	95.4	1	10.0-142			10.1	28
2-Methylnaphthalene	0.0784	U	0.0639	0.0709	81.5	90.4	1	10.0-137			10.4	28
2-Chloronaphthalene	0.0784	U	0.0562	0.0635	71.7	81.0	1	29.0-120			12.2	24
(S) Nitrobenzene-d5					94.5	101		14.0-149				
(S) 2-Fluorobiphenyl					78.8	89.0		34.0-125				
(S) p-Terphenyl-d14					96.6	110		23.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

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.

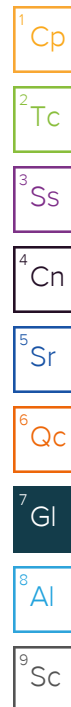
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location.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

J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
T8	Sample(s) received past/too close to holding time expiration.



ACCREDITATIONS & LOCATIONS

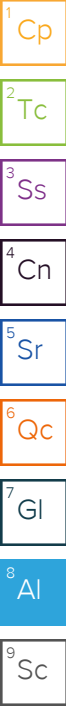
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
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}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
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

* 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 Analytical.



Caerus Oil and Gas Info on file						Billing Information: Caerus Oil and Gas Info on file						Pres Chk																	
Report to: Blair Rollins; Chris McKisson						Email To: brollins@caerusoilandgas.com; remediation@confluence-cc.com																							
Project Description: F23 596 Flowline						City/State Collected: Colorado			Please Circle: PT MT CT ET																				
Phone: 970-640-6919			Client Project #			Lab Project #																							
Collected by (print): Andrew Smith			Site/Facility ID #			P.O. #																							
Collected by (signature): 			Rush? (Lab MUST Be Notified) Same Day Five Day Next Day 5 Day (Rad Only) Date Results Needed Two Day 10 Day (Rad Only) Three Day			Quote # STA																							
Immediately Packed on Ice: N Y X						No. of Cntrs																							
Sample ID						Comp/Grab		Matrix*		Depth		Date		Time		BTEX		TPH (ORO,GRO,DRO)		Table 915-1 Metal's		Table 915-1 PAH's		EC, SAR, pH		Boron (Hot Water Soluble Soil)			
20210420 - F23_Flowline (POR@6')						Grab		SS		6'		4-20-21		10:30		3		X		X		X		X		X		X	
20210420 - F23_Flowline (WWALL@10')						Grab		SS		10'		4-20-21		12:30		3		X		X		X		X		X		X	
20210420 - F23_Flowline (SWALL@10')						Grab		SS		10'		4-20-21		12:40		3		X		X		X		X		X		X	
20210420 - F23_Flowline (EWALL@10')						Grab		SS		10'		4-20-21		12:50		3		X		X		X		X		X		X	
20210420 - F23_Flowline (BASE@13')						Grab		SS		13'		4-20-21		12:55		3		X		X		X		X		X		X	
20210420 - F23_Flowline (NWALL@10')						Grab		SS		10'		4-20-21		13:05		3		X		X		X		X		X		X	
20210420 - F23_Flowline (STOCKPILE)						COMP		SS		-		4-20-21		13:15		3		X		X		X		X		X		X	
Remarks:						Samples returned via: UPS FedEx Courier		Tracking # 9883 0083 8625		Received by (Signature) 		Trip Blank Received: Yes / No HCL / MeOH TBR		Bottles Received: 21		If preservation required by Login: Date/Time													
Relinquished by : (Signature) 						Date: 4-21-21		Time: 11:30		Received by (Signature) 		Date: 4/21/21		Time: 12:00		Received for lab by: (Signature) 		Date: 4/21/21		Time: 9:15		Hold:		Condition: NCF (OK)					

Chain of Custody Page ____ of ____

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

Pace Analytical®
National Center for Testing & Innovation

SDG # **L1342745**

T **D145**

Acctnum:
Template:
Prelogin:
PM:
PB:

Shipped Via:
Remarks Sample # (lab only)
- 91
- 92
- 03
- 94
- 05
- 06
- 07

Caerus Oil and Gas

Sample Delivery Group: L1349386

Samples Received: 05/07/2021

Project Number:

Description: F23 Flowline

Report To: Brett Middleton
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:



Chris Ward
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.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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		⁷ Al
		⁸ Sc

SAMPLE SUMMARY

20210504 - F23_FLOWLINE (NWALL@8') L1349386-01 Solid

Collected by
Andrew Smith

Collected date/time
05/04/21 12:50

Received date/time
05/07/21 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1669034	1	05/19/21 11:35	05/19/21 11:35	KMG	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Gl

⁷Al

⁸Sc

CASE NARRATIVE

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.



Chris Ward
Project Manager



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.97		1	05/19/2021 11:35	WG1669034

1Cp

2Tc

3Ss

4Cn

5Sr

6Gl

7Al

8Sc

GLOSSARY OF TERMS

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

SDG	Sample Delivery Group.
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.
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

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.



ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
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}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
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

* 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 Analytical.



Caerus Oil and Gas Info on file

Billing Information:
Caerus Oil and Gas
Info on file

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:
Blair Rollins; Chris McKisson

Email To: brollins@caerusoilandgas.com;
remediation@confluence-cc.com

Project Description:
F23 Flowline

City/State
Collected: **Colorado**

Please Circle: PT
☒ MT ☐ ET

Phone: **970-640-6919**

Client Project #

Lab Project #

Collected by (print):
Andrew Smith

Site/Facility ID #

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day

Quote #

Immediately Packed on Ice:

N ___ Y ☒ X

___ Next Day ___ 9 Day (Rad Only)

Date Results Needed

___ Two Day ___ 10 Day (Rad Only)

Standard TAT

No. of
Cnts

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cnts
20210504 - F23_Flowline (NWALL@8')	Grab	SS	7'	5-04-21	12:50	3

BTEX

TPH (ORO,GRO,DRO)

Table 915-1 Metal's

Table 915-1 PAH's

EC, SAR, pH

Boron (Hot Water Soluble Soil)

SAR Only

SDG # **L1349386**

Table # **G024**

Acctnum:
Template:
Prelogin:
PM:
PB:

Shipped Via:

Remarks Sample # (lab only)

See below -01

* Matrix:

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

Remarks: Please hold sample for additional analysis.

Samples returned via:

UPS FedEx Courier

Tracking #

pH Temp
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

Relinquished by: (Signature)

AS

Date: **5/5/21**

Time:

11:15

Received by: (Signature)

[Signature]

Trip Blank Received: Yes ☒ No

HCL / MeOH
TBR

Relinquished by: (Signature)

[Signature]

Date:

5/5/21

Time:

1200

Received by: (Signature)

[Signature]

Temp: **43.8** Bottles Received: **3**

4.2 ± .2 = 4.4

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Benji Fahn

Date: **5/6/21**

Time: **0800**

Hold:

Condition: NCF

1/OK

May 20, 2021

Caerus Oil and Gas

Sample Delivery Group: L1349376

Samples Received: 05/07/2021

Project Number:

Description: F23 Dumpline

Report To: Jake Janicek; Chris McKisson
143 Diamond Avenue
Parachute, CO 81635

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Entire Report Reviewed By:



Chris Ward
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

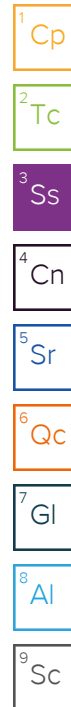
20210504 - F23_DUMPLINE (BASE@7' L1349376-01 Solid

Collected by
Andrew Smith

Collected date/time
05/04/21 09:25

Received date/time
05/07/21 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1669013	1	05/17/21 08:34	05/17/21 08:34	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1668983	1	05/12/21 12:00	05/12/21 20:15	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1666895	1	05/09/21 02:55	05/09/21 09:06	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1667102	1	05/09/21 02:57	05/09/21 07:49	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1667599	1	05/11/21 13:33	05/11/21 20:30	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1669010	1	05/15/21 14:30	05/17/21 09:41	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1667600	5	05/11/21 13:35	05/11/21 18:39	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1667587	1	05/08/21 17:02	05/11/21 15:02	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1668003	1	05/08/21 17:02	05/11/21 11:24	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1668772	5	05/11/21 23:41	05/12/21 15:04	JDG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1670129	1	05/13/21 15:01	05/14/21 01:03	AAT	Mt. Juliet, TN



20210504 - F23_DUMPLINE (SWALL@5') L1349376-02 Solid

Collected by
Andrew Smith

Collected date/time
05/04/21 09:45

Received date/time
05/07/21 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1669013	1	05/17/21 08:36	05/17/21 08:36	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1668983	1	05/12/21 12:00	05/12/21 20:20	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1666895	1	05/09/21 02:55	05/09/21 09:06	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1667102	1	05/09/21 02:57	05/09/21 07:49	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1667599	1	05/11/21 13:33	05/11/21 20:48	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1667599	1	05/11/21 13:33	05/11/21 22:53	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1669010	1	05/15/21 14:30	05/17/21 09:44	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1667600	5	05/11/21 13:35	05/11/21 18:59	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1667587	1	05/08/21 17:02	05/11/21 15:25	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1668003	1	05/08/21 17:02	05/11/21 11:44	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1668772	5	05/11/21 23:41	05/12/21 14:37	JDG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1670129	1	05/13/21 15:01	05/14/21 00:45	AAT	Mt. Juliet, TN

20210504 - F23_DUMPLINE (NWALL@6') L1349376-03 Solid

Collected by
Andrew Smith

Collected date/time
05/04/21 09:50

Received date/time
05/07/21 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1669013	1	05/17/21 08:39	05/17/21 08:39	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1668983	1	05/12/21 12:00	05/12/21 20:36	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1666895	1	05/09/21 02:55	05/09/21 09:06	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1667102	1	05/09/21 02:57	05/09/21 07:49	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1667599	1	05/11/21 13:33	05/11/21 20:51	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1667599	1	05/11/21 13:33	05/11/21 22:56	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1669010	1	05/15/21 14:30	05/17/21 09:47	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1667600	5	05/11/21 13:35	05/11/21 19:02	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1667587	1	05/08/21 17:02	05/11/21 15:47	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1668003	1	05/08/21 17:02	05/11/21 12:03	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1668772	5	05/11/21 23:41	05/12/21 14:51	JDG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1670129	1	05/13/21 15:01	05/14/21 00:54	AO	Mt. Juliet, TN

20210504 - F23_DUMPLINE (WWALL@6' L1349376-04 Solid

Collected by
Andrew Smith

Collected date/time
05/04/21 09:55

Received date/time
05/07/21 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1669013	1	05/17/21 08:42	05/17/21 08:42	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1669705	1	05/13/21 23:42	05/14/21 11:25	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1666895	1	05/09/21 02:55	05/09/21 09:06	ARD	Mt. Juliet, TN

SAMPLE SUMMARY

20210504 - F23_DUMPLINE (WWALL@6' L1349376-04 Solid

Collected by
Andrew Smith

Collected date/time
05/04/21 09:55

Received date/time
05/07/21 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9050AMod	WG1667102	1	05/09/21 02:57	05/09/21 07:49	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1667599	1	05/11/21 13:33	05/11/21 21:00	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1669010	1	05/15/21 14:30	05/17/21 09:49	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1667600	5	05/11/21 13:35	05/11/21 19:21	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1667295	1	05/08/21 17:02	05/10/21 12:29	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1668003	1	05/08/21 17:02	05/11/21 12:22	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1669928	10	05/12/21 15:51	05/13/21 21:50	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1670129	1	05/13/21 15:01	05/14/21 01:48	AAT	Mt. Juliet, TN

20210504 - F23_DUMPLINE (EWALL@6') L1349376-05 Solid

Collected by
Andrew Smith

Collected date/time
05/04/21 10:00

Received date/time
05/07/21 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1669013	1	05/17/21 08:45	05/17/21 08:45	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1669705	1	05/13/21 23:42	05/14/21 11:30	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1666895	1	05/09/21 02:55	05/09/21 09:06	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1667102	1	05/09/21 02:57	05/09/21 07:49	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1667599	1	05/11/21 13:33	05/11/21 21:03	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1669010	1	05/15/21 14:30	05/17/21 09:52	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1667600	5	05/11/21 13:35	05/11/21 19:24	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1667295	1	05/08/21 17:02	05/10/21 12:53	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1668003	1	05/08/21 17:02	05/11/21 12:41	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1669928	1	05/12/21 15:51	05/15/21 09:02	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1670129	1	05/13/21 15:01	05/14/21 01:57	AAT	Mt. Juliet, TN

20210504 - F23_DUMPLINE (BGN@1') L1349376-06 Solid

Collected by
Andrew Smith

Collected date/time
05/04/21 10:30

Received date/time
05/07/21 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1669034	1	05/19/21 11:25	05/19/21 11:25	KMG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1666895	1	05/09/21 02:55	05/09/21 09:06	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1667102	1	05/09/21 03:28	05/09/21 07:49	ARD	Mt. Juliet, TN

20210504 - F23_DUMPLINE (BGE@2.5) L1349376-07 Solid

Collected by
Andrew Smith

Collected date/time
05/04/21 10:40

Received date/time
05/07/21 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1669034	1	05/19/21 11:27	05/19/21 11:27	KMG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1666895	1	05/09/21 02:55	05/09/21 09:06	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1667102	1	05/09/21 03:28	05/09/21 07:49	ARD	Mt. Juliet, TN

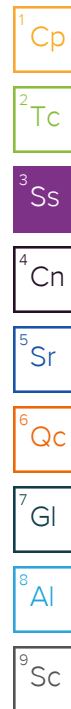
20210504 - F23_DUMPLINE (BGSE@1') L1349376-08 Solid

Collected by
Andrew Smith

Collected date/time
05/04/21 11:10

Received date/time
05/07/21 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1669034	1	05/19/21 11:30	05/19/21 11:30	KMG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1666894	1	05/09/21 03:32	05/09/21 09:10	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1667102	1	05/09/21 03:28	05/09/21 07:49	ARD	Mt. Juliet, TN



SAMPLE SUMMARY

20210504 - F23_DUMPLINE (BGS@1') L1349376-09 Solid

Collected by
Andrew Smith

Collected date/time
05/04/21 11:20

Received date/time
05/07/21 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1669034	1	05/19/21 11:33	05/19/21 11:33	KMG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1671192	1	05/17/21 14:36	05/18/21 01:21	WOS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1667102	1	05/09/21 03:28	05/09/21 07:49	ARD	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

CASE NARRATIVE

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.



Chris Ward
Project Manager



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	6.37		1	05/17/2021 08:34	WG1669013

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	05/12/2021 20:15	WG1668983

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.35	T8	1	05/09/2021 09:06	WG1666895

Sample Narrative:

L1349376-01 WG1666895: 8.35 at 21.4C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	1660		10.0	1	05/09/2021 07:49	WG1667102

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	2030	O1 V	0.0852	0.500	1	05/11/2021 20:30	WG1667599
Cadmium	0.333	J	0.0471	0.500	1	05/11/2021 20:30	WG1667599
Copper	21.0		0.400	2.00	1	05/11/2021 20:30	WG1667599
Lead	11.7		0.208	0.500	1	05/11/2021 20:30	WG1667599
Nickel	16.7		0.132	2.00	1	05/11/2021 20:30	WG1667599
Selenium	U		0.764	2.00	1	05/11/2021 20:30	WG1667599
Silver	U		0.127	1.00	1	05/11/2021 20:30	WG1667599
Zinc	52.2		0.832	5.00	1	05/11/2021 20:30	WG1667599

Metals (ICP) by Method 6010B-NE493 Ch 2

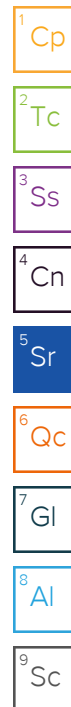
Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.649		0.0167	0.200	1	05/17/2021 09:41	WG1669010

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	12.8	O1	0.100	1.00	5	05/11/2021 18:39	WG1667600

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.184		0.0217	0.100	1	05/11/2021 15:02	WG1667587
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	108			77.0-120		05/11/2021 15:02	WG1667587



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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	05/11/2021 11:24	WG1668003
Toluene	U		0.00130	0.00500	1	05/11/2021 11:24	WG1668003
Ethylbenzene	U		0.000737	0.00250	1	05/11/2021 11:24	WG1668003
Xylenes, Total	U		0.000880	0.00650	1	05/11/2021 11:24	WG1668003
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	05/11/2021 11:24	WG1668003
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	05/11/2021 11:24	WG1668003
(S) Toluene-d8	112			75.0-131		05/11/2021 11:24	WG1668003
(S) 4-Bromofluorobenzene	99.1			67.0-138		05/11/2021 11:24	WG1668003
(S) 1,2-Dichloroethane-d4	101			70.0-130		05/11/2021 11:24	WG1668003

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	83.7		8.05	20.0	5	05/12/2021 15:04	WG1668772
C28-C36 Motor Oil Range	153		1.37	20.0	5	05/12/2021 15:04	WG1668772
(S) o-Terphenyl	68.2			18.0-148		05/12/2021 15:04	WG1668772

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	0.00237	U	0.00230	0.00600	1	05/14/2021 01:03	WG1670129
Acenaphthene	U		0.00209	0.00600	1	05/14/2021 01:03	WG1670129
Acenaphthylene	U		0.00216	0.00600	1	05/14/2021 01:03	WG1670129
Benzo(a)anthracene	U		0.00173	0.00600	1	05/14/2021 01:03	WG1670129
Benzo(a)pyrene	U		0.00179	0.00600	1	05/14/2021 01:03	WG1670129
Benzo(b)fluoranthene	0.00189	U	0.00153	0.00600	1	05/14/2021 01:03	WG1670129
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	05/14/2021 01:03	WG1670129
Benzo(k)fluoranthene	U		0.00215	0.00600	1	05/14/2021 01:03	WG1670129
Chrysene	U		0.00232	0.00600	1	05/14/2021 01:03	WG1670129
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	05/14/2021 01:03	WG1670129
Fluoranthene	U		0.00227	0.00600	1	05/14/2021 01:03	WG1670129
Fluorene	0.0156		0.00205	0.00600	1	05/14/2021 01:03	WG1670129
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	05/14/2021 01:03	WG1670129
Naphthalene	0.136		0.00408	0.0200	1	05/14/2021 01:03	WG1670129
Phenanthrene	0.0201		0.00231	0.00600	1	05/14/2021 01:03	WG1670129
Pyrene	0.00614		0.00200	0.00600	1	05/14/2021 01:03	WG1670129
1-Methylnaphthalene	0.159		0.00449	0.0200	1	05/14/2021 01:03	WG1670129
2-Methylnaphthalene	0.417		0.00427	0.0200	1	05/14/2021 01:03	WG1670129
2-Chloronaphthalene	U		0.00466	0.0200	1	05/14/2021 01:03	WG1670129
(S) p-Terphenyl-d14	95.0			23.0-120		05/14/2021 01:03	WG1670129
(S) Nitrobenzene-d5	86.4			14.0-149		05/14/2021 01:03	WG1670129
(S) 2-Fluorobiphenyl	60.8			34.0-125		05/14/2021 01:03	WG1670129

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	6.26		1	05/17/2021 08:36	WG1669013

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	05/12/2021 20:20	WG1668983

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	9.20	T8	1	05/09/2021 09:06	WG1668895

Sample Narrative:

L1349376-02 WG1668895: 9.2 at 21.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	863		10.0	1	05/09/2021 07:49	WG1667102

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	606		0.0852	0.500	1	05/11/2021 20:48	WG1667599
Cadmium	0.387	J	0.0471	0.500	1	05/11/2021 20:48	WG1667599
Copper	20.3		0.400	2.00	1	05/11/2021 20:48	WG1667599
Lead	17.2		0.208	0.500	1	05/11/2021 20:48	WG1667599
Nickel	16.7		0.132	2.00	1	05/11/2021 20:48	WG1667599
Selenium	2.11		0.764	2.00	1	05/11/2021 20:48	WG1667599
Silver	U		0.127	1.00	1	05/11/2021 20:48	WG1667599
Zinc	52.5		0.832	5.00	1	05/11/2021 22:53	WG1667599

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.702		0.0167	0.200	1	05/17/2021 09:44	WG1669010

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	16.1		0.100	1.00	5	05/11/2021 18:59	WG1667600

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.185		0.0217	0.100	1	05/11/2021 15:25	WG1667587
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	110			77.0-120		05/11/2021 15:25	WG1667587

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	05/11/2021 11:44	WG1668003
Toluene	U		0.00130	0.00500	1	05/11/2021 11:44	WG1668003
Ethylbenzene	U		0.000737	0.00250	1	05/11/2021 11:44	WG1668003
Xylenes, Total	0.00461	U	0.000880	0.00650	1	05/11/2021 11:44	WG1668003
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	05/11/2021 11:44	WG1668003
1,3,5-Trimethylbenzene	0.00220	U	0.00200	0.00500	1	05/11/2021 11:44	WG1668003
(S) Toluene-d8	111			75.0-131		05/11/2021 11:44	WG1668003
(S) 4-Bromofluorobenzene	97.3			67.0-138		05/11/2021 11:44	WG1668003
(S) 1,2-Dichloroethane-d4	101			70.0-130		05/11/2021 11:44	WG1668003

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	28.1		8.05	20.0	5	05/12/2021 14:37	WG1668772
C28-C36 Motor Oil Range	102		1.37	20.0	5	05/12/2021 14:37	WG1668772
(S) o-Terphenyl	56.3			18.0-148		05/12/2021 14:37	WG1668772

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	05/14/2021 00:45	WG1670129
Acenaphthene	U		0.00209	0.00600	1	05/14/2021 00:45	WG1670129
Acenaphthylene	U		0.00216	0.00600	1	05/14/2021 00:45	WG1670129
Benzo(a)anthracene	U		0.00173	0.00600	1	05/14/2021 00:45	WG1670129
Benzo(a)pyrene	U		0.00179	0.00600	1	05/14/2021 00:45	WG1670129
Benzo(b)fluoranthene	U		0.00153	0.00600	1	05/14/2021 00:45	WG1670129
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	05/14/2021 00:45	WG1670129
Benzo(k)fluoranthene	U		0.00215	0.00600	1	05/14/2021 00:45	WG1670129
Chrysene	U		0.00232	0.00600	1	05/14/2021 00:45	WG1670129
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	05/14/2021 00:45	WG1670129
Fluoranthene	U		0.00227	0.00600	1	05/14/2021 00:45	WG1670129
Fluorene	U		0.00205	0.00600	1	05/14/2021 00:45	WG1670129
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	05/14/2021 00:45	WG1670129
Naphthalene	0.00586	U	0.00408	0.0200	1	05/14/2021 00:45	WG1670129
Phenanthrene	0.00349	U	0.00231	0.00600	1	05/14/2021 00:45	WG1670129
Pyrene	U		0.00200	0.00600	1	05/14/2021 00:45	WG1670129
1-Methylnaphthalene	0.00474	U	0.00449	0.0200	1	05/14/2021 00:45	WG1670129
2-Methylnaphthalene	0.00850	U	0.00427	0.0200	1	05/14/2021 00:45	WG1670129
2-Chloronaphthalene	U		0.00466	0.0200	1	05/14/2021 00:45	WG1670129
(S) p-Terphenyl-d14	98.5			23.0-120		05/14/2021 00:45	WG1670129
(S) Nitrobenzene-d5	51.9			14.0-149		05/14/2021 00:45	WG1670129
(S) 2-Fluorobiphenyl	65.7			34.0-125		05/14/2021 00:45	WG1670129

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.30		1	05/17/2021 08:39	WG1669013

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	05/12/2021 20:36	WG1668983

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.31	T8	1	05/09/2021 09:06	WG1666895

Sample Narrative:

L1349376-03 WG1666895: 8.31 at 21.4C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	1360		10.0	1	05/09/2021 07:49	WG1667102

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	1460		0.0852	0.500	1	05/11/2021 20:51	WG1667599
Cadmium	0.0942	J	0.0471	0.500	1	05/11/2021 20:51	WG1667599
Copper	15.6		0.400	2.00	1	05/11/2021 20:51	WG1667599
Lead	9.21		0.208	0.500	1	05/11/2021 20:51	WG1667599
Nickel	12.4		0.132	2.00	1	05/11/2021 20:51	WG1667599
Selenium	1.60	J	0.764	2.00	1	05/11/2021 20:51	WG1667599
Silver	U		0.127	1.00	1	05/11/2021 20:51	WG1667599
Zinc	41.4		0.832	5.00	1	05/11/2021 22:56	WG1667599

Metals (ICP) by Method 6010B-NE493 Ch 2

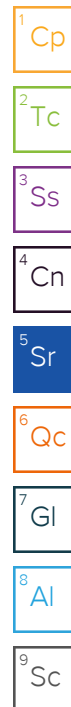
Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.667		0.0167	0.200	1	05/17/2021 09:47	WG1669010

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	9.37		0.100	1.00	5	05/11/2021 19:02	WG1667600

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.232		0.0217	0.100	1	05/11/2021 15:47	WG1667587
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	107			77.0-120		05/11/2021 15:47	WG1667587



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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	05/11/2021 12:03	WG1668003
Toluene	0.00160	BJ	0.00130	0.00500	1	05/11/2021 12:03	WG1668003
Ethylbenzene	U		0.000737	0.00250	1	05/11/2021 12:03	WG1668003
Xylenes, Total	U		0.000880	0.00650	1	05/11/2021 12:03	WG1668003
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	05/11/2021 12:03	WG1668003
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	05/11/2021 12:03	WG1668003
(S) Toluene-d8	110			75.0-131		05/11/2021 12:03	WG1668003
(S) 4-Bromofluorobenzene	101			67.0-138		05/11/2021 12:03	WG1668003
(S) 1,2-Dichloroethane-d4	104			70.0-130		05/11/2021 12:03	WG1668003

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	70.5		8.05	20.0	5	05/12/2021 14:51	WG1668772
C28-C36 Motor Oil Range	144		1.37	20.0	5	05/12/2021 14:51	WG1668772
(S) o-Terphenyl	57.2			18.0-148		05/12/2021 14:51	WG1668772

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	05/14/2021 00:54	WG1670129
Acenaphthene	U		0.00209	0.00600	1	05/14/2021 00:54	WG1670129
Acenaphthylene	U		0.00216	0.00600	1	05/14/2021 00:54	WG1670129
Benzo(a)anthracene	U		0.00173	0.00600	1	05/14/2021 00:54	WG1670129
Benzo(a)pyrene	0.00253	IJ	0.00179	0.00600	1	05/14/2021 00:54	WG1670129
Benzo(b)fluoranthene	0.00409	IJ	0.00153	0.00600	1	05/14/2021 00:54	WG1670129
Benzo(g,h,i)perylene	0.00291	IJ	0.00177	0.00600	1	05/14/2021 00:54	WG1670129
Benzo(k)fluoranthene	0.00387	IJ	0.00215	0.00600	1	05/14/2021 00:54	WG1670129
Chrysene	U		0.00232	0.00600	1	05/14/2021 00:54	WG1670129
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	05/14/2021 00:54	WG1670129
Fluoranthene	U		0.00227	0.00600	1	05/14/2021 00:54	WG1670129
Fluorene	U		0.00205	0.00600	1	05/14/2021 00:54	WG1670129
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	05/14/2021 00:54	WG1670129
Naphthalene	0.0152	IJ	0.00408	0.0200	1	05/14/2021 00:54	WG1670129
Phenanthrene	0.00875		0.00231	0.00600	1	05/14/2021 00:54	WG1670129
Pyrene	U		0.00200	0.00600	1	05/14/2021 00:54	WG1670129
1-Methylnaphthalene	0.0142	IJ	0.00449	0.0200	1	05/14/2021 00:54	WG1670129
2-Methylnaphthalene	0.0483		0.00427	0.0200	1	05/14/2021 00:54	WG1670129
2-Chloronaphthalene	U		0.00466	0.0200	1	05/14/2021 00:54	WG1670129
(S) p-Terphenyl-d14	106			23.0-120		05/14/2021 00:54	WG1670129
(S) Nitrobenzene-d5	61.9			14.0-149		05/14/2021 00:54	WG1670129
(S) 2-Fluorobiphenyl	64.9			34.0-125		05/14/2021 00:54	WG1670129

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	5.25		1	05/17/2021 08:42	WG1669013

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	05/14/2021 11:25	WG1669705

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.51	T8	1	05/09/2021 09:06	WG1666895

Sample Narrative:

L1349376-04 WG1666895: 8.51 at 21.8C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	831		10.0	1	05/09/2021 07:49	WG1667102

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	2000		0.0852	0.500	1	05/11/2021 21:00	WG1667599
Cadmium	0.0790	J	0.0471	0.500	1	05/11/2021 21:00	WG1667599
Copper	19.6		0.400	2.00	1	05/11/2021 21:00	WG1667599
Lead	11.1		0.208	0.500	1	05/11/2021 21:00	WG1667599
Nickel	14.8		0.132	2.00	1	05/11/2021 21:00	WG1667599
Selenium	1.43	J	0.764	2.00	1	05/11/2021 21:00	WG1667599
Silver	U		0.127	1.00	1	05/11/2021 21:00	WG1667599
Zinc	52.1		0.832	5.00	1	05/11/2021 21:00	WG1667599

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.570		0.0167	0.200	1	05/17/2021 09:49	WG1669010

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	11.8		0.100	1.00	5	05/11/2021 19:21	WG1667600

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.400	B	0.0217	0.100	1	05/10/2021 12:29	WG1667295
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	102			77.0-120		05/10/2021 12:29	WG1667295



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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	05/11/2021 12:22	WG1668003
Toluene	U		0.00130	0.00500	1	05/11/2021 12:22	WG1668003
Ethylbenzene	U		0.000737	0.00250	1	05/11/2021 12:22	WG1668003
Xylenes, Total	U		0.000880	0.00650	1	05/11/2021 12:22	WG1668003
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	05/11/2021 12:22	WG1668003
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	05/11/2021 12:22	WG1668003
(S) Toluene-d8	113			75.0-131		05/11/2021 12:22	WG1668003
(S) 4-Bromofluorobenzene	93.3			67.0-138		05/11/2021 12:22	WG1668003
(S) 1,2-Dichloroethane-d4	105			70.0-130		05/11/2021 12:22	WG1668003

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	70.9		16.1	40.0	10	05/13/2021 21:50	WG1669928
C28-C36 Motor Oil Range	133		2.74	40.0	10	05/13/2021 21:50	WG1669928
(S) o-Terphenyl	75.9			18.0-148		05/13/2021 21:50	WG1669928

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	05/14/2021 01:48	WG1670129
Acenaphthene	U		0.00209	0.00600	1	05/14/2021 01:48	WG1670129
Acenaphthylene	U		0.00216	0.00600	1	05/14/2021 01:48	WG1670129
Benzo(a)anthracene	U		0.00173	0.00600	1	05/14/2021 01:48	WG1670129
Benzo(a)pyrene	U		0.00179	0.00600	1	05/14/2021 01:48	WG1670129
Benzo(b)fluoranthene	U		0.00153	0.00600	1	05/14/2021 01:48	WG1670129
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	05/14/2021 01:48	WG1670129
Benzo(k)fluoranthene	U		0.00215	0.00600	1	05/14/2021 01:48	WG1670129
Chrysene	U		0.00232	0.00600	1	05/14/2021 01:48	WG1670129
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	05/14/2021 01:48	WG1670129
Fluoranthene	U		0.00227	0.00600	1	05/14/2021 01:48	WG1670129
Fluorene	U		0.00205	0.00600	1	05/14/2021 01:48	WG1670129
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	05/14/2021 01:48	WG1670129
Naphthalene	0.0131	U	0.00408	0.0200	1	05/14/2021 01:48	WG1670129
Phenanthrene	0.00693		0.00231	0.00600	1	05/14/2021 01:48	WG1670129
Pyrene	U		0.00200	0.00600	1	05/14/2021 01:48	WG1670129
1-Methylnaphthalene	0.0152	U	0.00449	0.0200	1	05/14/2021 01:48	WG1670129
2-Methylnaphthalene	0.0439		0.00427	0.0200	1	05/14/2021 01:48	WG1670129
2-Chloronaphthalene	U		0.00466	0.0200	1	05/14/2021 01:48	WG1670129
(S) p-Terphenyl-d14	97.1			23.0-120		05/14/2021 01:48	WG1670129
(S) Nitrobenzene-d5	54.0			14.0-149		05/14/2021 01:48	WG1670129
(S) 2-Fluorobiphenyl	61.4			34.0-125		05/14/2021 01:48	WG1670129

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	14.4		1	05/17/2021 08:45	WG1669013

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	05/14/2021 11:30	WG1669705

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.81	T8	1	05/09/2021 09:06	WG1666895

Sample Narrative:

L1349376-05 WG1666895: 8.81 at 21.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	1680		10.0	1	05/09/2021 07:49	WG1667102

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	2920		0.0852	0.500	1	05/11/2021 21:03	WG1667599
Cadmium	U		0.0471	0.500	1	05/11/2021 21:03	WG1667599
Copper	20.8		0.400	2.00	1	05/11/2021 21:03	WG1667599
Lead	11.6		0.208	0.500	1	05/11/2021 21:03	WG1667599
Nickel	16.3		0.132	2.00	1	05/11/2021 21:03	WG1667599
Selenium	1.44	J	0.764	2.00	1	05/11/2021 21:03	WG1667599
Silver	U		0.127	1.00	1	05/11/2021 21:03	WG1667599
Zinc	49.9		0.832	5.00	1	05/11/2021 21:03	WG1667599

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.799		0.0167	0.200	1	05/17/2021 09:52	WG1669010

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	11.2		0.100	1.00	5	05/11/2021 19:24	WG1667600

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.334	B	0.0217	0.100	1	05/10/2021 12:53	WG1667295
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	104			77.0-120		05/10/2021 12:53	WG1667295

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	05/11/2021 12:41	WG1668003
Toluene	U		0.00130	0.00500	1	05/11/2021 12:41	WG1668003
Ethylbenzene	U		0.000737	0.00250	1	05/11/2021 12:41	WG1668003
Xylenes, Total	U		0.000880	0.00650	1	05/11/2021 12:41	WG1668003
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	05/11/2021 12:41	WG1668003
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	05/11/2021 12:41	WG1668003
(S) Toluene-d8	114			75.0-131		05/11/2021 12:41	WG1668003
(S) 4-Bromofluorobenzene	97.2			67.0-138		05/11/2021 12:41	WG1668003
(S) 1,2-Dichloroethane-d4	106			70.0-130		05/11/2021 12:41	WG1668003

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	44.6	J3 J5	1.61	4.00	1	05/15/2021 09:02	WG1669928
C28-C36 Motor Oil Range	104		0.274	4.00	1	05/15/2021 09:02	WG1669928
(S) o-Terphenyl	42.0			18.0-148		05/15/2021 09:02	WG1669928

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	05/14/2021 01:57	WG1670129
Acenaphthene	U		0.00209	0.00600	1	05/14/2021 01:57	WG1670129
Acenaphthylene	U		0.00216	0.00600	1	05/14/2021 01:57	WG1670129
Benzo(a)anthracene	U		0.00173	0.00600	1	05/14/2021 01:57	WG1670129
Benzo(a)pyrene	U		0.00179	0.00600	1	05/14/2021 01:57	WG1670129
Benzo(b)fluoranthene	0.00305	U	0.00153	0.00600	1	05/14/2021 01:57	WG1670129
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	05/14/2021 01:57	WG1670129
Benzo(k)fluoranthene	U		0.00215	0.00600	1	05/14/2021 01:57	WG1670129
Chrysene	U		0.00232	0.00600	1	05/14/2021 01:57	WG1670129
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	05/14/2021 01:57	WG1670129
Fluoranthene	U		0.00227	0.00600	1	05/14/2021 01:57	WG1670129
Fluorene	U		0.00205	0.00600	1	05/14/2021 01:57	WG1670129
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	05/14/2021 01:57	WG1670129
Naphthalene	0.0169	U	0.00408	0.0200	1	05/14/2021 01:57	WG1670129
Phenanthrene	0.00690		0.00231	0.00600	1	05/14/2021 01:57	WG1670129
Pyrene	0.00449	U	0.00200	0.00600	1	05/14/2021 01:57	WG1670129
1-Methylnaphthalene	0.0130	U	0.00449	0.0200	1	05/14/2021 01:57	WG1670129
2-Methylnaphthalene	0.0330		0.00427	0.0200	1	05/14/2021 01:57	WG1670129
2-Chloronaphthalene	U		0.00466	0.0200	1	05/14/2021 01:57	WG1670129
(S) p-Terphenyl-d14	99.4			23.0-120		05/14/2021 01:57	WG1670129
(S) Nitrobenzene-d5	43.8			14.0-149		05/14/2021 01:57	WG1670129
(S) 2-Fluorobiphenyl	58.5			34.0-125		05/14/2021 01:57	WG1670129

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.242		1	05/19/2021 11:25	WG1669034

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.70	T8	1	05/09/2021 09:06	WG1666895

Sample Narrative:
L1349376-06 WG1666895: 8.7 at 21.6C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	177		10.0	1	05/09/2021 07:49	WG1667102

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.755		1	05/19/2021 11:27	WG1669034

¹Cp

²Tc

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.49	T8	1	05/09/2021 09:06	WG1666895

³Ss

⁴Cn

Sample Narrative:
L1349376-07 WG1666895: 8.49 at 21.6C

⁵Sr

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	861		10.0	1	05/09/2021 07:49	WG1667102

⁶Qc

⁷Gl

⁸Al

⁹Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.504		1	05/19/2021 11:30	WG1669034

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.67	T8	1	05/09/2021 09:10	WG1666894

Sample Narrative:
L1349376-08 WG1666894: 8.67 at 21.6C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	172		10.0	1	05/09/2021 07:49	WG1667102

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.0748		1	05/19/2021 11:33	WG1669034

¹Cp

²Tc

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.49	T8	1	05/18/2021 01:21	WG1671192

³Ss

⁴Cn

Sample Narrative:
L1349376-09 WG1671192: 8.49 at 23.3C

⁵Sr

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	237		10.0	1	05/09/2021 07:49	WG1667102

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3653934-1 05/12/21 18:25

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Hexavalent Chromium	U		0.255	1.00

L1348591-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1348591-01 05/12/21 18:35 • (DUP) R3653934-3 05/12/21 18:44

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	2.57	1.59	1	47.2	P1	20

L1349376-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1349376-03 05/12/21 20:36 • (DUP) R3653934-4 05/12/21 20:41

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3653934-2 05/12/21 18:30

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	11.6	116	80.0-120	

L1348967-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1348967-01 05/12/21 20:46 • (MS) R3653934-5 05/12/21 20:51 • (MSD) R3653934-6 05/12/21 20:56

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Hexavalent Chromium	20.0	24.2	52.1	47.0	139	114	1	75.0-125	E J5	E	10.1	20

Sample Narrative:

OS: Sample is a reducer.

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L1348967-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1348967-01 05/12/21 20:46 • (MS) R3653934-7 05/12/21 21:02

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Hexavalent Chromium	665	24.2	581	83.7	50	75.0-125	

Sample Narrative:

OS: Sample is a reducer.

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3654626-1 05/14/21 10:59

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Hexavalent Chromium	U		0.255	1.00

L1346831-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1346831-01 05/14/21 11:14 • (DUP) R3654626-3 05/14/21 11:20

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	U	U	1	0.000		20

L1350371-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1350371-02 05/14/21 12:27 • (DUP) R3654626-4 05/14/21 12:32

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3654626-2 05/14/21 11:04

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	11.8	118	80.0-120	

L1350828-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1350828-01 05/14/21 13:09 • (MS) R3654626-5 05/14/21 13:14 • (MSD) R3654626-6 05/14/21 13:19

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Hexavalent Chromium	20.0	U	5.20	6.46	26.0	32.3	1	75.0-125	J6	J3 J6	21.6	20

L1350828-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1350828-01 05/14/21 13:09 • (MS) R3654626-7 05/14/21 13:24

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	644	U	492	76.4	50	75.0-125	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1346835-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1346835-03 05/09/21 09:10 • (DUP) R3652053-2 05/09/21 09:10

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.12	8.13	1	0.123		1

Sample Narrative:

OS: 8.12 at 21.3C

DUP: 8.13 at 21.3C

L1346885-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1346885-03 05/09/21 09:10 • (DUP) R3652053-3 05/09/21 09:10

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.52	8.50	1	0.235		1

Sample Narrative:

OS: 8.52 at 21.4C

DUP: 8.5 at 21.4C

Laboratory Control Sample (LCS)

(LCS) R3652053-1 05/09/21 09:10

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10.04 at 20.4C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1346887-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1346887-04 05/09/21 09:06 • (DUP) R3652057-2 05/09/21 09:06

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.40	8.39	1	0.119		1

Sample Narrative:

OS: 8.4 at 21.9C

DUP: 8.39 at 21.9C

L1349376-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1349376-03 05/09/21 09:06 • (DUP) R3652057-3 05/09/21 09:06

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.31	8.31	1	0.000		1

Sample Narrative:

OS: 8.31 at 21.4C

DUP: 8.31 at 21.5C

Laboratory Control Sample (LCS)

(LCS) R3652057-1 05/09/21 09:06

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	10.1	101	99.0-101	

Sample Narrative:

LCS: 10.06 at 20.6C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1349376-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1349376-09 05/18/21 01:21 • (DUP) R3655590-2 05/18/21 01:21

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	8.49	8.50	1	0.118		1

Sample Narrative:

OS: 8.49 at 23.3C

DUP: 8.5 at 22.4C

Laboratory Control Sample (LCS)

(LCS) R3655590-1 05/18/21 01:21

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10.04 at 22.6C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3652039-1 05/09/21 07:49

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1346887-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1346887-04 05/09/21 07:49 • (DUP) R3652039-3 05/09/21 07:49

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	389	386	1	0.774		20

L1349376-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1349376-03 05/09/21 07:49 • (DUP) R3652039-4 05/09/21 07:49

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	1360	1360	1	0.589		20

Laboratory Control Sample (LCS)

(LCS) R3652039-2 05/09/21 07:49

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	270	101	85.0-115	

Method Blank (MB)

(MB) R3653187-1 05/11/21 20:24

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Barium	U		0.0852	0.500
Cadmium	U		0.0471	0.500
Copper	U		0.400	2.00
Lead	U		0.208	0.500
Nickel	U		0.132	2.00
Selenium	U		0.764	2.00
Silver	U		0.127	1.00
Zinc	U		0.832	5.00

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS)

(LCS) R3653187-2 05/11/21 20:27

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	98.3	98.3	80.0-120	
Cadmium	100	95.7	95.7	80.0-120	
Copper	100	96.4	96.4	80.0-120	
Lead	100	96.9	96.9	80.0-120	
Nickel	100	97.8	97.8	80.0-120	
Selenium	100	98.1	98.1	80.0-120	
Silver	20.0	17.6	88.2	80.0-120	
Zinc	100	96.2	96.2	80.0-120	

L1349376-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1349376-01 05/11/21 20:30 • (MS) R3653187-5 05/11/21 20:39 • (MSD) R3653187-6 05/11/21 20:42

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	100	2030	2700	2350	670	320	1	75.0-125	V	V	13.9	20
Cadmium	100	0.333	92.6	91.1	92.3	90.8	1	75.0-125			1.63	20
Copper	100	21.0	116	112	95.0	91.2	1	75.0-125			3.31	20
Lead	100	11.7	104	101	92.6	89.3	1	75.0-125			3.19	20
Nickel	100	16.7	108	106	91.0	89.2	1	75.0-125			1.62	20
Selenium	100	U	95.8	94.9	95.8	94.9	1	75.0-125			0.968	20
Silver	20.0	U	17.7	17.5	88.3	87.5	1	75.0-125			0.902	20
Zinc	100	52.2	127	128	75.2	75.8	1	75.0-125			0.451	20

Method Blank (MB)

(MB) R3655337-1 05/17/21 09:33

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hot Water Sol. Boron	U		0.0167	0.200

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

(LCS) R3655337-2 05/17/21 09:36 • (LCSD) R3655337-3 05/17/21 09:38

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	0.964	0.935	96.4	93.5	80.0-120			3.01	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3653141-1 05/11/21 18:32

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00

Laboratory Control Sample (LCS)

(LCS) R3653141-2 05/11/21 18:36

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	91.3	91.3	80.0-120	

L1349376-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1349376-01 05/11/21 18:39 • (MS) R3653141-5 05/11/21 18:49 • (MSD) R3653141-6 05/11/21 18:52

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	12.8	91.7	89.2	78.9	76.4	5	75.0-125			2.81	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3652409-2 05/10/21 04:42

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0628	⬇	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	111			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3652409-1 05/10/21 03:55

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.86	107	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			111	77.0-120	

L1349376-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1349376-04 05/10/21 12:29 • (MS) R3652409-3 05/10/21 13:40 • (MSD) R3652409-4 05/10/21 14:04

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	0.400	5.44	6.11	91.6	104	1	10.0-151			11.6	28
(S) a,a,a-Trifluorotoluene(FID)					112	113		77.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3653251-3 05/11/21 07:31

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	117			77.0-120

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

(LCS) R3653251-1 05/11/21 06:24 • (LCSD) R3653251-2 05/11/21 06:46

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	5.11	5.27	92.9	95.8	72.0-127			3.08	20
(S) a,a,a-Trifluorotoluene(FID)				106	107	77.0-120				

L1348962-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1348962-03 05/11/21 08:28 • (MS) R3653251-4 05/11/21 17:39 • (MSD) R3653251-5 05/11/21 18:01

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	154	U	135	153	87.7	99.4	28	10.0-151			12.5	28
(S) a,a,a-Trifluorotoluene(FID)					106	110		77.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3654021-2 05/11/21 08:32

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	0.00175	U	0.00130	0.00500
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	112			75.0-131
(S) 4-Bromofluorobenzene	97.2			67.0-138
(S) 1,2-Dichloroethane-d4	106			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3654021-1 05/11/21 07:35

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.118	94.4	70.0-123	
Ethylbenzene	0.125	0.147	118	74.0-126	
Toluene	0.125	0.131	105	75.0-121	
1,2,4-Trimethylbenzene	0.125	0.119	95.2	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.115	92.0	73.0-127	
Xylenes, Total	0.375	0.399	106	72.0-127	
(S) Toluene-d8			107	75.0-131	
(S) 4-Bromofluorobenzene			107	67.0-138	
(S) 1,2-Dichloroethane-d4			113	70.0-130	

L1349635-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1349635-04 05/11/21 13:19 • (MS) R3654021-3 05/11/21 15:14 • (MSD) R3654021-4 05/11/21 15:33

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.135	U	0.0987	0.133	73.1	98.5	1.08	10.0-149			29.6	37
Ethylbenzene	0.135	U	0.117	0.152	86.7	113	1.08	10.0-160			26.0	38
Toluene	0.135	U	0.116	0.154	85.9	114	1.08	10.0-156			28.1	38
1,2,4-Trimethylbenzene	0.135	U	0.121	0.143	89.6	106	1.08	10.0-160			16.7	36
1,3,5-Trimethylbenzene	0.135	U	0.120	0.144	88.9	107	1.08	10.0-160			18.2	38
Xylenes, Total	0.405	U	0.323	0.415	79.8	102	1.08	10.0-160			24.9	38
(S) Toluene-d8					114	110		75.0-131				
(S) 4-Bromofluorobenzene					93.9	95.2		67.0-138				
(S) 1,2-Dichloroethane-d4					94.4	103		70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3653377-1 05/12/21 09:25

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
(S) o-Terphenyl	49.4			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3653377-2 05/12/21 09:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	35.7	71.4	50.0-150	
(S) o-Terphenyl			51.2	18.0-148	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3654256-1 05/13/21 15:10

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
(S) o-Terphenyl	48.8			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3654256-2 05/13/21 15:24

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	29.3	58.6	50.0-150	
(S) o-Terphenyl			47.9	18.0-148	

L1349376-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1349376-05 05/15/21 09:02 • (MS) R3654937-1 05/15/21 09:15 • (MSD) R3654937-2 05/15/21 09:28

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	49.7	44.6	156	117	224	145	1	50.0-150	J5	J3	28.6	20
(S) o-Terphenyl					43.8	43.7		18.0-148				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3654379-2 05/13/21 20:24

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) Nitrobenzene-d5	51.4			14.0-149
(S) 2-Fluorobiphenyl	69.3			34.0-125
(S) p-Terphenyl-d14	89.6			23.0-120

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R3654379-1 05/13/21 20:15

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0572	71.5	50.0-126	
Acenaphthene	0.0800	0.0571	71.4	50.0-120	
Acenaphthylene	0.0800	0.0578	72.3	50.0-120	
Benzo(a)anthracene	0.0800	0.0577	72.1	45.0-120	
Benzo(a)pyrene	0.0800	0.0479	59.9	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0690	86.3	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0600	75.0	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0692	86.5	49.0-125	
Chrysene	0.0800	0.0603	75.4	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0629	78.6	47.0-125	
Fluoranthene	0.0800	0.0559	69.9	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3654379-1 05/13/21 20:15

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0642	80.3	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0619	77.4	46.0-125	
Naphthalene	0.0800	0.0551	68.9	50.0-120	
Phenanthrene	0.0800	0.0604	75.5	47.0-120	
Pyrene	0.0800	0.0604	75.5	43.0-123	
1-Methylnaphthalene	0.0800	0.0593	74.1	51.0-121	
2-Methylnaphthalene	0.0800	0.0583	72.9	50.0-120	
2-Chloronaphthalene	0.0800	0.0577	72.1	50.0-120	
(S) Nitrobenzene-d5			55.3	14.0-149	
(S) 2-Fluorobiphenyl			72.9	34.0-125	
(S) p-Terphenyl-d14			90.6	23.0-120	

L1349619-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1349619-01 05/14/21 01:12 • (MS) R3654379-3 05/14/21 01:21 • (MSD) R3654379-4 05/14/21 01:30

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0792	0.0157	0.0809	0.0701	82.3	68.7	1	10.0-145			14.3	30
Acenaphthene	0.0792	0.00574	0.0662	0.0626	76.3	71.8	1	14.0-127			5.59	27
Acenaphthylene	0.0792	U	0.0667	0.0622	84.2	78.5	1	21.0-124			6.98	25
Benzo(a)anthracene	0.0792	0.0428	0.121	0.107	98.7	81.1	1	10.0-139			12.3	30
Benzo(a)pyrene	0.0792	0.0426	0.120	0.109	97.7	83.8	1	10.0-141			9.61	31
Benzo(b)fluoranthene	0.0792	0.0638	0.145	0.131	103	84.8	1	10.0-140			10.1	36
Benzo(g,h,i)perylene	0.0792	0.0316	0.103	0.0927	90.2	77.1	1	10.0-140			10.5	33
Benzo(k)fluoranthene	0.0792	0.0221	0.0974	0.0960	95.1	93.3	1	10.0-137			1.45	31
Chrysene	0.0792	0.0448	0.124	0.107	100	78.5	1	10.0-145			14.7	30
Dibenz(a,h)anthracene	0.0792	0.00761	0.0730	0.0691	82.6	77.6	1	10.0-132			5.49	31
Fluoranthene	0.0792	0.0894	0.187	0.147	123	72.7	1	10.0-153			24.0	33
Fluorene	0.0792	0.0107	0.0816	0.0773	89.5	84.1	1	11.0-130			5.41	29
Indeno(1,2,3-cd)pyrene	0.0792	0.0247	0.0955	0.0870	89.4	78.7	1	10.0-137			9.32	32
Naphthalene	0.0792	0.00462	0.0597	0.0598	69.5	69.7	1	10.0-135			0.167	27
Phenanthrene	0.0792	0.0595	0.136	0.119	96.6	75.1	1	10.0-144			13.3	31
Pyrene	0.0792	0.0990	0.208	0.168	138	87.1	1	10.0-148			21.3	35
1-Methylnaphthalene	0.0792	U	0.0629	0.0626	79.4	79.0	1	10.0-142			0.478	28
2-Methylnaphthalene	0.0792	U	0.0611	0.0611	77.1	77.1	1	10.0-137			0.000	28
2-Chloronaphthalene	0.0792	U	0.0588	0.0568	74.2	71.7	1	29.0-120			3.46	24
(S) Nitrobenzene-d5					55.6	54.0		14.0-149				
(S) 2-Fluorobiphenyl					78.6	71.3		34.0-125				
(S) p-Terphenyl-d14					109	96.2		23.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

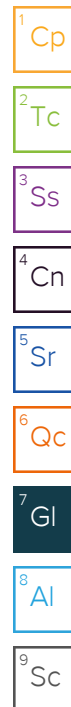
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
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.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

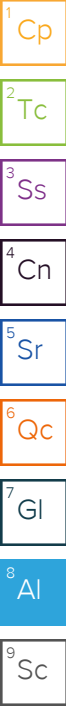
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
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}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
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

* 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 Analytical.



Caerus Oil and Gas Info on file

Billing Information:
Caerus Oil and Gas
Info on file

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:
Blair Rollins; Chris McKisson

Email To: brollins@caerusoilandgas.com;
remediation@confluence-cc.com

Project Description:
F23 Dumpline

City/State
Collected: **Colorado**

Please Circle:
MT

Phone: **970-640-6919**

Client Project #

Lab Project #

Collected by (print):
Andrew Smith

Site/Facility ID #

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)

Same Day Five Day

Next Day 5 Day (Rad Only)

Date Results Needed

Quote #

Immediately Packed on Ice:

N ___ Y **X**

Two Day 10 Day (Rad Only)

Three Day

Standard TAT

No. of
Cnts

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cnts	BTEX	TPH (ORO,GRO,DRO)	Table 915-1 Metal's	Table 915-1 PAH's	EC, SAR, pH	Boron (Hot Water Soluble Soil)						
20210504 - F23_Dumpline (Base@7')	Grab	SS	7'	5-04-21	09:25	3	X	X	X	X	X	X						-01
20210504 - F23_Dumpline (SWALL@5')	Grab	SS	5'	5-04-21	9:45	3	X	X	X	X	X	X						02
20210504 - F23_Dumpline (NWALL@6')	Grab	SS	6'	5-04-21	9:50	3	X	X	X	X	X	X						03
20210504 - F23_Dumpline (WWALL@6')	Grab	SS	6'	5-04-21	9:55	3	X	X	X	X	X	X						04
20210504 - F23_Dumpline (EWALL@6')	Grab	SS	6'	5-04-21	10:00	3	X	X	X	X	X	X						05
20210504 - F23_Dumpline (BGN@1')	Grab	SS	1'	5-04-21	10:30	3					X							06
20210504 - F23_Dumpline (BGE@2.5)	Grab	SS	2.5'	5-04-21	10:40	3					X							07
20210504 - F23_Dumpline (BGSE@1')	Grab	SS	1'	5-04-21	11:10	3					X							08
20210504 - F23_Dumpline (BGS@1')	Grab	SS	1'	5-04-21	11:20	3					X							09

* 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 #

Relinquished by: (Signature)

Date: **5/5/21**

Time: **11:15**

Received by: (Signature)

pH _____ Temp _____
Other _____

Trip Blank Received: Yes ☒ No
HCL / MeOH

TBR

Temp: **4.2 + .2 = 4.4** Bottles Received: **27**

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)

Date: **5/5/21**

Time: **1200**

Received by: (Signature)

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date: **5/6/21**

Time: **0800**

Hold:

Condition: NCF



SDG # **L1349316**

Table # **G023**

Acctnum:
Template:
Prelogin:
PM:
PB:

Shipped Via:

Remarks

Sample # (lab only)