



December 18, 2023

Mr. Blair Rollins
Caerus Oil and Gas
143 Diamond Avenue
Parachute, CO 81635

via email

**Subject: Report of Work Completed
 Chevron 12-11D Wellhead and Flowline Abandonment
 CECMC Remediation Project: 28632
 CECMC Facility ID: 289079
 CECMC Location ID: 335837
 Garfield County, Colorado**

Mr. Rollins,

Entrada Consulting Group, Inc. (Entrada) was contracted by Caerus Oil and Gas, LLC (Caerus) to conduct field screening and soil sampling associated with the abandonment of the Chevron 12-11D wellhead and flowline on the Chevron EL 12 697 pad (Site).

The Chevron 12-11D wellhead is identified in the Colorado Energy and Carbon Management Commission (CECMC) database by Facility ID 289079. The Site is identified in the CECMC database by Location ID 335837. Work is proceeding under CECMC Remediation Project number 28632.

SITE DESCRIPTION AND PATHWAY TO GROUNDWATER

The Site is situated on the Roan Plateau in the Logan Mesa unit of Caerus' Piceance operations area at an elevation of approximately 8,130 feet above mean sea level (ft-amsl). It is located in both the southwest quarter of the northwest quarter and the northwest quarter of the southwest quarter of Section 12, Township 6 south, Range 97 west of the 6th Principal Meridian in Garfield County, Colorado.

According to the United States Department of Agriculture (USDA) National Resources Conservation Service (NRCS), soil at the Site is of the Parachute-Irigul-Rhone association, 25-50 percent slopes. The United States Geological Survey (USGS) reports bedrock in the area as the Parachute Creek Member of the Green River Formation, comprised mainly of fine-grained, low permeability marlstone and oil shale.

The nearest surface water feature to the Site is the spring and associated drainage, located 300 feet east of the Site at an elevation of approximately 8,100 ft-amsl (30 feet below the Site).

EXCAVATION FIELD SCREENING AND SOIL SAMPLING

An Entrada representative was on site May 10, 2023, to conduct field screening and collect soil samples from the excavations at each end of the abandoned flowline. Work to excavate, cut, and cap the flowline was completed prior to arrival. All excavations and samples were inspected for evidence of potential environmental impacts (e.g., staining or hydrocarbon odor) and field-screened for volatile organic compounds (VOCs) with a handheld photoionization detector (PID) equipped with a 10.6 eV lamp.

The excavation at the southeast end of the flowline was located on the southwest side of the 12-11D wellhead and measured 3 feet wide by 8 feet long with the base depth at 5 feet below ground surface (ft-bgs). The southwest wall of the excavation was sloped for access.

The highest VOC concentration field screening in this excavation was 856 ppm at the base of the excavation. A sticky, black substance with a very strong hydrocarbon odor was noted in the soil at an approximate depth of 6 ft-bgs. An elevated VOC concentration of 249.5 ppm was observed on the southeast sidewall at a depth of 3 ft-bgs. VOC concentrations on all remaining excavation sidewalls (NE, NW, and SW) were below 10 ppm. One sample was collected from the base of the excavation (20230510-CHEVRON EL12 697-(FC-FL 12-11D WH BASE)@5).

The excavation at the northwest end of the flowline was located on the northeast side of the separator and measured 5 feet wide by 8 feet long with a depth of 5 ft-bgs. The northeast wall of the excavation was sloped for access.

The highest VOC concentration in this excavation was 2.88 ppm at the base of the excavation. One sample was collected from the base of the excavation (20230510-CHEVRON EL12 697-(FC-FL 12-11D SEP BASE)@5).

On July 20, 2023, an Entrada representative returned to the Site to conduct field screening and collect soil samples from the excavation at the 12-11D wellhead following completion of plug and abandonment operations. The excavation measured 15 feet square with a depth of 6 ft-bgs.

A total of five (5) samples were collected, one from each sidewall at 5 ft-bgs (20230720-CHEVRON EL12 697-(FC WH 12-11D NW)@5, 20230720-CHEVRON EL12 697-(FC WH 12-11D EW)@5, 20230720-CHEVRON EL12 697-(FC WH 12-11D SW)@5, 20230720-CHEVRON EL12 697-(FC WH 12-11D WW)@5) and one from the base of the excavation at 7 ft-bgs (20230720-CHEVRON EL12 697-(FC WH 12-11D BASE)@7). The highest VOC concentration noted in this excavation was 3.8 ppm from west wall.

An Entrada representative returned to the Site on October 10, 2023, after laboratory analytical results showed exceedances for total petroleum hydrocarbons (TPH) and other organic compounds in the west wall sample. A trackhoe operated by Energy Field Services (EFS) was used to excavate a pothole 10 feet southwest of the former west wall sample location. Samples were collected at 5 and 10 ft-bgs, both with negligible VOC concentrations of 0.1 ppm (20231010-EL12697-(FCWH1211DWW)@5, 20231010-EL12697-(FCWH1211DWW)@10).

Excavation boundaries and soil sample locations are shown in **Figure 1**. All soil samples were collected in 9 oz glass jars, sealed, labeled, and placed into an ice-filled cooler for preservation. Samples were submitted to Pace Analytical in Mt. Juliet, TN and analyzed for the following analyte suite:

- Total Petroleum Hydrocarbons – diesel range organics (TPH-DRO [C10-C28]) and Total Petroleum Hydrocarbons – oil range organics (TPH-ORO [C28-C36]) by U.S. Environmental Protection Agency (EPA) Method 8015M
- TPH – gasoline range organics (TPH-GRO [C6-C10]) by EPA Method 8015D/GRO
- Benzene, Toluene, Ethylbenzene, Xylenes (BTEX), 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene by EPA Method 8260B
- Polycyclic aromatic Hydrocarbons (PAHs)(CECMC Table 915-1) by EPA Method 8270C-SIM
- pH by EPA Method 9045D
- Metals (CECMC Table 915-1) by EPA Method 6010B
 - Hexavalent chromium by EPA Method 7199A
 - Hot-water soluble Boron by EPA Method 6010B-NE493, Ch 2
 - Arsenic by EPA Method 6020
- Electrical Conductivity (EC) by EPA Method 9050AMod
- Sodium adsorption ratio (SAR) by USDA Method H60

BACKGROUND SOIL SAMPLING

Three background soil samples were collected from 1 ft-bgs in undisturbed native soil to the west, north, and east of the pad. Background sample locations are shown in **Figure 1**.

The samples were collected in 9 oz glass jars, sealed, labeled, and placed into an ice-filled cooler for preservation. They were submitted to Pace Analytical in Mt. Juliet, TN and analyzed for the following analyte suite:

- pH by EPA Method 9045D
- Electrical Conductivity (EC) by EPA Method 9050AMod
- Sodium adsorption ratio (SAR) by USDA Method H60
- Metals (CECMC Table 915-1) by EPA Method 6010B
 - Hexavalent chromium by EPA Method 7199A
 - Hot-water soluble Boron by EPA Method 6010B-NE493, Ch 2
 - Arsenic by EPA Method 6020

SOIL ANALYTICAL RESULTS

Analytical results for the nine (9) excavation soil samples are presented in **Tables 1 and 2** along with CECMC Table 915-1 Cleanup Concentrations, Protection of Groundwater Soil Screening Level (PGSSL) concentrations, and Soil Suitability for Reclamation (SSR) standards for comparison. Results in exceedance of these standards are summarized below:

- Total Petroleum Hydrocarbons (TPH, total volatile [C6 - C10] and extractable [C10 - C36] hydrocarbons) were reported in exceedance of the Table 915-1 Cleanup Concentration of 500 mg/kg in three (3) samples:
 - 20230510-CHEVRON EL12 697-(FC-FL 12-11D WH BASE)@5 at 2072 mg/kg
 - 20230720-CHEVRON EL12 697-(FC WH 12-11D WW)@5 at 7362.98 mg/kg
 - 20230720-CHEVRON EL12 697-(FC WH 12-11D BASE)@7 1099.58 mg/kg
- Toluene was reported in exceedance of the PGSSL concentration of 0.69 mg/kg in sample 20230510-CHEVRON EL12 697-(FC-FL 12-11D WH BASE)@5 at 20.3 mg/kg.

- 1, 2, 4-Trimethylbenzene was reported in exceedance of the PGSSL concentration of 0.0081 mg/kg in sample 20230510-CHEVRON EL12 697-(FC-FL 12-11D WH BASE)@5 at 1.64 mg/kg.
- 1, 3, 5-Trimethylbenzene was reported in exceedance of the PGSSL concentration of 0.0087 mg/kg in sample 20230510-CHEVRON EL12 697-(FC-FL 12-11D WH BASE)@5 at 2.75 mg/kg and sample 20230720-CHEVRON EL12 697-(FC WH 12-11D SW)@5 at 0.0191 mg/kg.
- Benzo(a)anthracene was reported in exceedance of the PGSSL concentration of 0.011mg/kg in sample 20230720-CHEVRON EL12 697-(FC WH 12-11D BASE)@7 at 0.0128 mg/kg and sample 20230720-CHEVRON EL12 697-(FC WH 12-11D WW)@5 at 0.0121 mg/kg.
- 1-Methylnaphthalene was reported in exceedance of the PGSSL concentration of 0.006 mg/kg in all samples. Six (6) of the nine (9) detections were at concentrations below the laboratory reportable detection limit (RDL) of 0.200 mg/kg. The remaining three (3) samples with measurable exceedances were:
 - 20230510-CHEVRON EL12 697-(FC-FL 12-11D WH BASE)@5 at 0.0416 mg/kg
 - 20230720-CHEVRON EL12 697-(FC WH 12-11D BASE)@7 at 0.0625 mg/kg
 - 20230720-CHEVRON EL12 697-(FC WH 12-11D WW)@5 at 0.0219 mg/kg
- 2-Methylnaphthalene was reported in exceedance of the PGSSL concentration of 0.019 mg/kg in eight (8) samples. Five (5) of the detections were at concentrations below the laboratory RDL of 0.0200 mg/kg. The remaining three (3) samples with measurable exceedances were:
 - 20230510-CHEVRON EL12 697-(FC-FL 12-11D WH BASE)@5 at 0.0891 mg/kg
 - 20230720-CHEVRON EL12 697-(FC WH 12-11D SW)@5 at 0.0349 mg/kg
 - 20230720-CHEVRON EL12 697-(FC WH 12-11D WW)@5 at 0.0367 mg/kg
- Naphthalene was reported in exceedance of the PGSSL concentration of 0.0038 mg/kg in all samples. Seven (7) of the detections were at concentrations below the laboratory RDL of 0.0200 mg/kg. The remaining two (2) samples with measurable exceedances were:
 - 20230510-CHEVRON EL12 697-(FC-FL 12-11D WH BASE)@5 at 0.0338 mg/kg
 - 20230720-CHEVRON EL12 697-(FC WH 12-11D BASE)@7 at 0.0659 mg/kg
- pH was reported above the SSR acceptable range of 6 to 8.3 in sample 20231010-EL12697-(FCWH1211DWW)@5 at 8.56.
- Arsenic was reported in exceedance of the PGSSL concentration of 0.29 mg/kg in all samples, ranging from 4.41 mg/kg to 23.3 mg/kg.
- Barium was reported in exceedance of the PGSSL concentration of 82 mg/kg in all samples, ranging from 246 mg/kg to 433 mg/kg.
- Cadmium was identified in all samples at concentrations below the laboratory RDL of 1.00 mg/kg. The PGSSL concentration for Cadmium is 0.38 mg/kg.
- Hexavalent Chromium was identified in all samples at concentrations below the laboratory RDL of 1.00 mg/kg. The PGSSL concentration for hexavalent chromium is 0.00067 mg/kg.
- Copper was reported in exceedance of the PGSSL concentration of 46 mg/kg in sample 20230720-CHEVRON EL12 697-(FC WH 12-11D EW)@5 at 182 mg/kg.
- Lead was reported in exceedance of the PGSSL concentration of 14 mg/kg in seven (7) samples ranging from 15.8 mg/kg to 23.2 mg/kg.

- Nickel was reported in exceedance of the PGSSL concentration of 26 mg/kg in sample 20231010-EL12697-(FCWH1211DWW)@5 at 34.2 mg/kg and sample 20231010-EL12697-(FCWH1211DWW)@10 at 30.3 mg/kg.
- Selenium was identified in all samples at concentrations below the laboratory RDL of 2.50 mg/kg. The PGSSL concentration for selenium is 0.26 mg/kg.

All remaining soil analytical results were below applicable CECMC Table 915-1 standards. Laboratory analysis reports and chain-of-custody documentation are included as **Attachments**.

CONCLUSIONS AND RECOMMENDATIONS

Soil analytical results have reported detections of cadmium, hexavalent chromium, and selenium in all samples at concentrations below respective laboratory RDLs. Most reported detections of 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene were also at concentrations below respective laboratory RDLs. Entrada requests that CECMC Table 915-1 Footnote 9 be considered for all results below laboratory RDLs.

The base of the flowline excavation adjacent to the separator had reportable concentrations of arsenic, barium, and lead in exceedance of respective PGSSL concentrations. The concentrations of arsenic and barium in this sample were below the site-specific background concentrations.

The north wall of the wellhead excavation had reportable exceedances for arsenic and barium; however, these were below the site-specific background concentrations.

The east wall of the wellhead excavation had reportable concentrations of arsenic, barium, copper, and lead in exceedance of the respective PGSSL concentrations. The concentrations of arsenic and barium were below the site-specific background concentration.

The south wall of the wellhead excavation had reportable concentrations of 1, 3, 5-trimethylbenzene, 2-methylbenzene, arsenic, barium, and lead. The concentrations of arsenic and barium were below the site-specific background concentrations.

TPH and remaining organic compounds were not present in samples collected from the west wall of the wellhead excavation. The pH results of the sample at 5 ft-bgs was slightly above the SSR upper limit, but the sample at 10 ft-bgs was within the SSR range. Both samples had elevated concentrations of arsenic, barium, lead, and nickel in exceedance of respective PGSSL concentrations.

The base of the wellhead excavation at 7 ft-bgs had exceedances in TPH, benzo(a)anthracene, 1-methylnaphthalene, naphthalene, arsenic, barium, and lead. The concentrations of arsenic and barium were below the site-specific background concentrations.

Entrada requests that the CECMC consider Table 915-1 Footnote 1 in the case of all above-mentioned exceedances that fall below site-specific background concentrations.

Based on the analytical results discussed above, Entrada recommends the following:

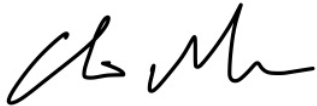
- Collection of a representative produced water sample from another well at the Site completed in the same formation as the 12-11D to be analyzed for CECMC Table 915-1 Metals to determine whether those constituents are present in the produced water at concentrations that could cause the elevated levels observed in the soil samples.

- Additional excavation at the 12-11D wellhead to remove soil with organic exceedances.

We appreciate the opportunity to assist Caerus Oil and Gas LLC. Please contact us at (970) 270-2986 if you have any questions.

Sincerely,

ENTRADA CONSULTING GROUP



Christopher Mace
Senior Geologist

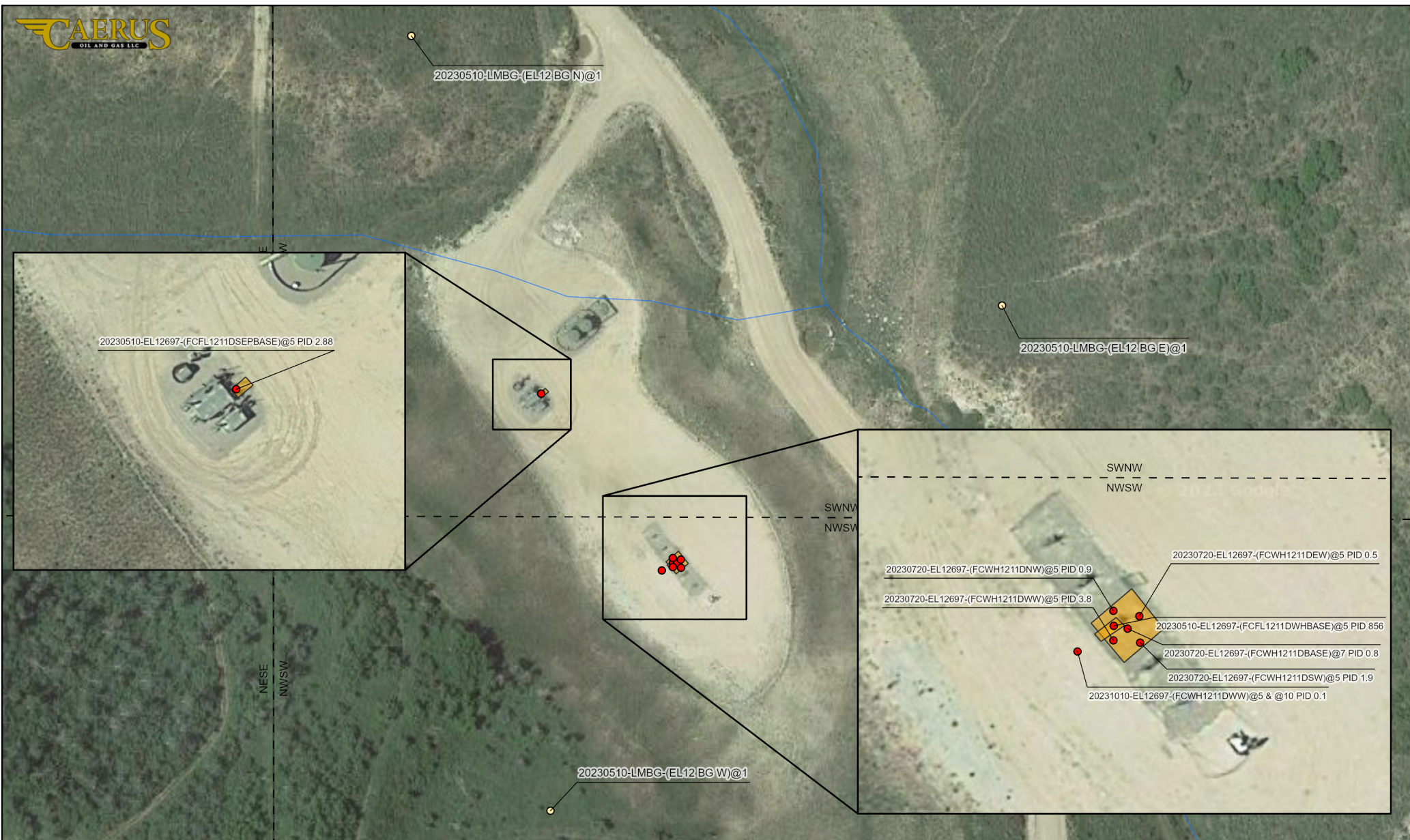


Tim Dobransky
Principal Scientist

Attachments:

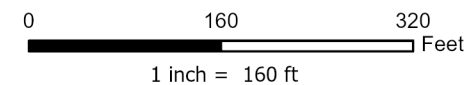
Figure 1 – Site Diagram
Table 1 – Soil Analytical Results – Organic
Table 2 – Soil Analytical Results – Inorganic
Photographic Log
Soil Laboratory Analytical Reports


FIGURES



LEGEND

- Background Sample
- Soil Sample Location
- Excavation Areas



Project No: 022-096	<p align="center">Facility Closure Diagram Chevron EL 12 967 12-11D Caerus Oil and Gas LLC NWSW / SWNW, Section 12, T6S R97W, 6th PM Garfield County, Colorado</p>	 <p>330 Grand Avenue, Unit C Grand Junction, CO 81501 970-549-1015</p>	Figure
Map By: NDB			1
Date: 12/15/2023			

TABLES

TABLE 1

CHEVRON EL 12 697
CAERUS OPERATING LLC
GARFIELD COUNTY, COLORADO

CECMC TABLE 915-1
PROTECTION OF GROUNDWATER
SOIL SCREENING LEVEL - ORGANIC

PROTECTION OF GROUNDWATER SOIL SCREENING LEVEL CONCENTRATION (mg/Kg)										Contaminants of Concern				Organic Compounds in Soil																					
RESIDENTIAL SOIL SCREENING LEVEL CONCENTRATION (mg/Kg)										500 mg/Kg				0.0025	0.69	0.78	9.9	0.0081	0.0087	0.55	5.8	0.011	0.3	2.9	0.24	9	0.095	5.9	0.54	0.98	0.006	0.019	0.0038	1.3	
Location	Lab Report #	Sample Date	Project	Sample ID	Location	Sample Depth (ft)	TPH (Total Petrol. Hydrocarbons (C ₁₀ - C ₂₅))	TPH-GRO (C ₁₀ - C ₁₉) Low Fraction	TPH-DRO (C ₂₀ - C ₂₅) High Fraction	TPH-ORO (C ₁₀ - C ₂₅) Oil Fraction	Benzene	Toluene	Ethylbenzene	Xylenes (m, o, p, and i-isomers) (mg/kg)	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Nonhalogenated naphthalene	Anthracene	Benzo[a]anthracene	Benzo[b]fluoranthene	Benzo[k]fluoranthene	Benzo[e]pyrene	Chrysene	Benzo[a]pyrene	Fluoranthene	Pyrene	Indeno[1,2,3-cd]pyrene	1-methyl-naphthalene	2-methyl-naphthalene	naphthalene	pyrene				
Chevron EL12 697	L1615557	2023-05-10	12-11D FL FC	20230510-CHEVRON EL12 697-(FC-FL 12-11D WH BASE)@5	12-11D FL WH BASE	5	2072	970	519	983	<0.00100	20.3	0.22	4.93	1.84	2.75	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	0.0416	0.0891	0.0338	<0.00600				
Chevron EL12 697	L1615557	2023-05-10	12-11D FL FC	20230510-CHEVRON EL12 697-(FC-FL 12-11D SEP BASE)@5	12-11D FL SEP BASE	5	283.731	0.731	129	154	<0.00100	<0.00500	<0.00250	<0.00650	<0.00500	<0.00500	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600			
Chevron EL12 697	L1637974	2023-07-20	12-11D WH FC	20230720-CHEVRON EL12 697-(FC WH 12-11D NW)@5	12-11D WH NW	5	93.4	<0.100	30.6	62.7	<0.00100	<0.00500	<0.00250	<0.00650	<0.00500	<0.00500	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600			
Chevron EL12 697	L1637974	2023-07-20	12-11D WH FC	20230720-CHEVRON EL12 697-(FC WH 12-11D EW)@5	12-11D WH EW	5	110.859	0.259	45.4	65.2	0.00156	<0.00500	<0.00250	<0.00650	<0.00500	<0.00500	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600			
Chevron EL12 697	L1637974	2023-07-20	12-11D WH FC	20230720-CHEVRON EL12 697-(FC WH 12-11D SW)@5	12-11D WH SW	5	294.265	0.265	121	173	<0.00100	<0.00500	<0.00250	0.00925	0.00577	0.0191	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600			
Chevron EL12 697	L1637974	2023-07-20	12-11D WH FC	20230720-CHEVRON EL12 697-(FC WH 12-11D WW)@5	12-11D WH WW	5	7362.98	2.98	2630	4739	<0.00100	<0.00500	<0.00250	<0.00650	<0.00500	0.00616	<0.00600	<0.00600	0.0121	0.0204	0.0189	0.0157	0.011	<0.00600	0.0201	0.0114	0.00863	0.0219	0.0367	<0.0200	0.0243				
Chevron EL12 697	L1637974	2023-07-20	12-11D WH FC	20230720-CHEVRON EL12 697-(FC WH 12-11D BASE)@7	12-11D WH BASE	7	1099.58	2.58	422	675	<0.00100	<0.00500	<0.00250	<0.00650	<0.00500	0.00532	<0.00600	<0.00600	0.0128	0.0157	0.00609	0.0106	0.0142	<0.00600	0.0239	0.0284	0.00841	0.0625	0.0114	0.0699	0.0607				
Chevron EL12 697	L1665084	2023-10-10	12-11D WH FC	20231010-EL12697-(FCWH121DWW)@5	12-11D WH WW	5	169.5	<0.100	29.4	140	<0.00100	<0.00500	<0.00250	<0.00650	<0.00500	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600			
Chevron EL12 697	L1665084	2023-10-10	12-11D WH FC	20231010-EL12697-(FCWH121DWW)@10	12-11D WH WW	10	135	<0.100	25.9	109	<0.00100	<0.00500	<0.00250	<0.00650	<0.00500	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600			
Chevron EL12 698	L1615558	2023-05-10	Background	20230510-LMBG-(EL12 BG N)@1	BG N	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Chevron EL12 700	L1615558	2023-05-10	Background	20230510-LMBG-(EL12 BG W)@1	BG W	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Chevron EL12 699	L1615558	2023-05-10	Background	20230510-LMBG-(EL12 BG E)@1	BG E	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		

Notes:

mg/kg - milligrams per kilogram

mmhos/cm - millimhos per centimeter

mg/L - milligrams per liter

TPH - total petroleum hydrocarbons

< - indicates result is below the laboratory minimum reporting limit

BLUE - indicates result is above the applicable Table 915-1 Protection of Groundwater Screening Level

TABLE 2

**CHEVRON EL 12 697
CAERUS OPERATING LLC
GARFIELD COUNTY, COLORADO**

**CECMC TABLE 915-1
PROTECTION OF GROUNDWATER
SOIL SCREENING LEVEL - INORGANIC**

PROTECTION OF GROUNDWATER SOIL SCREENING LEVEL CONCENTRATION (mg/Kg)							Soil Suitability for Reclamation				Metals in Soil									
RESIDENTIAL SOIL SCREENING LEVEL CONCENTRATION (mg/Kg)							<4.0 mmhos/cm	<6	6 — 8.3	2 mg/L	0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
Location	Lab Report #	Sample Date	Project	Sample ID	Location	Sample Depth (ft)	Electrical Conductivity (EC) (saturated paste method)	Sodium Adsorption Ratio (SAR) (saturated paste method)	pH (saturated paste method)	Boron (hot water soluble soil extract)	Arsenic	Barium	Cadmium	Chromium (VI)	Copper	Lead	Nickel	Selenium	Silver	Zinc
Chevron EL12 697	L1615557	2023-05-10	12-11D FL FC	20230510-CHEVRON EL12 697-(FC-FL 12-11D WH BASE)@5	12-11D FL WH BASE	5	0.44	1.44	8.03	0.449	13.5	246	<1.00	<1.00	19	14	15.9	<2.50	<0.500	60.2
Chevron EL12 697	L1615557	2023-05-10	12-11D FL FC	20230510-CHEVRON EL12 697-(FC-FL 12-11D SEP BASE)@5	12-11D FL SEP BASE	5	0.132	0.589	8.29	<0.400	5.88	315	<1.00	<1.00	7.98	18.7	9.81	<2.50	<0.500	51.4
Chevron EL12 697	L1637974	2023-07-20	12-11D WH FC	20230720-CHEVRON EL12 697-(FC WH 12-11D NW)@5	12-11D WH NW	5	0.371	2.38	8.24	<0.200	5.7	246	<1.00	<1.00	20.5	13.2	15.7	<2.50	<0.500	49.4
Chevron EL12 697	L1637974	2023-07-20	12-11D WH FC	20230720-CHEVRON EL12 697-(FC WH 12-11D EW)@5	12-11D WH EW	5	0.453	1.84	8.05	0.274	7.75	303	<1.00	<1.00	182	15.8	14.2	<2.50	<0.500	55.9
Chevron EL12 697	L1637974	2023-07-20	12-11D WH FC	20230720-CHEVRON EL12 697-(FC WH 12-11D SW)@5	12-11D WH SW	5	0.312	1.37	7.96	0.232	7.01	369	<1.00	<1.00	22.6	16.9	18	<2.50	<0.500	65.3
Chevron EL12 697	L1637974	2023-07-20	12-11D WH FC	20230720-CHEVRON EL12 697-(FC WH 12-11D WW)@5	12-11D WH WW	5	0.331	1.55	7.85	0.457	7.43	333	<1.00	<1.00	21.2	23.2	16	<2.50	<0.500	54.5
Chevron EL12 697	L1637974	2023-07-20	12-11D WH FC	20230720-CHEVRON EL12 697-(FC WH 12-11D BASE)@7	12-11D WH BASE	7	0.507	0.925	7.95	0.283	4.41	313	<1.00	<1.00	20.8	18	21	<2.50	<0.500	42.4
Chevron EL12 697	L1665084	2023-10-10	12-11D WH FC	20231010-EL12697-(FCWH1211DWW)@5	12-11D WH WW	5	0.137	0.692	8.56	<0.200	23.3	433	<1.00	<1.00	29.4	21.1	34.2	<2.50	<0.500	92.9
Chevron EL12 697	L1665084	2023-10-10	12-11D WH FC	20231010-EL12697-(FCWH1211DWW)@10	12-11D WH WW	10	0.125	0.677	8.29	<0.200	18.9	413	<1.00	<1.00	27.6	18.6	30.3	<2.50	<0.500	76.1
Chevron EL12 698	L1615558	2023-05-10	Background	20230510-LMBG-(EL12 BG N)@1	BG N	1	0.0518	0.149	7.1	0.451	8.51	358	ND	ND	18.6	15.7	16	ND	ND	47.2
Chevron EL12 700	L1615558	2023-05-10	Background	20230510-LMBG-(EL12 BG W)@1	BG W	1	0.0558	0.174	6.73	<0.400	3.86	204	ND	ND	9.73	11.1	10.6	ND	ND	35.8
Chevron EL12 699	L1615558	2023-05-10	Background	20230510-LMBG-(EL12 BG E)@1	BG E	1	0.0861	0.166	6.96	0.429	4.72	284	ND	ND	14.5	13.3	14.4	ND	ND	44.5

Notes:

mg/kg - milligrams per kilogram

mmhos/cm - millimhos per centimeter



mg/L - milligrams per liter


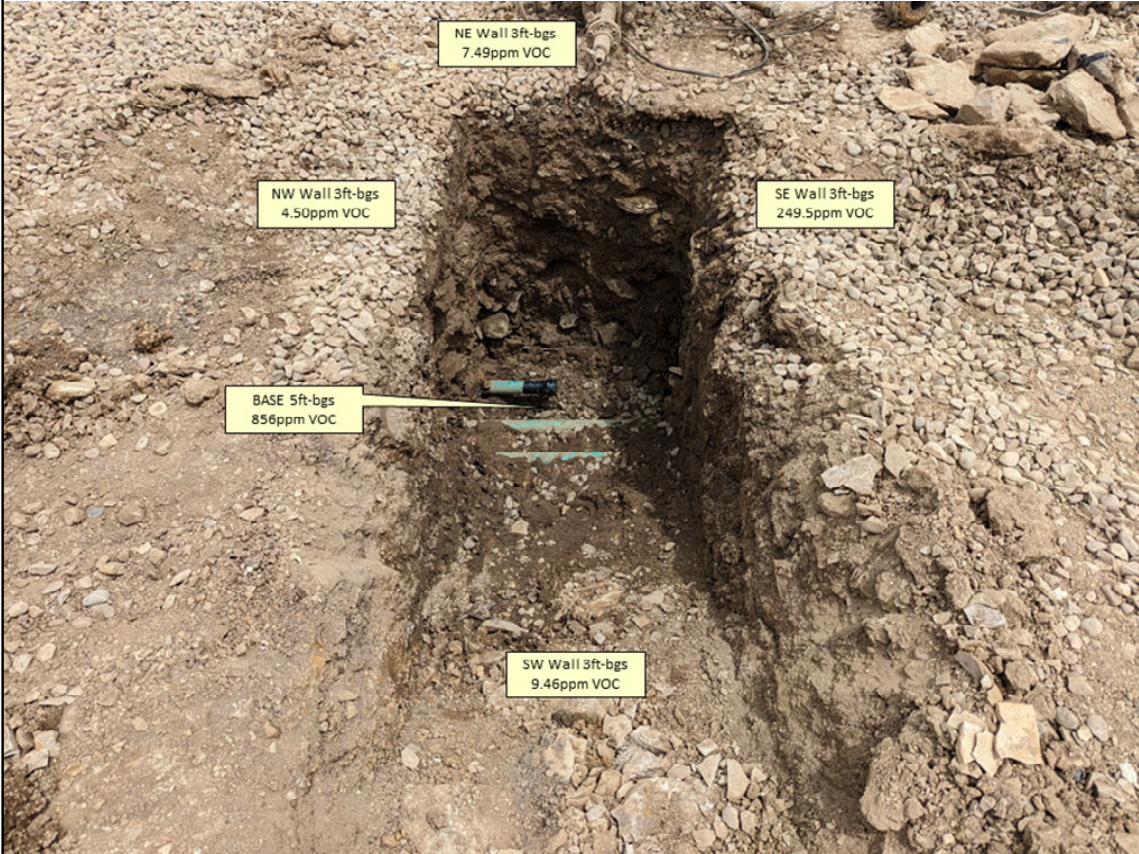
TPH - total petroleum hydrocarbons



< - indicates result is below the laboratory minimum reporting limit

BLUE - indicates result is above the applicable Table 915-1 Protection of Groundwater Screening Level

PHOTOGRAPHIC LOG

<p>Site: Chevron EL 12 687</p>	<p>Project: 12-11D P&A</p>	<p>Project #: 022-096</p>
<p>Date: 2023-05-10</p> <p>Location: 12-11D Flowline at Separator</p> <p>Description: Flowline excavation at separator. View looking southwest.</p>		
<p>Date: 2023-05-10</p> <p>Location: 12-11D Flowline at Separator</p> <p>Description: Flowline cut and capped at separator. View looking southwest.</p>		

<div>Site:</div> <div>Chevron EL 12 697</div>	<div>Project:</div> <div>12-11D P&A</div>	<div>Project #:</div> <div>022-096</div>										
<div>Date:</div> <div>2023-05-10</div> <div>Location:</div> <div>12-11D Flowline at Wellhead</div> <div>Description:</div> <div>Flowline excavation at wellhead. View looking northeast.</div>												
<div>Date:</div> <div>2023-05-10</div> <div>Location:</div> <div>12-11D Flowline at Wellhead</div> <div>Description:</div> <div>Flowline cut and capped at wellhead with VOC screening results. View looking northeast.</div>	 <table><tr><td>NE Wall 3ft-bgs</td><td>7.49ppm VOC</td></tr><tr><td>NW Wall 3ft-bgs</td><td>4.50ppm VOC</td></tr><tr><td>SE Wall 3ft-bgs</td><td>249.5ppm VOC</td></tr><tr><td>BASE 5ft-bgs</td><td>856ppm VOC</td></tr><tr><td>SW Wall 3ft-bgs</td><td>9.46ppm VOC</td></tr></table>		NE Wall 3ft-bgs	7.49ppm VOC	NW Wall 3ft-bgs	4.50ppm VOC	SE Wall 3ft-bgs	249.5ppm VOC	BASE 5ft-bgs	856ppm VOC	SW Wall 3ft-bgs	9.46ppm VOC
NE Wall 3ft-bgs	7.49ppm VOC											
NW Wall 3ft-bgs	4.50ppm VOC											
SE Wall 3ft-bgs	249.5ppm VOC											
BASE 5ft-bgs	856ppm VOC											
SW Wall 3ft-bgs	9.46ppm VOC											

Site: Chevron EL 12 697	Project: 12-11D P&A	Project #: 022-096
Date: 2023-05-10 Location: 12-11D Flowline at Wellhead Description: Flowline excavation at wellhead. Black substance in base of hole. Very strong odor.		
Date: 2023-05-10 Location: 12-11D Flowline at Wellhead Description: Flowline excavation at wellhead. Black substance in base of hole. Very strong odor.		

<p>Site: Chevron EL 12 697</p>	<p>Project: 12-11D P&A</p>	<p>Project #: 022-096</p>
<p>Date: 2023-07-20</p> <p>Location: 12-11D Wellhead</p> <p>Description: Wellhead cover plate.</p>		
<p>Date: 2023-07-20</p> <p>Location: 12-11D Wellhead</p> <p>Description: Wellhead excavation. View from northeast to southwest.</p>		

SOIL

LABORATORY ANALYTICAL REPORTS

May 24, 2023

Caerus Oil and Gas

Sample Delivery Group: L1615557
Samples Received: 05/12/2023
Project Number:
Description: EL12 12-11D Flowline

Report To: Brett M. , Jake J. , Blair R.
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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¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

SAMPLE SUMMARY

20230510-CHEVRONEL12697-(FCFL1211DWHBASE L1615557-01
Solid

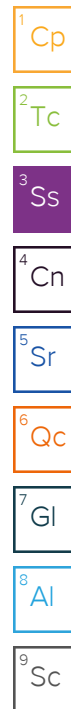
Collected by C. Mace Collected date/time 05/10/23 13:15 Received date/time 05/12/23 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2060185	1	05/23/23 14:05	05/23/23 14:05	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2059551	1	05/17/23 07:09	05/17/23 14:22	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2059229	1	05/15/23 10:32	05/15/23 15:48	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2060737	1	05/19/23 08:00	05/19/23 09:46	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2060187	2	05/22/23 18:38	05/23/23 14:44	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2059199	5	05/13/23 04:25	05/15/23 20:37	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2061684	1000	05/16/23 11:53	05/17/23 23:02	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2063302	10	05/16/23 11:53	05/21/23 19:05	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2061267	25	05/17/23 15:12	05/18/23 10:12	JAS	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2061267	5	05/17/23 15:12	05/18/23 04:53	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2061638	1	05/18/23 22:06	05/19/23 02:39	KLZ	Mt. Juliet, TN

20230510-CHEVRONEL12697-(FCFL1211DSEPBAS L1615557-02
Solid

Collected by C. Mace Collected date/time 05/10/23 13:45 Received date/time 05/12/23 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2060185	1	05/23/23 14:03	05/23/23 14:03	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2059551	1	05/17/23 07:09	05/17/23 14:27	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2059229	1	05/15/23 10:32	05/15/23 15:48	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2060737	1	05/19/23 08:00	05/19/23 09:46	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2060187	2	05/22/23 18:38	05/23/23 14:46	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2059199	5	05/13/23 04:25	05/15/23 20:40	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2061681	1	05/16/23 11:53	05/17/23 20:29	KSD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2061386	1	05/16/23 11:53	05/17/23 13:26	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2061267	1	05/17/23 15:12	05/18/23 04:03	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2061638	1	05/18/23 22:06	05/19/23 02:58	KLZ	Mt. Juliet, TN

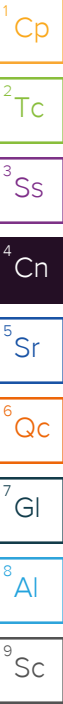


CASE NARRATIVE

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	1.44		1	05/23/2023 14:05	WG2060185

1
Cp

2
Tc

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	05/17/2023 14:22	WG2059551

3
Ss

4
Cn

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.03	T8	1	05/15/2023 15:48	WG2059229

5
Sr

6
Qc

Sample Narrative:

L1615557-01 WG2059229: 8.03 at 22.8C

7
Gl

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	440		10.0	1	05/19/2023 09:46	WG2060737

8
Al

9
Sc

Sample Narrative:

L1615557-01 WG2060737: at 25C

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.449	B	0.400	2	05/23/2023 14:44	WG2060187

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	13.5		1.00	5	05/15/2023 20:37	WG2059199
Barium	246		2.50	5	05/15/2023 20:37	WG2059199
Cadmium	ND		1.00	5	05/15/2023 20:37	WG2059199
Copper	19.0		5.00	5	05/15/2023 20:37	WG2059199
Lead	14.0		2.00	5	05/15/2023 20:37	WG2059199
Nickel	15.9		2.50	5	05/15/2023 20:37	WG2059199
Selenium	ND		2.50	5	05/15/2023 20:37	WG2059199
Silver	ND		0.500	5	05/15/2023 20:37	WG2059199
Zinc	60.2		25.0	5	05/15/2023 20:37	WG2059199

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	570		100	1000	05/17/2023 23:02	WG2061684
(S) a,a,a-Trifluorotoluene(FID)	100		77.0-120		05/17/2023 23:02	WG2061684

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.0100	10	05/21/2023 19:05	WG2063302
Toluene	20.3		0.0500	10	05/21/2023 19:05	WG2063302
Ethylbenzene	0.220		0.0250	10	05/21/2023 19:05	WG2063302
Xylenes, Total	4.93		0.0650	10	05/21/2023 19:05	WG2063302
1,2,4-Trimethylbenzene	1.64		0.0500	10	05/21/2023 19:05	WG2063302
1,3,5-Trimethylbenzene	2.75		0.0500	10	05/21/2023 19:05	WG2063302
(S) Toluene-d8	95.8		75.0-131		05/21/2023 19:05	WG2063302
(S) 4-Bromofluorobenzene	90.8		67.0-138		05/21/2023 19:05	WG2063302
(S) 1,2-Dichloroethane-d4	98.2		70.0-130		05/21/2023 19:05	WG2063302

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	519		20.0	5	05/18/2023 04:53	WG2061267
C28-C36 Motor Oil Range	983		100	25	05/18/2023 10:12	WG2061267
(S) o-Terphenyl	0.000	J7	18.0-148		05/18/2023 10:12	WG2061267
(S) o-Terphenyl	64.9		18.0-148		05/18/2023 04:53	WG2061267

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.00600	1	05/19/2023 02:39	WG2061638
Anthracene	ND		0.00600	1	05/19/2023 02:39	WG2061638
Benzo(a)anthracene	ND		0.00600	1	05/19/2023 02:39	WG2061638
Benzo(b)fluoranthene	ND		0.00600	1	05/19/2023 02:39	WG2061638
Benzo(k)fluoranthene	ND		0.00600	1	05/19/2023 02:39	WG2061638
Benzo(a)pyrene	ND		0.00600	1	05/19/2023 02:39	WG2061638
Chrysene	ND		0.00600	1	05/19/2023 02:39	WG2061638
Dibenz(a,h)anthracene	ND		0.00600	1	05/19/2023 02:39	WG2061638
Fluoranthene	ND		0.00600	1	05/19/2023 02:39	WG2061638
Fluorene	ND		0.00600	1	05/19/2023 02:39	WG2061638
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	05/19/2023 02:39	WG2061638
1-Methylnaphthalene	0.0416		0.0200	1	05/19/2023 02:39	WG2061638
2-Methylnaphthalene	0.0891		0.0200	1	05/19/2023 02:39	WG2061638
Naphthalene	0.0338		0.0200	1	05/19/2023 02:39	WG2061638
Pyrene	ND		0.00600	1	05/19/2023 02:39	WG2061638
(S) p-Terphenyl-d14	80.4		23.0-120		05/19/2023 02:39	WG2061638
(S) Nitrobenzene-d5	140		14.0-149		05/19/2023 02:39	WG2061638
(S) 2-Fluorobiphenyl	88.6		34.0-125		05/19/2023 02:39	WG2061638

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	0.589		1	05/23/2023 14:03	WG2060185

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	05/17/2023 14:27	WG2059551

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.29	T8	1	05/15/2023 15:48	WG2059229

Sample Narrative:

L1615557-02 WG2059229: 8.29 at 22.7C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	132		10.0	1	05/19/2023 09:46	WG2060737

Sample Narrative:

L1615557-02 WG2060737: at 25C

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	ND		0.400	2	05/23/2023 14:46	WG2060187

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	5.88		1.00	5	05/15/2023 20:40	WG2059199
Barium	315		2.50	5	05/15/2023 20:40	WG2059199
Cadmium	ND		1.00	5	05/15/2023 20:40	WG2059199
Copper	7.98		5.00	5	05/15/2023 20:40	WG2059199
Lead	18.7		2.00	5	05/15/2023 20:40	WG2059199
Nickel	9.81		2.50	5	05/15/2023 20:40	WG2059199
Selenium	ND		2.50	5	05/15/2023 20:40	WG2059199
Silver	ND		0.500	5	05/15/2023 20:40	WG2059199
Zinc	51.4		25.0	5	05/15/2023 20:40	WG2059199

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.731		0.100	1	05/17/2023 20:29	WG2061681
(S) a,a,a-Trifluorotoluene(FID)	92.5		77.0-120		05/17/2023 20:29	WG2061681

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	05/17/2023 13:26	WG2061386
Toluene	ND		0.00500	1	05/17/2023 13:26	WG2061386
Ethylbenzene	ND		0.00250	1	05/17/2023 13:26	WG2061386
Xylenes, Total	ND		0.00650	1	05/17/2023 13:26	WG2061386
1,2,4-Trimethylbenzene	ND		0.00500	1	05/17/2023 13:26	WG2061386
1,3,5-Trimethylbenzene	ND		0.00500	1	05/17/2023 13:26	WG2061386
(S) Toluene-d8	107		75.0-131		05/17/2023 13:26	WG2061386
(S) 4-Bromofluorobenzene	83.6		67.0-138		05/17/2023 13:26	WG2061386
(S) 1,2-Dichloroethane-d4	107		70.0-130		05/17/2023 13:26	WG2061386

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	129		4.00	1	05/18/2023 04:03	WG2061267
C28-C36 Motor Oil Range	154		4.00	1	05/18/2023 04:03	WG2061267
(S) o-Terphenyl	94.3		18.0-148		05/18/2023 04:03	WG2061267

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.00600	1	05/19/2023 02:58	WG2061638
Anthracene	ND		0.00600	1	05/19/2023 02:58	WG2061638
Benzo(a)anthracene	ND		0.00600	1	05/19/2023 02:58	WG2061638
Benzo(b)fluoranthene	ND		0.00600	1	05/19/2023 02:58	WG2061638
Benzo(k)fluoranthene	ND		0.00600	1	05/19/2023 02:58	WG2061638
Benzo(a)pyrene	ND		0.00600	1	05/19/2023 02:58	WG2061638
Chrysene	ND		0.00600	1	05/19/2023 02:58	WG2061638
Dibenz(a,h)anthracene	ND		0.00600	1	05/19/2023 02:58	WG2061638
Fluoranthene	ND		0.00600	1	05/19/2023 02:58	WG2061638
Fluorene	ND		0.00600	1	05/19/2023 02:58	WG2061638
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	05/19/2023 02:58	WG2061638
1-Methylnaphthalene	ND		0.0200	1	05/19/2023 02:58	WG2061638
2-Methylnaphthalene	ND		0.0200	1	05/19/2023 02:58	WG2061638
Naphthalene	ND		0.0200	1	05/19/2023 02:58	WG2061638
Pyrene	ND		0.00600	1	05/19/2023 02:58	WG2061638
(S) p-Terphenyl-d14	83.3		23.0-120		05/19/2023 02:58	WG2061638
(S) Nitrobenzene-d5	84.1		14.0-149		05/19/2023 02:58	WG2061638
(S) 2-Fluorobiphenyl	82.7		34.0-125		05/19/2023 02:58	WG2061638

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3926091-1 05/17/23 14:10

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

L1615558-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1615558-01 05/17/23 14:32 • (DUP) R3926091-3 05/17/23 14:38

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

L1615773-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1615773-05 05/17/23 16:31 • (DUP) R3926091-8 05/17/23 16:46

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

Laboratory Control Sample (LCS)

(LCS) R3926091-2 05/17/23 14:17

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	10.5	105	80.0-120	

L1615773-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1615773-03 05/17/23 15:30 • (MS) R3926091-4 05/17/23 16:02 • (MSD) R3926091-5 05/17/23 16:10

	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	ND	16.9	16.3	84.5	81.6	1	75.0-125			3.54	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1615483-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1615483-08 05/15/23 15:48 • (DUP) R3925250-2 05/15/23 15:48

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	pH	su		%		%
pH	7.04	6.94	1	1.43	J3	1

Sample Narrative:

OS: 7.04 at 22.8C

DUP: 6.94 at 23C

L1615558-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1615558-01 05/15/23 15:48 • (DUP) R3925250-3 05/15/23 15:48

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	pH	su		%		%
pH	7.10	7.13	1	0.422		1

Sample Narrative:

OS: 7.1 at 23C

DUP: 7.13 at 22.8C

Laboratory Control Sample (LCS)

(LCS) R3925250-1 05/15/23 15:48

	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 at 22.6C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3926802-1 05/19/23 09:46

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

Sample Narrative:

BLANK: at 25C

L1615498-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1615498-04 05/19/23 09:46 • (DUP) R3926802-3 05/19/23 09:46

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	509	502	1	1.38		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1615773-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1615773-10 05/19/23 09:46 • (DUP) R3926802-4 05/19/23 09:46

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	559	565	1	1.07		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3926802-2 05/19/23 09:46

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	1120	1080	96.3	85.0-115	

Sample Narrative:

LCS: at 25C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3928480-1 05/23/23 14:36

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hot Water Sol. Boron	0.0811	⬇	0.0167	0.200

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

(LCS) R3928480-2 05/23/23 14:38 • (LCSD) R3928480-3 05/23/23 14:41

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	1.19	1.18	119	118	80.0-120			0.768	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3925116-2 05/15/23 19:05

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00
Barium	U		0.152	2.50
Cadmium	U		0.0855	1.00
Copper	U		0.133	5.00
Lead	U		0.0990	2.00
Nickel	U		0.197	2.50
Selenium	U		0.180	2.50
Silver	U		0.0865	0.500
Zinc	U		0.740	25.0

Laboratory Control Sample (LCS)

(LCS) R3925116-3 05/15/23 19:08

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	91.8	91.8	80.0-120	
Barium	100	88.0	88.0	80.0-120	
Cadmium	100	92.3	92.3	80.0-120	
Copper	100	83.8	83.8	80.0-120	
Lead	100	88.5	88.5	80.0-120	
Nickel	100	93.1	93.1	80.0-120	
Selenium	100	94.6	94.6	80.0-120	
Silver	20.0	17.9	89.3	80.0-120	
Zinc	100	91.2	91.2	80.0-120	

L1615483-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1615483-08 05/15/23 19:12 • (MS) R3925116-6 05/15/23 19:21 • (MSD) R3925116-7 05/15/23 19:25

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	3.83	88.0	90.0	84.2	86.1	5	75.0-125			2.19	20
Barium	100	191	283	311	92.4	120	5	75.0-125			9.33	20
Cadmium	100	ND	95.9	93.6	95.8	93.5	5	75.0-125			2.45	20
Copper	100	6.78	89.2	87.2	82.4	80.4	5	75.0-125			2.25	20
Lead	100	9.89	103	112	93.2	102	5	75.0-125			8.50	20
Nickel	100	13.1	100	97.9	87.1	84.8	5	75.0-125			2.29	20
Selenium	100	ND	99.4	93.6	99.0	93.2	5	75.0-125			6.04	20
Silver	20.0	ND	17.1	16.8	85.7	84.0	5	75.0-125			1.98	20
Zinc	100	35.6	121	118	85.1	82.4	5	75.0-125			2.25	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3926791-2 05/17/23 14:49

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)	96.9			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3926791-1 05/17/23 14:08

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.80	105	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			109	77.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3926111-2 05/17/23 14:33

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.543	2.50
(S) a,a,a-Trifluorotoluene(FID)	97.7			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3926111-1 05/17/23 12:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	6.08	111	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			102	77.0-120	

L1615557-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1615557-01 05/17/23 23:02 • (MS) R3926111-3 05/17/23 23:51 • (MSD) R3926111-4 05/18/23 00:15

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	5500	570	5600	5980	91.5	98.4	1000	10.0-151			6.56	28
(S) a,a,a-Trifluorotoluene(FID)					103	106		77.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3926267-2 05/17/23 10:19

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	105			75.0-131
(S) 4-Bromofluorobenzene	84.1			67.0-138
(S) 1,2-Dichloroethane-d4	108			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3926267-1 05/17/23 09:02

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.113	90.4	70.0-123	
Toluene	0.125	0.129	103	75.0-121	
Ethylbenzene	0.125	0.127	102	74.0-126	
Xylenes, Total	0.375	0.361	96.3	72.0-127	
1,2,4-Trimethylbenzene	0.125	0.125	100	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.124	99.2	73.0-127	
(S) Toluene-d8			104	75.0-131	
(S) 4-Bromofluorobenzene			85.1	67.0-138	
(S) 1,2-Dichloroethane-d4			110	70.0-130	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3928150-3 05/21/23 12:33

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	107			75.0-131
(S) 4-Bromofluorobenzene	88.9			67.0-138
(S) 1,2-Dichloroethane-d4	87.8			70.0-130

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

(LCS) R3928150-1 05/21/23 11:14 • (LCSD) R3928150-2 05/21/23 11:34

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	0.114	0.116	91.2	92.8	70.0-123			1.74	20
Toluene	0.125	0.103	0.110	82.4	88.0	75.0-121			6.57	20
Ethylbenzene	0.125	0.106	0.113	84.8	90.4	74.0-126			6.39	20
Xylenes, Total	0.375	0.285	0.300	76.0	80.0	72.0-127			5.13	20
1,2,4-Trimethylbenzene	0.125	0.100	0.105	80.0	84.0	70.0-126			4.88	20
1,3,5-Trimethylbenzene	0.125	0.114	0.116	91.2	92.8	73.0-127			1.74	20
(S) Toluene-d8				96.6	98.9	75.0-131				
(S) 4-Bromofluorobenzene				93.9	94.9	67.0-138				
(S) 1,2-Dichloroethane-d4				103	99.3	70.0-130				

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3926251-1 05/17/23 23:17

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	42.9			18.0-148

Method Blank (MB)

(MB) R3926434-1 05/17/23 09:34

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	44.1			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3926251-2 05/17/23 23:29

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	29.1	58.2	50.0-150	
(S) o-Terphenyl			64.7	18.0-148	

L1615481-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1615481-01 05/18/23 02:36 • (MS) R3926251-3 05/18/23 02:49 • (MSD) R3926251-4 05/18/23 03:01

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 %
C10-C28 Diesel Range	49.2	6.23	18.5	27.7	24.9	43.9	1	50.0-150	J6	J3 J6	39.8	20
(S) o-Terphenyl					32.3	50.0		18.0-148				

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3926744-2 05/19/23 00:21

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	U		0.00209	0.00600
Anthracene	U		0.00230	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Benzo(a)pyrene	U		0.00179	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
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
Naphthalene	U		0.00408	0.0200
Pyrene	U		0.00200	0.00600
(S) p-Terphenyl-d14	102			23.0-120
(S) Nitrobenzene-d5	81.3			14.0-149
(S) 2-Fluorobiphenyl	89.8			34.0-125

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3926744-1 05/19/23 00:02

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0684	85.5	50.0-120	
Anthracene	0.0800	0.0596	74.5	50.0-126	
Benzo(a)anthracene	0.0800	0.0592	74.0	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0722	90.3	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0637	79.6	49.0-125	
Benzo(a)pyrene	0.0800	0.0600	75.0	42.0-120	
Chrysene	0.0800	0.0699	87.4	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0651	81.4	47.0-125	
Fluoranthene	0.0800	0.0656	82.0	49.0-129	
Fluorene	0.0800	0.0682	85.3	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0664	83.0	46.0-125	
1-Methylnaphthalene	0.0800	0.0678	84.8	51.0-121	
2-Methylnaphthalene	0.0800	0.0684	85.5	50.0-120	
Naphthalene	0.0800	0.0685	85.6	50.0-120	
Pyrene	0.0800	0.0706	88.3	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R3926744-1 05/19/23 00:02

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
(S) p-Terphenyl-d14			99.9	23.0-120	
(S) Nitrobenzene-d5			93.2	14.0-149	
(S) 2-Fluorobiphenyl			94.6	34.0-125	

L1615558-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1615558-02 05/19/23 03:38 • (MS) R3926744-3 05/19/23 03:57 • (MSD) R3926744-4 05/19/23 04:17

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Acenaphthene	0.0800	ND	0.0481	0.0471	60.1	58.9	1	14.0-127			2.10	27
Anthracene	0.0800	ND	0.0405	0.0360	50.6	45.0	1	10.0-145			11.8	30
Benzo(a)anthracene	0.0800	ND	0.0391	0.0326	48.9	40.8	1	10.0-139			18.1	30
Benzo(b)fluoranthene	0.0800	ND	0.0298	0.0248	37.3	31.0	1	10.0-140			18.3	36
Benzo(k)fluoranthene	0.0800	ND	0.0390	0.0329	48.8	41.1	1	10.0-137			17.0	31
Benzo(a)pyrene	0.0800	ND	0.0389	0.0322	48.6	40.3	1	10.0-141			18.8	31
Chrysene	0.0800	ND	0.0497	0.0439	62.1	54.9	1	10.0-145			12.4	30
Dibenz(a,h)anthracene	0.0800	ND	0.0465	0.0396	58.1	49.5	1	10.0-132			16.0	31
Fluoranthene	0.0800	ND	0.0366	0.0328	45.8	41.0	1	10.0-153			11.0	33
Fluorene	0.0800	ND	0.0456	0.0428	57.0	53.5	1	11.0-130			6.33	29
Indeno(1,2,3-cd)pyrene	0.0800	ND	0.0373	0.0304	46.6	38.0	1	10.0-137			20.4	32
1-Methylnaphthalene	0.0800	ND	0.0539	0.0546	67.4	68.3	1	10.0-142			1.29	28
2-Methylnaphthalene	0.0800	ND	0.0539	0.0548	67.4	68.5	1	10.0-137			1.66	28
Naphthalene	0.0800	ND	0.0630	0.0632	78.8	79.0	1	10.0-135			0.317	27
Pyrene	0.0800	ND	0.0372	0.0332	46.5	41.5	1	10.0-148			11.4	35
(S) p-Terphenyl-d14					72.4	71.8		23.0-120				
(S) Nitrobenzene-d5					94.1	94.5		14.0-149				
(S) 2-Fluorobiphenyl					64.1	66.3		34.0-125				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

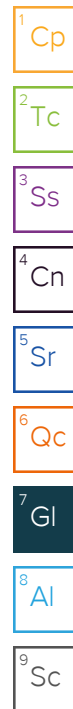
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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

Qualifier	Description
B	The same analyte is found in the associated blank.
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.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
T8	Sample(s) received past/too close to holding time expiration.



ACCREDITATIONS & LOCATIONS

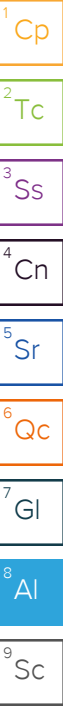
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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.



Company Name/Address: Caerus Oil & Gas 143 Diamond Ave Parachute, CO 81635						Billing Information: Same as left.						Pres Chk
Report to: Blair Rollins						Email To: brollins@caerusoilandgas.com						
Project Description: EL12 12-11D Flowline						City/State Collected:			Please Circle: PT MT CT ET			
Phone: (970) 640-6919			Client Project #			Lab Project #						
Collected by (print): C. Mace			Site/Facility ID #			P.O. #						
Collected by (signature): 			Rush? (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day			Quote #						
Immediately Packed on Ice N ___ Y <u>X</u>						Date Results Needed			No. of Cntrs			
Sample ID		Comp/Grab	Matrix*	Depth	Date	Time						
20230510-CHEVRON EL12 697-(FC-FL 12-11D WH BASE)@5		Grab	SS	5	2023-05-10	1315	3	X	X	X	X	X
20230510-CHEVRON EL12 697-(FC-FL 12-11D SEP BASE)@5		Grab	SS	5	2023-05-10	1345	3	X	X	X	X	X

May 24, 2023

Caerus Oil and Gas

Sample Delivery Group: L1615558
Samples Received: 05/12/2023
Project Number:
Description: EL12 12-11D Flowline

Report To: Brett M. , Jake J. , Blair R.
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.

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

20230510-LMBG-(EL12 BG N)@1 L1615558-01 Solid

Collected by C. Mace Collected date/time 05/10/23 15:45 Received date/time 05/12/23 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2060185	1	05/23/23 14:00	05/23/23 14:00	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2059551	1	05/17/23 07:09	05/17/23 14:32	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2059229	1	05/15/23 10:32	05/15/23 15:48	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2062214	1	05/18/23 13:15	05/18/23 15:08	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2060187	2	05/22/23 18:38	05/23/23 14:49	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2059196	20	05/13/23 04:09	05/15/23 19:04	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2059196	5	05/13/23 04:09	05/15/23 18:28	LD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2061638	1	05/18/23 22:06	05/19/23 03:18	KLZ	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

20230510-LMBG-(EL12 BG E)@1 L1615558-02 Solid

Collected by C. Mace Collected date/time 05/10/23 15:45 Received date/time 05/12/23 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2060185	1	05/23/23 13:57	05/23/23 13:57	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2059551	1	05/17/23 07:09	05/17/23 14:43	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2059229	1	05/15/23 10:32	05/15/23 15:48	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2062214	1	05/18/23 13:15	05/18/23 15:08	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2060187	2	05/22/23 18:38	05/23/23 14:52	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2059196	20	05/13/23 04:09	05/15/23 19:07	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2059196	5	05/13/23 04:09	05/15/23 18:31	LD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2061638	1	05/18/23 22:06	05/19/23 03:38	KLZ	Mt. Juliet, TN

⁶Qc

⁷Gl

⁸Al

⁹Sc

20230510-LMBG-(EL12 BG W)@1 L1615558-03 Solid

Collected by C. Mace Collected date/time 05/10/23 15:45 Received date/time 05/12/23 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2060185	1	05/23/23 13:55	05/23/23 13:55	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2059551	1	05/17/23 07:09	05/17/23 14:48	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2059229	1	05/15/23 10:32	05/15/23 15:48	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2062214	1	05/18/23 13:15	05/18/23 15:08	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2060187	2	05/22/23 18:38	05/23/23 14:54	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2059196	20	05/13/23 04:09	05/15/23 19:11	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2059196	5	05/13/23 04:09	05/15/23 18:35	LD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2061638	1	05/18/23 22:06	05/19/23 04:37	KLZ	Mt. Juliet, TN

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	0.149		1	05/23/2023 14:00	WG2060185

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	05/17/2023 14:32	WG2059551

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.10	T8	1	05/15/2023 15:48	WG2059229

Sample Narrative:

L1615558-01 WG2059229: 7.1 at 23C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	51.8		10.0	1	05/18/2023 15:08	WG2062214

Sample Narrative:

L1615558-01 WG2062214: at 25C

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

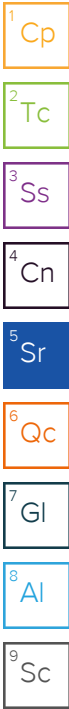
Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.451	B	0.400	2	05/23/2023 14:49	WG2060187

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	8.51		1.00	5	05/15/2023 18:28	WG2059196
Barium	358		10.0	20	05/15/2023 19:04	WG2059196
Cadmium	ND		1.00	5	05/15/2023 18:28	WG2059196
Copper	18.6		5.00	5	05/15/2023 18:28	WG2059196
Lead	15.7		2.00	5	05/15/2023 18:28	WG2059196
Nickel	16.0		2.50	5	05/15/2023 18:28	WG2059196
Selenium	ND		2.50	5	05/15/2023 18:28	WG2059196
Silver	ND		0.500	5	05/15/2023 18:28	WG2059196
Zinc	47.2		25.0	5	05/15/2023 18:28	WG2059196

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.00600	1	05/19/2023 03:18	WG2061638
Anthracene	ND		0.00600	1	05/19/2023 03:18	WG2061638
Benzo(a)anthracene	ND		0.00600	1	05/19/2023 03:18	WG2061638
Benzo(b)fluoranthene	ND		0.00600	1	05/19/2023 03:18	WG2061638
Benzo(k)fluoranthene	ND		0.00600	1	05/19/2023 03:18	WG2061638
Benzo(a)pyrene	ND		0.00600	1	05/19/2023 03:18	WG2061638
Chrysene	ND		0.00600	1	05/19/2023 03:18	WG2061638
Dibenz(a,h)anthracene	ND		0.00600	1	05/19/2023 03:18	WG2061638
Fluoranthene	ND		0.00600	1	05/19/2023 03:18	WG2061638



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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Fluorene	ND		0.00600	1	05/19/2023 03:18	WG2061638
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	05/19/2023 03:18	WG2061638
1-Methylnaphthalene	ND		0.0200	1	05/19/2023 03:18	WG2061638
2-Methylnaphthalene	ND		0.0200	1	05/19/2023 03:18	WG2061638
Naphthalene	ND		0.0200	1	05/19/2023 03:18	WG2061638
Pyrene	ND		0.00600	1	05/19/2023 03:18	WG2061638
(S) p-Terphenyl-d14	78.6		23.0-120		05/19/2023 03:18	WG2061638
(S) Nitrobenzene-d5	90.0		14.0-149		05/19/2023 03:18	WG2061638
(S) 2-Fluorobiphenyl	79.2		34.0-125		05/19/2023 03:18	WG2061638

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.166		1	05/23/2023 13:57	WG2060185

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	05/17/2023 14:43	WG2059551

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	6.96	T8	1	05/15/2023 15:48	WG2059229

Sample Narrative:
L1615558-02 WG2059229: 6.96 at 22.5C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	86.1		10.0	1	05/18/2023 15:08	WG2062214

Sample Narrative:
L1615558-02 WG2062214: at 25C

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.429	B	0.400	2	05/23/2023 14:52	WG2060187

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	4.72		1.00	5	05/15/2023 18:31	WG2059196
Barium	284		10.0	20	05/15/2023 19:07	WG2059196
Cadmium	ND		1.00	5	05/15/2023 18:31	WG2059196
Copper	14.5		5.00	5	05/15/2023 18:31	WG2059196
Lead	13.3		2.00	5	05/15/2023 18:31	WG2059196
Nickel	14.4		2.50	5	05/15/2023 18:31	WG2059196
Selenium	ND		2.50	5	05/15/2023 18:31	WG2059196
Silver	ND		0.500	5	05/15/2023 18:31	WG2059196
Zinc	44.5		25.0	5	05/15/2023 18:31	WG2059196

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.00600	1	05/19/2023 03:38	WG2061638
Anthracene	ND		0.00600	1	05/19/2023 03:38	WG2061638
Benzo(a)anthracene	ND		0.00600	1	05/19/2023 03:38	WG2061638
Benzo(b)fluoranthene	ND		0.00600	1	05/19/2023 03:38	WG2061638
Benzo(k)fluoranthene	ND		0.00600	1	05/19/2023 03:38	WG2061638
Benzo(a)pyrene	ND		0.00600	1	05/19/2023 03:38	WG2061638
Chrysene	ND		0.00600	1	05/19/2023 03:38	WG2061638
Dibenz(a,h)anthracene	ND		0.00600	1	05/19/2023 03:38	WG2061638
Fluoranthene	ND		0.00600	1	05/19/2023 03:38	WG2061638

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Fluorene	ND		0.00600	1	05/19/2023 03:38	WG2061638
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	05/19/2023 03:38	WG2061638
1-Methylnaphthalene	ND		0.0200	1	05/19/2023 03:38	WG2061638
2-Methylnaphthalene	ND		0.0200	1	05/19/2023 03:38	WG2061638
Naphthalene	ND		0.0200	1	05/19/2023 03:38	WG2061638
Pyrene	ND		0.00600	1	05/19/2023 03:38	WG2061638
(S) p-Terphenyl-d14	84.8		23.0-120		05/19/2023 03:38	WG2061638
(S) Nitrobenzene-d5	79.7		14.0-149		05/19/2023 03:38	WG2061638
(S) 2-Fluorobiphenyl	68.9		34.0-125		05/19/2023 03:38	WG2061638

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.174		1	05/23/2023 13:55	WG2060185

1
Cp

2
Tc

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	05/17/2023 14:48	WG2059551

3
Ss

4
Cn

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	6.73	T8	1	05/15/2023 15:48	WG2059229

5
Sr

6
Qc

Sample Narrative:

L1615558-03 WG2059229: 6.73 at 22.5C

7
Gl

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	55.8		10.0	1	05/18/2023 15:08	WG2062214

8
Al

9
Sc

Sample Narrative:

L1615558-03 WG2062214: at 25C

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.469	B	0.400	2	05/23/2023 14:54	WG2060187

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	3.86		1.00	5	05/15/2023 18:35	WG2059196
Barium	204		10.0	20	05/15/2023 19:11	WG2059196
Cadmium	ND		1.00	5	05/15/2023 18:35	WG2059196
Copper	9.73		5.00	5	05/15/2023 18:35	WG2059196
Lead	11.1		2.00	5	05/15/2023 18:35	WG2059196
Nickel	10.6		2.50	5	05/15/2023 18:35	WG2059196
Selenium	ND		2.50	5	05/15/2023 18:35	WG2059196
Silver	ND		0.500	5	05/15/2023 18:35	WG2059196
Zinc	35.8		25.0	5	05/15/2023 18:35	WG2059196

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.00600	1	05/19/2023 04:37	WG2061638
Anthracene	ND		0.00600	1	05/19/2023 04:37	WG2061638
Benzo(a)anthracene	ND		0.00600	1	05/19/2023 04:37	WG2061638
Benzo(b)fluoranthene	ND		0.00600	1	05/19/2023 04:37	WG2061638
Benzo(k)fluoranthene	ND		0.00600	1	05/19/2023 04:37	WG2061638
Benzo(a)pyrene	ND		0.00600	1	05/19/2023 04:37	WG2061638
Chrysene	ND		0.00600	1	05/19/2023 04:37	WG2061638
Dibenz(a,h)anthracene	ND		0.00600	1	05/19/2023 04:37	WG2061638
Fluoranthene	ND		0.00600	1	05/19/2023 04:37	WG2061638

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Fluorene	ND		0.00600	1	05/19/2023 04:37	WG2061638
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	05/19/2023 04:37	WG2061638
1-Methylnaphthalene	ND		0.0200	1	05/19/2023 04:37	WG2061638
2-Methylnaphthalene	ND		0.0200	1	05/19/2023 04:37	WG2061638
Naphthalene	ND		0.0200	1	05/19/2023 04:37	WG2061638
Pyrene	ND		0.00600	1	05/19/2023 04:37	WG2061638
(S) p-Terphenyl-d14	87.8		23.0-120		05/19/2023 04:37	WG2061638
(S) Nitrobenzene-d5	86.2		14.0-149		05/19/2023 04:37	WG2061638
(S) 2-Fluorobiphenyl	84.0		34.0-125		05/19/2023 04:37	WG2061638

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3926091-1 05/17/23 14:10

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

L1615558-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1615558-01 05/17/23 14:32 • (DUP) R3926091-3 05/17/23 14:38

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

L1615773-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1615773-05 05/17/23 16:31 • (DUP) R3926091-8 05/17/23 16:46

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

Laboratory Control Sample (LCS)

(LCS) R3926091-2 05/17/23 14:17

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	10.5	105	80.0-120	

L1615773-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1615773-03 05/17/23 15:30 • (MS) R3926091-4 05/17/23 16:02 • (MSD) R3926091-5 05/17/23 16:10

	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	ND	16.9	16.3	84.5	81.6	1	75.0-125			3.54	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1615483-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1615483-08 05/15/23 15:48 • (DUP) R3925250-2 05/15/23 15:48

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	pH	su		%		%
pH	7.04	6.94	1	1.43	J3	1

Sample Narrative:

OS: 7.04 at 22.8C

DUP: 6.94 at 23C

L1615558-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1615558-01 05/15/23 15:48 • (DUP) R3925250-3 05/15/23 15:48

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	pH	su		%		%
pH	7.10	7.13	1	0.422		1

Sample Narrative:

OS: 7.1 at 23C

DUP: 7.13 at 22.8C

Laboratory Control Sample (LCS)

(LCS) R3925250-1 05/15/23 15:48

	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 at 22.6C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3926505-1 05/18/23 15:08

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

Sample Narrative:

BLANK: at 25C

L1615558-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1615558-02 05/18/23 15:08 • (DUP) R3926505-3 05/18/23 15:08

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	86.1	85.6	1	0.582		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1615777-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1615777-02 05/18/23 15:08 • (DUP) R3926505-4 05/18/23 15:08

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	698	691	1	1.01		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3926505-2 05/18/23 15:08

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	1120	1200	107	85.0-115	

Sample Narrative:

LCS: at 25C



Method Blank (MB)

(MB) R3928480-1 05/23/23 14:36

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hot Water Sol. Boron	0.0811	⬇	0.0167	0.200

¹Cp

²Tc

³Ss

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

(LCS) R3928480-2 05/23/23 14:38 • (LCSD) R3928480-3 05/23/23 14:41

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	1.19	1.18	119	118	80.0-120			0.768	20

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3925112-1 05/15/23 17:32

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00
Barium	U		0.152	2.50
Cadmium	U		0.0855	1.00
Copper	U		0.133	5.00
Lead	U		0.0990	2.00
Nickel	U		0.197	2.50
Selenium	U		0.180	2.50
Silver	U		0.0865	0.500
Zinc	U		0.740	25.0

Laboratory Control Sample (LCS)

(LCS) R3925112-2 05/15/23 17:35

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	101	101	80.0-120	
Barium	100	101	101	80.0-120	
Cadmium	100	107	107	80.0-120	
Copper	100	95.0	95.0	80.0-120	
Lead	100	104	104	80.0-120	
Nickel	100	104	104	80.0-120	
Selenium	100	106	106	80.0-120	
Silver	20.0	20.7	104	80.0-120	
Zinc	100	99.5	99.5	80.0-120	

L1615471-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1615471-01 05/15/23 17:39 • (MS) R3925112-5 05/15/23 17:48 • (MSD) R3925112-6 05/15/23 17:52

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	3.86	97.5	95.3	93.6	91.5	5	75.0-125			2.24	20
Barium	100	1510	1230	780	0.000	0.000	5	75.0-125	E V	E J3 V	44.9	20
Cadmium	100	ND	104	106	104	105	5	75.0-125			1.43	20
Copper	100	11.0	101	96.0	90.2	85.0	5	75.0-125			5.32	20
Lead	100	19.1	113	110	93.9	90.6	5	75.0-125			2.96	20
Nickel	100	10.2	107	103	97.1	92.5	5	75.0-125			4.42	20
Selenium	100	ND	104	104	103	103	5	75.0-125			0.258	20
Silver	20.0	ND	20.4	20.2	102	101	5	75.0-125			0.698	20
Zinc	100	63.0	513	135	450	72.0	5	75.0-125	J5	J3 J6	117	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3926744-2 05/19/23 00:21

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	U		0.00209	0.00600
Anthracene	U		0.00230	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Benzo(a)pyrene	U		0.00179	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
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
Naphthalene	U		0.00408	0.0200
Pyrene	U		0.00200	0.00600
(S) p-Terphenyl-d14	102			23.0-120
(S) Nitrobenzene-d5	81.3			14.0-149
(S) 2-Fluorobiphenyl	89.8			34.0-125

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3926744-1 05/19/23 00:02

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0684	85.5	50.0-120	
Anthracene	0.0800	0.0596	74.5	50.0-126	
Benzo(a)anthracene	0.0800	0.0592	74.0	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0722	90.3	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0637	79.6	49.0-125	
Benzo(a)pyrene	0.0800	0.0600	75.0	42.0-120	
Chrysene	0.0800	0.0699	87.4	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0651	81.4	47.0-125	
Fluoranthene	0.0800	0.0656	82.0	49.0-129	
Fluorene	0.0800	0.0682	85.3	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0664	83.0	46.0-125	
1-Methylnaphthalene	0.0800	0.0678	84.8	51.0-121	
2-Methylnaphthalene	0.0800	0.0684	85.5	50.0-120	
Naphthalene	0.0800	0.0685	85.6	50.0-120	
Pyrene	0.0800	0.0706	88.3	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R3926744-1 05/19/23 00:02

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
(S) p-Terphenyl-d14			99.9	23.0-120	
(S) Nitrobenzene-d5			93.2	14.0-149	
(S) 2-Fluorobiphenyl			94.6	34.0-125	

L1615558-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1615558-02 05/19/23 03:38 • (MS) R3926744-3 05/19/23 03:57 • (MSD) R3926744-4 05/19/23 04:17

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Acenaphthene	0.0800	ND	0.0481	0.0471	60.1	58.9	1	14.0-127			2.10	27
Anthracene	0.0800	ND	0.0405	0.0360	50.6	45.0	1	10.0-145			11.8	30
Benzo(a)anthracene	0.0800	ND	0.0391	0.0326	48.9	40.8	1	10.0-139			18.1	30
Benzo(b)fluoranthene	0.0800	ND	0.0298	0.0248	37.3	31.0	1	10.0-140			18.3	36
Benzo(k)fluoranthene	0.0800	ND	0.0390	0.0329	48.8	41.1	1	10.0-137			17.0	31
Benzo(a)pyrene	0.0800	ND	0.0389	0.0322	48.6	40.3	1	10.0-141			18.8	31
Chrysene	0.0800	ND	0.0497	0.0439	62.1	54.9	1	10.0-145			12.4	30
Dibenz(a,h)anthracene	0.0800	ND	0.0465	0.0396	58.1	49.5	1	10.0-132			16.0	31
Fluoranthene	0.0800	ND	0.0366	0.0328	45.8	41.0	1	10.0-153			11.0	33
Fluorene	0.0800	ND	0.0456	0.0428	57.0	53.5	1	11.0-130			6.33	29
Indeno(1,2,3-cd)pyrene	0.0800	ND	0.0373	0.0304	46.6	38.0	1	10.0-137			20.4	32
1-Methylnaphthalene	0.0800	ND	0.0539	0.0546	67.4	68.3	1	10.0-142			1.29	28
2-Methylnaphthalene	0.0800	ND	0.0539	0.0548	67.4	68.5	1	10.0-137			1.66	28
Naphthalene	0.0800	ND	0.0630	0.0632	78.8	79.0	1	10.0-135			0.317	27
Pyrene	0.0800	ND	0.0372	0.0332	46.5	41.5	1	10.0-148			11.4	35
(S) p-Terphenyl-d14					72.4	71.8		23.0-120				
(S) Nitrobenzene-d5					94.1	94.5		14.0-149				
(S) 2-Fluorobiphenyl					64.1	66.3		34.0-125				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

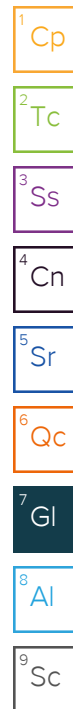
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
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.
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.



[illegible]

Caerus Oil and Gas

Sample Delivery Group: L1637974
Samples Received: 07/21/2023
Project Number:
Description: EL12 12-11D Flowline

Report To: Blair Rollins
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:



Chris Ward
Project Manager

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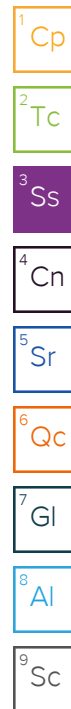
¹ Cp
² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc

SAMPLE SUMMARY

20230720-CHEVRON EL12 697-(FCWH1211DNW)@ L1637974-01
Solid

Collected by C. Mace Collected date/time 07/20/23 09:30 Received date/time 07/21/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2102794	1	07/28/23 17:53	07/28/23 17:53	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2101368	1	07/25/23 21:25	07/26/23 11:49	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2101874	1	07/26/23 10:08	07/27/23 08:38	MCC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2101724	1	07/26/23 09:20	07/26/23 12:45	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2102851	1	07/27/23 11:47	07/28/23 15:48	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2104344	5	07/31/23 07:59	08/01/23 11:50	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2101425	1	07/25/23 08:39	07/25/23 23:46	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2101261	1	07/25/23 08:39	07/25/23 18:29	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2101703	1	07/26/23 20:48	07/27/23 12:13	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2101711	1	07/27/23 15:15	07/28/23 04:44	AMM	Mt. Juliet, TN



20230720-CHEVRON EL12 697-(FCWH1211DEW)@ L1637974-02
Solid

Collected by C. Mace Collected date/time 07/20/23 09:40 Received date/time 07/21/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2102794	1	07/28/23 17:55	07/28/23 17:55	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2101368	1	07/25/23 21:25	07/26/23 11:54	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2101874	1	07/26/23 10:08	07/27/23 08:38	MCC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2101724	1	07/26/23 09:20	07/26/23 12:45	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2102851	1	07/27/23 11:47	07/28/23 15:50	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2104344	5	07/31/23 07:59	08/01/23 13:25	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2101425	1	07/25/23 08:39	07/26/23 00:09	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2101261	1	07/25/23 08:39	07/25/23 18:48	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2101703	1	07/26/23 20:48	07/27/23 12:26	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2101711	1	07/27/23 15:15	07/28/23 07:20	AMM	Mt. Juliet, TN

20230720-CHEVRON EL12 697-(FCWH1211DSW)@ L1637974-03
Solid

Collected by C. Mace Collected date/time 07/20/23 09:50 Received date/time 07/21/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2102794	1	07/28/23 17:58	07/28/23 17:58	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2101368	1	07/25/23 21:25	07/26/23 12:09	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2101874	1	07/26/23 10:08	07/27/23 08:38	MCC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2101724	1	07/26/23 09:20	07/26/23 12:45	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2102851	1	07/27/23 11:47	07/28/23 15:53	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2104344	5	07/31/23 07:59	08/01/23 13:28	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2101425	1	07/25/23 08:39	07/26/23 00:32	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2101261	1	07/25/23 08:39	07/25/23 19:07	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2101703	1	07/26/23 20:48	07/27/23 12:40	KAP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2101703	5	07/26/23 20:48	07/27/23 15:19	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2101711	1	07/27/23 15:15	07/28/23 07:38	AMM	Mt. Juliet, TN

20230720-CHEVRON EL12 697-(FCWH1211DWW)@ L1637974-04
Solid

Collected by C. Mace Collected date/time 07/20/23 10:00 Received date/time 07/21/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2102794	1	07/28/23 18:01	07/28/23 18:01	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2101368	1	07/25/23 21:25	07/26/23 12:15	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2101874	1	07/26/23 10:08	07/27/23 08:38	MCC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2101724	1	07/26/23 09:20	07/26/23 12:45	NTG	Mt. Juliet, TN

SAMPLE SUMMARY

20230720-CHEVRON EL12 697-(FCWH1211DWW)@ L1637974-04
Solid

Collected by C. Mace Collected date/time 07/20/23 10:00 Received date/time 07/21/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2102851	1	07/27/23 11:47	07/28/23 15:55	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2104344	5	07/31/23 07:59	08/01/23 13:31	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2101425	1	07/25/23 08:39	07/26/23 00:55	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2101261	1	07/25/23 08:39	07/25/23 19:26	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2101703	10	07/26/23 20:48	07/27/23 13:19	KAP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2101703	100	07/26/23 20:48	07/27/23 15:32	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2101711	1	07/27/23 15:15	07/28/23 06:28	AMM	Mt. Juliet, TN

20230720-CHEVRON EL12 697-(FCWH1211DBA)@ L1637974-05
Solid

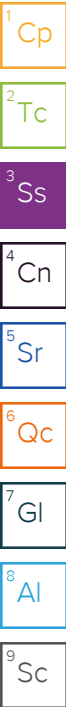
Collected by C. Mace Collected date/time 07/20/23 10:10 Received date/time 07/21/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2102794	1	07/28/23 18:04	07/28/23 18:04	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2101368	1	07/25/23 21:25	07/26/23 12:20	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2101874	1	07/26/23 10:08	07/27/23 08:38	MCC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2101724	1	07/26/23 09:20	07/26/23 12:45	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2102851	1	07/27/23 11:47	07/28/23 15:58	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2104344	5	07/31/23 07:59	08/01/23 13:35	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2101425	1	07/25/23 08:39	07/26/23 01:19	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2101261	1	07/25/23 08:39	07/25/23 19:44	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2101703	20	07/26/23 20:48	07/27/23 13:32	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2101711	1	07/27/23 15:15	07/28/23 08:13	AMM	Mt. Juliet, TN

20230720-CHEVRON EL12 697-(FCWH1211DSP)@ L1637974-06
Solid

Collected by C. Mace Collected date/time 07/20/23 11:30 Received date/time 07/21/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2102794	1	07/28/23 18:07	07/28/23 18:07	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2101368	1	07/25/23 21:25	07/26/23 12:25	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2101874	1	07/26/23 10:08	07/27/23 08:38	MCC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2101724	1	07/26/23 09:20	07/26/23 12:45	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2102851	1	07/27/23 11:47	07/28/23 16:06	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2104344	5	07/31/23 07:59	08/01/23 13:38	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2101946	1	07/25/23 08:39	07/26/23 13:13	KSD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2101261	1	07/25/23 08:39	07/25/23 20:03	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2101703	5	07/26/23 20:48	07/27/23 13:06	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2101711	1	07/27/23 15:15	07/28/23 07:55	AMM	Mt. Juliet, TN



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	2.38		1	07/28/2023 17:53	WG2102794

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.619	J	0.255	1.00	1	07/26/2023 11:49	WG2101368

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.24	T8	1	07/27/2023 08:38	WG2101874

Sample Narrative:

L1637974-01 WG2101874: 8.24 at 23.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	371		10.0	1	07/26/2023 12:45	WG2101724

Sample Narrative:

L1637974-01 WG2101724: at 25C

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	0.169	J	0.0167	0.200	1	07/28/2023 15:48	WG2102851

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.70		0.100	1.00	5	08/01/2023 11:50	WG2104344
Barium	246		0.152	2.50	5	08/01/2023 11:50	WG2104344
Cadmium	0.291	J	0.0855	1.00	5	08/01/2023 11:50	WG2104344
Copper	20.5		0.132	5.00	5	08/01/2023 11:50	WG2104344
Lead	13.2		0.0990	2.00	5	08/01/2023 11:50	WG2104344
Nickel	15.7		0.197	2.50	5	08/01/2023 11:50	WG2104344
Selenium	0.383	J	0.180	2.50	5	08/01/2023 11:50	WG2104344
Silver	U		0.0865	0.500	5	08/01/2023 11:50	WG2104344
Zinc	49.4		0.740	25.0	5	08/01/2023 11:50	WG2104344

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	0.0445	B J	0.0217	0.100	1	07/25/2023 23:46	WG2101425
(S) a,a,a-Trifluorotoluene(FID)	89.1			77.0-120		07/25/2023 23:46	WG2101425

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	07/25/2023 18:29	WG2101261
Toluene	0.00158	J	0.00130	0.00500	1	07/25/2023 18:29	WG2101261
Ethylbenzene	U		0.000737	0.00250	1	07/25/2023 18:29	WG2101261
Xylenes, Total	U		0.000880	0.00650	1	07/25/2023 18:29	WG2101261
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/25/2023 18:29	WG2101261
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/25/2023 18:29	WG2101261
(S) Toluene-d8	113			75.0-131		07/25/2023 18:29	WG2101261
(S) 4-Bromofluorobenzene	98.7			67.0-138		07/25/2023 18:29	WG2101261
(S) 1,2-Dichloroethane-d4	74.0			70.0-130		07/25/2023 18:29	WG2101261

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	30.6		1.61	4.00	1	07/27/2023 12:13	WG2101703
C28-C36 Motor Oil Range	62.7		0.274	4.00	1	07/27/2023 12:13	WG2101703
(S) o-Terphenyl	29.3			18.0-148		07/27/2023 12:13	WG2101703

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
Acenaphthene	U		0.00209	0.00600	1	07/28/2023 04:44	WG2101711
Anthracene	U		0.00230	0.00600	1	07/28/2023 04:44	WG2101711
Benzo(a)anthracene	U		0.00173	0.00600	1	07/28/2023 04:44	WG2101711
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/28/2023 04:44	WG2101711
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/28/2023 04:44	WG2101711
Benzo(a)pyrene	U		0.00179	0.00600	1	07/28/2023 04:44	WG2101711
Chrysene	U		0.00232	0.00600	1	07/28/2023 04:44	WG2101711
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/28/2023 04:44	WG2101711
Fluoranthene	U		0.00227	0.00600	1	07/28/2023 04:44	WG2101711
Fluorene	U		0.00205	0.00600	1	07/28/2023 04:44	WG2101711
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/28/2023 04:44	WG2101711
1-Methylnaphthalene	0.00624	J	0.00449	0.0200	1	07/28/2023 04:44	WG2101711
2-Methylnaphthalene	0.0129	J	0.00427	0.0200	1	07/28/2023 04:44	WG2101711
Naphthalene	0.00457	J	0.00408	0.0200	1	07/28/2023 04:44	WG2101711
Pyrene	0.00302	J	0.00200	0.00600	1	07/28/2023 04:44	WG2101711
(S) p-Terphenyl-d14	85.1			23.0-120		07/28/2023 04:44	WG2101711
(S) Nitrobenzene-d5	101			14.0-149		07/28/2023 04:44	WG2101711
(S) 2-Fluorobiphenyl	71.3			34.0-125		07/28/2023 04:44	WG2101711

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	1.84		1	07/28/2023 17:55	WG2102794

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.395	J	0.255	1.00	1	07/26/2023 11:54	WG2101368

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.05	T8	1	07/27/2023 08:38	WG2101874

Sample Narrative:

L1637974-02 WG2101874: 8.05 at 24.1C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	453		10.0	1	07/26/2023 12:45	WG2101724

Sample Narrative:

L1637974-02 WG2101724: at 25C

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	0.274		0.0167	0.200	1	07/28/2023 15:50	WG2102851

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	7.75		0.100	1.00	5	08/01/2023 13:25	WG2104344
Barium	303		0.152	2.50	5	08/01/2023 13:25	WG2104344
Cadmium	0.503	J	0.0855	1.00	5	08/01/2023 13:25	WG2104344
Copper	182		0.132	5.00	5	08/01/2023 13:25	WG2104344
Lead	15.8		0.0990	2.00	5	08/01/2023 13:25	WG2104344
Nickel	14.2		0.197	2.50	5	08/01/2023 13:25	WG2104344
Selenium	0.475	J	0.180	2.50	5	08/01/2023 13:25	WG2104344
Silver	U		0.0865	0.500	5	08/01/2023 13:25	WG2104344
Zinc	55.9		0.740	25.0	5	08/01/2023 13:25	WG2104344

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	0.259		0.0217	0.100	1	07/26/2023 00:09	WG2101425
(S) a,a,a-Trifluorotoluene(FID)	89.4			77.0-120		07/26/2023 00:09	WG2101425

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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	0.00156		0.000467	0.00100	1	07/25/2023 18:48	WG2101261
Toluene	0.00158	U	0.00130	0.00500	1	07/25/2023 18:48	WG2101261
Ethylbenzene	U		0.000737	0.00250	1	07/25/2023 18:48	WG2101261
Xylenes, Total	0.00144	U	0.000880	0.00650	1	07/25/2023 18:48	WG2101261
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/25/2023 18:48	WG2101261
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/25/2023 18:48	WG2101261
(S) Toluene-d8	114			75.0-131		07/25/2023 18:48	WG2101261
(S) 4-Bromofluorobenzene	98.8			67.0-138		07/25/2023 18:48	WG2101261
(S) 1,2-Dichloroethane-d4	77.3			70.0-130		07/25/2023 18:48	WG2101261

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	45.4		1.61	4.00	1	07/27/2023 12:26	WG2101703
C28-C36 Motor Oil Range	65.2		0.274	4.00	1	07/27/2023 12:26	WG2101703
(S) o-Terphenyl	18.9			18.0-148		07/27/2023 12:26	WG2101703

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
Acenaphthene	U		0.00209	0.00600	1	07/28/2023 07:20	WG2101711
Anthracene	U		0.00230	0.00600	1	07/28/2023 07:20	WG2101711
Benzo(a)anthracene	U		0.00173	0.00600	1	07/28/2023 07:20	WG2101711
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/28/2023 07:20	WG2101711
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/28/2023 07:20	WG2101711
Benzo(a)pyrene	U		0.00179	0.00600	1	07/28/2023 07:20	WG2101711
Chrysene	U		0.00232	0.00600	1	07/28/2023 07:20	WG2101711
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/28/2023 07:20	WG2101711
Fluoranthene	U		0.00227	0.00600	1	07/28/2023 07:20	WG2101711
Fluorene	U		0.00205	0.00600	1	07/28/2023 07:20	WG2101711
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/28/2023 07:20	WG2101711
1-Methylnaphthalene	0.00953	U	0.00449	0.0200	1	07/28/2023 07:20	WG2101711
2-Methylnaphthalene	0.0187	U	0.00427	0.0200	1	07/28/2023 07:20	WG2101711
Naphthalene	0.00789	U	0.00408	0.0200	1	07/28/2023 07:20	WG2101711
Pyrene	0.00335	U	0.00200	0.00600	1	07/28/2023 07:20	WG2101711
(S) p-Terphenyl-d14	107			23.0-120		07/28/2023 07:20	WG2101711
(S) Nitrobenzene-d5	88.8			14.0-149		07/28/2023 07:20	WG2101711
(S) 2-Fluorobiphenyl	90.9			34.0-125		07/28/2023 07:20	WG2101711

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.37		1	07/28/2023 17:58	WG2102794

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	07/26/2023 12:09	WG2101368

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.96	T8	1	07/27/2023 08:38	WG2101874

Sample Narrative:
L1637974-03 WG2101874: 7.96 at 24.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	312	J3	10.0	1	07/26/2023 12:45	WG2101724

Sample Narrative:
L1637974-03 WG2101724: at 25C

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	0.232		0.0167	0.200	1	07/28/2023 15:53	WG2102851

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	7.01		0.100	1.00	5	08/01/2023 13:28	WG2104344
Barium	369		0.152	2.50	5	08/01/2023 13:28	WG2104344
Cadmium	0.418	J	0.0855	1.00	5	08/01/2023 13:28	WG2104344
Copper	22.6		0.132	5.00	5	08/01/2023 13:28	WG2104344
Lead	16.9		0.0990	2.00	5	08/01/2023 13:28	WG2104344
Nickel	18.0		0.197	2.50	5	08/01/2023 13:28	WG2104344
Selenium	0.321	J	0.180	2.50	5	08/01/2023 13:28	WG2104344
Silver	U		0.0865	0.500	5	08/01/2023 13:28	WG2104344
Zinc	65.3		0.740	25.0	5	08/01/2023 13:28	WG2104344

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	0.265		0.0217	0.100	1	07/26/2023 00:32	WG2101425
(S) a,a,a-Trifluorotoluene(FID)	90.7			77.0-120		07/26/2023 00:32	WG2101425

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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	0.000675	U	0.000467	0.00100	1	07/25/2023 19:07	WG2101261
Toluene	U		0.00130	0.00500	1	07/25/2023 19:07	WG2101261
Ethylbenzene	U		0.000737	0.00250	1	07/25/2023 19:07	WG2101261
Xylenes, Total	0.00925		0.000880	0.00650	1	07/25/2023 19:07	WG2101261
1,2,4-Trimethylbenzene	0.00577		0.00158	0.00500	1	07/25/2023 19:07	WG2101261
1,3,5-Trimethylbenzene	0.0191		0.00200	0.00500	1	07/25/2023 19:07	WG2101261
(S) Toluene-d8	112			75.0-131		07/25/2023 19:07	WG2101261
(S) 4-Bromofluorobenzene	99.2			67.0-138		07/25/2023 19:07	WG2101261
(S) 1,2-Dichloroethane-d4	77.2			70.0-130		07/25/2023 19:07	WG2101261

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	121		1.61	4.00	1	07/27/2023 12:40	WG2101703
C28-C36 Motor Oil Range	173		1.37	20.0	5	07/27/2023 15:19	WG2101703
(S) o-Terphenyl	19.1			18.0-148		07/27/2023 12:40	WG2101703
(S) o-Terphenyl	26.5			18.0-148		07/27/2023 15:19	WG2101703

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
Acenaphthene	U		0.00209	0.00600	1	07/28/2023 07:38	WG2101711
Anthracene	U		0.00230	0.00600	1	07/28/2023 07:38	WG2101711
Benzo(a)anthracene	0.00305	U	0.00173	0.00600	1	07/28/2023 07:38	WG2101711
Benzo(b)fluoranthene	0.00414	U	0.00153	0.00600	1	07/28/2023 07:38	WG2101711
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/28/2023 07:38	WG2101711
Benzo(a)pyrene	0.00268	U	0.00179	0.00600	1	07/28/2023 07:38	WG2101711
Chrysene	0.00429	U	0.00232	0.00600	1	07/28/2023 07:38	WG2101711
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/28/2023 07:38	WG2101711
Fluoranthene	0.00521	U	0.00227	0.00600	1	07/28/2023 07:38	WG2101711
Fluorene	0.00391	U	0.00205	0.00600	1	07/28/2023 07:38	WG2101711
Indeno(1,2,3-cd)pyrene	0.00226	U	0.00181	0.00600	1	07/28/2023 07:38	WG2101711
1-Methylnaphthalene	0.0153	U	0.00449	0.0200	1	07/28/2023 07:38	WG2101711
2-Methylnaphthalene	0.0349		0.00427	0.0200	1	07/28/2023 07:38	WG2101711
Naphthalene	0.0121	U	0.00408	0.0200	1	07/28/2023 07:38	WG2101711
Pyrene	0.00817		0.00200	0.00600	1	07/28/2023 07:38	WG2101711
(S) p-Terphenyl-d14	55.3			23.0-120		07/28/2023 07:38	WG2101711
(S) Nitrobenzene-d5	111			14.0-149		07/28/2023 07:38	WG2101711
(S) 2-Fluorobiphenyl	47.4			34.0-125		07/28/2023 07:38	WG2101711

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.55		1	07/28/2023 18:01	WG2102794

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	07/26/2023 12:15	WG2101368

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.85	T8	1	07/27/2023 08:38	WG2101874

Sample Narrative:

L1637974-04 WG2101874: 7.85 at 24.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	331		10.0	1	07/26/2023 12:45	WG2101724

Sample Narrative:

L1637974-04 WG2101724: at 25C

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	0.457		0.0167	0.200	1	07/28/2023 15:55	WG2102851

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	7.43		0.100	1.00	5	08/01/2023 13:31	WG2104344
Barium	333		0.152	2.50	5	08/01/2023 13:31	WG2104344
Cadmium	0.419	J	0.0855	1.00	5	08/01/2023 13:31	WG2104344
Copper	21.2		0.132	5.00	5	08/01/2023 13:31	WG2104344
Lead	23.2		0.0990	2.00	5	08/01/2023 13:31	WG2104344
Nickel	16.0		0.197	2.50	5	08/01/2023 13:31	WG2104344
Selenium	0.264	J	0.180	2.50	5	08/01/2023 13:31	WG2104344
Silver	U		0.0865	0.500	5	08/01/2023 13:31	WG2104344
Zinc	54.5		0.740	25.0	5	08/01/2023 13:31	WG2104344

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	2.98		0.0217	0.100	1	07/26/2023 00:55	WG2101425
(S) a,a,a-Trifluorotoluene(FID)	94.8			77.0-120		07/26/2023 00:55	WG2101425

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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	07/25/2023 19:26	WG2101261
Toluene	U		0.00130	0.00500	1	07/25/2023 19:26	WG2101261
Ethylbenzene	U		0.000737	0.00250	1	07/25/2023 19:26	WG2101261
Xylenes, Total	U		0.000880	0.00650	1	07/25/2023 19:26	WG2101261
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/25/2023 19:26	WG2101261
1,3,5-Trimethylbenzene	0.00616		0.00200	0.00500	1	07/25/2023 19:26	WG2101261
(S) Toluene-d8	115			75.0-131		07/25/2023 19:26	WG2101261
(S) 4-Bromofluorobenzene	109			67.0-138		07/25/2023 19:26	WG2101261
(S) 1,2-Dichloroethane-d4	78.4			70.0-130		07/25/2023 19:26	WG2101261

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	2630		16.1	40.0	10	07/27/2023 13:19	WG2101703
C28-C36 Motor Oil Range	4730		27.4	400	100	07/27/2023 15:32	WG2101703
(S) o-Terphenyl	0.000	J7		18.0-148		07/27/2023 15:32	WG2101703
(S) o-Terphenyl	129			18.0-148		07/27/2023 13:19	WG2101703

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
Acenaphthene	U		0.00209	0.00600	1	07/28/2023 06:28	WG2101711
Anthracene	U		0.00230	0.00600	1	07/28/2023 06:28	WG2101711
Benzo(a)anthracene	0.0121		0.00173	0.00600	1	07/28/2023 06:28	WG2101711
Benzo(b)fluoranthene	0.0204		0.00153	0.00600	1	07/28/2023 06:28	WG2101711
Benzo(k)fluoranthene	0.0169		0.00215	0.00600	1	07/28/2023 06:28	WG2101711
Benzo(a)pyrene	0.0157		0.00179	0.00600	1	07/28/2023 06:28	WG2101711
Chrysene	0.0110		0.00232	0.00600	1	07/28/2023 06:28	WG2101711
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/28/2023 06:28	WG2101711
Fluoranthene	0.0201		0.00227	0.00600	1	07/28/2023 06:28	WG2101711
Fluorene	0.0114		0.00205	0.00600	1	07/28/2023 06:28	WG2101711
Indeno(1,2,3-cd)pyrene	0.00863		0.00181	0.00600	1	07/28/2023 06:28	WG2101711
1-Methylnaphthalene	0.0219		0.00449	0.0200	1	07/28/2023 06:28	WG2101711
2-Methylnaphthalene	0.0367		0.00427	0.0200	1	07/28/2023 06:28	WG2101711
Naphthalene	0.0170	J	0.00408	0.0200	1	07/28/2023 06:28	WG2101711
Pyrene	0.0243		0.00200	0.00600	1	07/28/2023 06:28	WG2101711
(S) p-Terphenyl-d14	107			23.0-120		07/28/2023 06:28	WG2101711
(S) Nitrobenzene-d5	207	J1		14.0-149		07/28/2023 06:28	WG2101711
(S) 2-Fluorobiphenyl	103			34.0-125		07/28/2023 06:28	WG2101711

Sample Narrative:

L1637974-04 WG2101711: Surrogate failure due to matrix interference

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.925		1	07/28/2023 18:04	WG2102794

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	07/26/2023 12:20	WG2101368

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.95	T8	1	07/27/2023 08:38	WG2101874

Sample Narrative:

L1637974-05 WG2101874: 7.95 at 24C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	507		10.0	1	07/26/2023 12:45	WG2101724

Sample Narrative:

L1637974-05 WG2101724: at 25C

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	0.283		0.0167	0.200	1	07/28/2023 15:58	WG2102851

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.41		0.100	1.00	5	08/01/2023 13:35	WG2104344
Barium	313		0.152	2.50	5	08/01/2023 13:35	WG2104344
Cadmium	0.295	J	0.0855	1.00	5	08/01/2023 13:35	WG2104344
Copper	20.8		0.132	5.00	5	08/01/2023 13:35	WG2104344
Lead	18.0		0.0990	2.00	5	08/01/2023 13:35	WG2104344
Nickel	21.0		0.197	2.50	5	08/01/2023 13:35	WG2104344
Selenium	0.365	J	0.180	2.50	5	08/01/2023 13:35	WG2104344
Silver	U		0.0865	0.500	5	08/01/2023 13:35	WG2104344
Zinc	42.4		0.740	25.0	5	08/01/2023 13:35	WG2104344

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	2.58		0.0217	0.100	1	07/26/2023 01:19	WG2101425
(S) a,a,a-Trifluorotoluene(FID)	91.8			77.0-120		07/26/2023 01:19	WG2101425

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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	07/25/2023 19:44	WG2101261
Toluene	U		0.00130	0.00500	1	07/25/2023 19:44	WG2101261
Ethylbenzene	U		0.000737	0.00250	1	07/25/2023 19:44	WG2101261
Xylenes, Total	0.00183	J	0.000880	0.00650	1	07/25/2023 19:44	WG2101261
1,2,4-Trimethylbenzene	0.00171	J	0.00158	0.00500	1	07/25/2023 19:44	WG2101261
1,3,5-Trimethylbenzene	0.00532		0.00200	0.00500	1	07/25/2023 19:44	WG2101261
(S) Toluene-d8	113			75.0-131		07/25/2023 19:44	WG2101261
(S) 4-Bromofluorobenzene	103			67.0-138		07/25/2023 19:44	WG2101261
(S) 1,2-Dichloroethane-d4	74.4			70.0-130		07/25/2023 19:44	WG2101261

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	422		32.2	80.0	20	07/27/2023 13:32	WG2101703
C28-C36 Motor Oil Range	675		5.48	80.0	20	07/27/2023 13:32	WG2101703
(S) o-Terphenyl	0.000	J		18.0-148		07/27/2023 13:32	WG2101703

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
Acenaphthene	U		0.00209	0.00600	1	07/28/2023 08:13	WG2101711
Anthracene	U		0.00230	0.00600	1	07/28/2023 08:13	WG2101711
Benzo(a)anthracene	0.0128		0.00173	0.00600	1	07/28/2023 08:13	WG2101711
Benzo(b)fluoranthene	0.0157		0.00153	0.00600	1	07/28/2023 08:13	WG2101711
Benzo(k)fluoranthene	0.00609		0.00215	0.00600	1	07/28/2023 08:13	WG2101711
Benzo(a)pyrene	0.0106		0.00179	0.00600	1	07/28/2023 08:13	WG2101711
Chrysene	0.0142		0.00232	0.00600	1	07/28/2023 08:13	WG2101711
Dibenz(a,h)anthracene	0.00277	J	0.00172	0.00600	1	07/28/2023 08:13	WG2101711
Fluoranthene	0.0239		0.00227	0.00600	1	07/28/2023 08:13	WG2101711
Fluorene	0.0284		0.00205	0.00600	1	07/28/2023 08:13	WG2101711
Indeno(1,2,3-cd)pyrene	0.00841		0.00181	0.00600	1	07/28/2023 08:13	WG2101711
1-Methylnaphthalene	0.0625		0.00449	0.0200	1	07/28/2023 08:13	WG2101711
2-Methylnaphthalene	0.114		0.00427	0.0200	1	07/28/2023 08:13	WG2101711
Naphthalene	0.0659		0.00408	0.0200	1	07/28/2023 08:13	WG2101711
Pyrene	0.0607		0.00200	0.00600	1	07/28/2023 08:13	WG2101711
(S) p-Terphenyl-d14	73.4			23.0-120		07/28/2023 08:13	WG2101711
(S) Nitrobenzene-d5	138			14.0-149		07/28/2023 08:13	WG2101711
(S) 2-Fluorobiphenyl	72.0			34.0-125		07/28/2023 08:13	WG2101711

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.02		1	07/28/2023 18:07	WG2102794

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

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	07/26/2023 12:25	WG2101368

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.90	T8	1	07/27/2023 08:38	WG2101874

Sample Narrative:
L1637974-06 WG2101874: 7.9 at 23.9C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	487		10.0	1	07/26/2023 12:45	WG2101724

Sample Narrative:
L1637974-06 WG2101724: at 25C

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	0.253		0.0167	0.200	1	07/28/2023 16:06	WG2102851

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	7.31		0.100	1.00	5	08/01/2023 13:38	WG2104344
Barium	321		0.152	2.50	5	08/01/2023 13:38	WG2104344
Cadmium	0.396	J	0.0855	1.00	5	08/01/2023 13:38	WG2104344
Copper	25.3		0.132	5.00	5	08/01/2023 13:38	WG2104344
Lead	24.0		0.0990	2.00	5	08/01/2023 13:38	WG2104344
Nickel	15.6		0.197	2.50	5	08/01/2023 13:38	WG2104344
Selenium	0.364	J	0.180	2.50	5	08/01/2023 13:38	WG2104344
Silver	U		0.0865	0.500	5	08/01/2023 13:38	WG2104344
Zinc	55.0		0.740	25.0	5	08/01/2023 13:38	WG2104344

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	0.235	B	0.0217	0.100	1	07/26/2023 13:13	WG2101946
(S) a,a,a-Trifluorotoluene(FID)	87.9			77.0-120		07/26/2023 13:13	WG2101946

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	07/25/2023 20:03	WG2101261
Toluene	U		0.00130	0.00500	1	07/25/2023 20:03	WG2101261
Ethylbenzene	U		0.000737	0.00250	1	07/25/2023 20:03	WG2101261
Xylenes, Total	U		0.000880	0.00650	1	07/25/2023 20:03	WG2101261
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/25/2023 20:03	WG2101261
1,3,5-Trimethylbenzene	0.00215	U	0.00200	0.00500	1	07/25/2023 20:03	WG2101261
(S) Toluene-d8	113			75.0-131		07/25/2023 20:03	WG2101261
(S) 4-Bromofluorobenzene	98.8			67.0-138		07/25/2023 20:03	WG2101261
(S) 1,2-Dichloroethane-d4	76.3			70.0-130		07/25/2023 20:03	WG2101261

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	487		8.05	20.0	5	07/27/2023 13:06	WG2101703
C28-C36 Motor Oil Range	371		1.37	20.0	5	07/27/2023 13:06	WG2101703
(S) o-Terphenyl	21.2			18.0-148		07/27/2023 13:06	WG2101703

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
Acenaphthene	U		0.00209	0.00600	1	07/28/2023 07:55	WG2101711
Anthracene	U		0.00230	0.00600	1	07/28/2023 07:55	WG2101711
Benzo(a)anthracene	0.00185	U	0.00173	0.00600	1	07/28/2023 07:55	WG2101711
Benzo(b)fluoranthene	0.00313	U	0.00153	0.00600	1	07/28/2023 07:55	WG2101711
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/28/2023 07:55	WG2101711
Benzo(a)pyrene	0.00190	U	0.00179	0.00600	1	07/28/2023 07:55	WG2101711
Chrysene	0.00240	U	0.00232	0.00600	1	07/28/2023 07:55	WG2101711
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/28/2023 07:55	WG2101711
Fluoranthene	0.00292	U	0.00227	0.00600	1	07/28/2023 07:55	WG2101711
Fluorene	0.00530	U	0.00205	0.00600	1	07/28/2023 07:55	WG2101711
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/28/2023 07:55	WG2101711
1-Methylnaphthalene	0.0243		0.00449	0.0200	1	07/28/2023 07:55	WG2101711
2-Methylnaphthalene	0.0457		0.00427	0.0200	1	07/28/2023 07:55	WG2101711
Naphthalene	0.0231		0.00408	0.0200	1	07/28/2023 07:55	WG2101711
Pyrene	0.00755		0.00200	0.00600	1	07/28/2023 07:55	WG2101711
(S) p-Terphenyl-d14	51.5			23.0-120		07/28/2023 07:55	WG2101711
(S) Nitrobenzene-d5	103			14.0-149		07/28/2023 07:55	WG2101711
(S) 2-Fluorobiphenyl	38.5			34.0-125		07/28/2023 07:55	WG2101711

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3952975-1 07/26/23 11:05

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

L1637974-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1637974-06 07/26/23 12:25 • (DUP) R3952975-7 07/26/23 12:30

	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

L1637996-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1637996-02 07/26/23 13:12 • (DUP) R3952975-8 07/26/23 13:17

	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) R3952975-2 07/26/23 11:12

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	11.1	111	80.0-120	

L1637305-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1637305-01 07/26/23 11:23 • (MS) R3952975-3 07/26/23 11:28 • (MSD) R3952975-4 07/26/23 11:33

	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	22.1	20.6	110	103	1	75.0-125			6.90	20

L1637305-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1637305-01 07/26/23 11:23 • (MS) R3952975-5 07/26/23 11:38

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	651	U	734	113	50	75.0-125	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1636838-27 Original Sample (OS) • Duplicate (DUP)

(OS) L1636838-27 07/27/23 08:38 • (DUP) R3953287-2 07/27/23 08:38

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	8.26	8.27	1	0.121		1

Sample Narrative:

OS: 8.26 at 24.5C

DUP: 8.27 at 24.4C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1637974-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1637974-03 07/27/23 08:38 • (DUP) R3953287-3 07/27/23 08:38

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	pH	su		%		%
pH	7.96	7.98	1	0.251		1

Sample Narrative:

OS: 7.96 at 24.3C

DUP: 7.98 at 24.3C

Laboratory Control Sample (LCS)

(LCS) R3953287-1 07/27/23 08:38

	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 at 23.8C

Method Blank (MB)

(MB) R3952901-1 07/26/23 12:45

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

Sample Narrative:
BLANK: at 25C

L1637974-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1637974-03 07/26/23 12:45 • (DUP) R3952901-3 07/26/23 12:45

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	312	382	1	20.2	J3	20

Sample Narrative:
OS: at 25C
DUP: at 25C

L1637996-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1637996-06 07/26/23 12:45 • (DUP) R3952901-4 07/26/23 12:45

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	166	167	1	0.361		20

Sample Narrative:
OS: at 25C
DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3952901-2 07/26/23 12:45

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	732	732	100	85.0-115	

Sample Narrative:
LCS: at 25C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3954161-1 07/28/23 14:58

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) R3954161-2 07/28/23 15:00 • (LCSD) R3954161-3 07/28/23 15:03

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	1.01	1.01	101	101	80.0-120			0.0979	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3955300-1 08/01/23 11:43

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00
Barium	U		0.152	2.50
Cadmium	U		0.0855	1.00
Copper	U		0.133	5.00
Lead	U		0.0990	2.00
Nickel	U		0.197	2.50
Selenium	U		0.180	2.50
Silver	U		0.0865	0.500
Zinc	U		0.740	25.0

Laboratory Control Sample (LCS)

(LCS) R3955300-2 08/01/23 11:46

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	91.8	91.8	80.0-120	
Barium	100	88.2	88.2	80.0-120	
Cadmium	100	90.8	90.8	80.0-120	
Copper	100	83.5	83.5	80.0-120	
Lead	100	87.1	87.1	80.0-120	
Nickel	100	89.1	89.1	80.0-120	
Selenium	100	92.8	92.8	80.0-120	
Silver	20.0	17.6	88.1	80.0-120	
Zinc	100	87.4	87.4	80.0-120	

L1637974-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1637974-01 08/01/23 11:50 • (MS) R3955300-5 08/01/23 12:00 • (MSD) R3955300-6 08/01/23 12:03

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	5.70	92.2	102	86.5	96.4	5	75.0-125			10.1	20
Barium	100	246	348	409	102	163	5	75.0-125		J5	16.1	20
Cadmium	100	0.291	88.5	101	88.2	100	5	75.0-125			12.8	20
Copper	100	20.5	96.1	115	75.6	94.1	5	75.0-125			17.5	20
Lead	100	13.2	93.2	112	80.0	98.5	5	75.0-125			18.1	20
Nickel	100	15.7	95.9	113	80.2	97.2	5	75.0-125			16.3	20
Selenium	100	0.383	93.2	99.1	92.8	98.7	5	75.0-125			6.12	20
Silver	20.0	U	17.3	19.3	86.4	96.6	5	75.0-125			11.2	20
Zinc	100	49.4	120	141	70.5	92.1	5	75.0-125	J6		16.5	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3953885-2 07/25/23 22:22

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0241	⬇	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	97.1			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3953885-1 07/25/23 21:24

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.39	79.8	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			101	77.0-120	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3953574-2 07/26/23 10:34

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0242	⬇	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	96.9			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3953574-1 07/26/23 09:48

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.37	97.6	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			100	77.0-120	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3954113-2 07/25/23 13:55

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	114			75.0-131
(S) 4-Bromofluorobenzene	97.9			67.0-138
(S) 1,2-Dichloroethane-d4	76.5			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3954113-1 07/25/23 11:55

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.108	86.4	70.0-123	
Toluene	0.125	0.126	101	75.0-121	
Ethylbenzene	0.125	0.116	92.8	74.0-126	
Xylenes, Total	0.375	0.353	94.1	72.0-127	
1,2,4-Trimethylbenzene	0.125	0.0913	73.0	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.0955	76.4	73.0-127	
(S) Toluene-d8			107	75.0-131	
(S) 4-Bromofluorobenzene			98.3	67.0-138	
(S) 1,2-Dichloroethane-d4			86.4	70.0-130	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3953590-1 07/27/23 08:29

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	0.287	⬇	0.274	4.00
(S) o-Terphenyl	61.9			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3953590-2 07/27/23 08:42

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	28.5	57.0	50.0-150	
(S) o-Terphenyl			54.1	18.0-148	

L1637695-11 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1637695-11 07/27/23 09:21 • (MS) R3953590-3 07/27/23 09:35 • (MSD) R3953590-4 07/27/23 09:48

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	48.6	U	34.1	30.5	70.2	62.0	1	50.0-150			11.1	20
(S) o-Terphenyl					56.0	48.5		18.0-148				

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3954015-2 07/28/23 01:51

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	U		0.00209	0.00600
Anthracene	U		0.00230	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Benzo(a)pyrene	U		0.00179	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
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
Naphthalene	U		0.00408	0.0200
Pyrene	U		0.00200	0.00600
(S) p-Terphenyl-d14	98.1			23.0-120
(S) Nitrobenzene-d5	92.4			14.0-149
(S) 2-Fluorobiphenyl	89.7			34.0-125

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3954015-1 07/28/23 01:33

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0622	77.8	50.0-120	
Anthracene	0.0800	0.0670	83.8	50.0-126	
Benzo(a)anthracene	0.0800	0.0701	87.6	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0670	83.8	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0657	82.1	49.0-125	
Benzo(a)pyrene	0.0800	0.0708	88.5	42.0-120	
Chrysene	0.0800	0.0683	85.4	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0660	82.5	47.0-125	
Fluoranthene	0.0800	0.0666	83.3	49.0-129	
Fluorene	0.0800	0.0671	83.9	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0717	89.6	46.0-125	
1-Methylnaphthalene	0.0800	0.0614	76.8	51.0-121	
2-Methylnaphthalene	0.0800	0.0630	78.8	50.0-120	
Naphthalene	0.0800	0.0607	75.9	50.0-120	
Pyrene	0.0800	0.0699	87.4	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R3954015-1 07/28/23 01:33

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
(S) p-Terphenyl-d14			102	23.0-120	
(S) Nitrobenzene-d5			93.9	14.0-149	
(S) 2-Fluorobiphenyl			94.1	34.0-125	

L1637974-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1637974-01 07/28/23 04:44 • (MS) R3954015-3 07/28/23 05:01 • (MSD) R3954015-4 07/28/23 05:19

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 %
Acenaphthene	0.0772	U	0.0464	0.0387	60.1	50.1	1	14.0-127			18.1	27
Anthracene	0.0772	U	0.0500	0.0405	64.8	52.5	1	10.0-145			21.0	30
Benzo(a)anthracene	0.0772	U	0.0543	0.0441	70.3	57.1	1	10.0-139			20.7	30
Benzo(b)fluoranthene	0.0772	U	0.0476	0.0377	61.7	48.8	1	10.0-140			23.2	36
Benzo(k)fluoranthene	0.0772	U	0.0495	0.0408	64.1	52.8	1	10.0-137			19.3	31
Benzo(a)pyrene	0.0772	U	0.0556	0.0451	72.0	58.4	1	10.0-141			20.9	31
Chrysene	0.0772	U	0.0550	0.0450	71.2	58.3	1	10.0-145			20.0	30
Dibenz(a,h)anthracene	0.0772	U	0.0504	0.0422	65.3	54.7	1	10.0-132			17.7	31
Fluoranthene	0.0772	U	0.0502	0.0399	65.0	51.7	1	10.0-153			22.9	33
Fluorene	0.0772	U	0.0526	0.0421	68.1	54.5	1	11.0-130			22.2	29
Indeno(1,2,3-cd)pyrene	0.0772	U	0.0510	0.0412	66.1	53.4	1	10.0-137			21.3	32
1-Methylnaphthalene	0.0772	0.00624	0.0513	0.0447	58.4	49.8	1	10.0-142			13.8	28
2-Methylnaphthalene	0.0772	0.0129	0.0543	0.0474	53.6	44.7	1	10.0-137			13.6	28
Naphthalene	0.0772	0.00457	0.0526	0.0491	62.2	57.7	1	10.0-135			6.88	27
Pyrene	0.0772	0.00302	0.0516	0.0410	62.9	49.2	1	10.0-148			22.9	35
(S) p-Terphenyl-d14					77.3	55.7		23.0-120				
(S) Nitrobenzene-d5					94.2	102		14.0-149				
(S) 2-Fluorobiphenyl					73.7	56.6		34.0-125				

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.

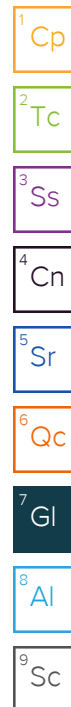
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. 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.
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.
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.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
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.



[illegible]

October 19, 2023

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Caerus Oil and Gas

Sample Delivery Group: L1665084

Samples Received: 10/11/2023

Project Number:

Description: EL12 12-11D Wellhead

Report To: Jake J. / Brett M. / Blair R. / Andy V.
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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SAMPLE SUMMARY

20231010-EL12697-(FCWH1211DWW)@5 L1665084-01 Solid

Collected by
C. Mace

Collected date/time
10/10/23 13:30

Received date/time
10/11/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2152016	1	10/19/23 12:31	10/19/23 12:31	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2148961	1	10/12/23 12:34	10/16/23 03:04	VSS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2151280	1	10/14/23 12:15	10/14/23 14:03	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2150712	1	10/13/23 10:50	10/13/23 14:48	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2152022	1	10/17/23 14:13	10/18/23 17:06	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2149669	5	10/12/23 12:37	10/18/23 15:08	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2150388	1	10/12/23 08:28	10/12/23 23:32	NCD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2150023	1	10/12/23 08:28	10/12/23 15:16	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2152137	1	10/17/23 05:14	10/17/23 14:52	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2152434	1	10/17/23 07:13	10/18/23 02:23	DSH	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

20231010-EL12697-(FCWH1211DSWW)@10 L1665084-02 Solid

Collected by
C. Mace

Collected date/time
10/10/23 13:45

Received date/time
10/11/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2152016	1	10/19/23 12:34	10/19/23 12:34	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2148961	1	10/12/23 12:34	10/16/23 03:20	VSS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2151280	1	10/14/23 12:15	10/14/23 14:03	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2150712	1	10/13/23 10:50	10/13/23 14:48	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2152022	1	10/17/23 14:13	10/18/23 17:31	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2149669	5	10/12/23 12:37	10/18/23 15:11	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2150388	1	10/12/23 08:28	10/12/23 23:56	NCD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2150023	1	10/12/23 08:28	10/12/23 15:34	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2152137	1	10/17/23 05:14	10/17/23 15:05	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2152434	1	10/17/23 07:13	10/18/23 02:42	DSH	Mt. Juliet, TN

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

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	0.692		1	10/19/2023 12:31	WG2152016

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.486	J	0.255	1.00	1	10/16/2023 03:04	WG2148961

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.56	T8	1	10/14/2023 14:03	WG2151280

Sample Narrative:
L1665084-01 WG2151280: 8.56 at 20.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	137		10.0	1	10/13/2023 14:48	WG2150712

Sample Narrative:
L1665084-01 WG2150712: at 25C

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	0.131	J	0.0167	0.200	1	10/18/2023 17:06	WG2152022

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	23.3		0.100	1.00	5	10/18/2023 15:08	WG2149669
Barium	433		0.152	2.50	5	10/18/2023 15:08	WG2149669
Cadmium	0.772	J	0.0855	1.00	5	10/18/2023 15:08	WG2149669
Copper	29.4		0.132	5.00	5	10/18/2023 15:08	WG2149669
Lead	21.1		0.0990	2.00	5	10/18/2023 15:08	WG2149669
Nickel	34.2		0.197	2.50	5	10/18/2023 15:08	WG2149669
Selenium	0.832	J	0.180	2.50	5	10/18/2023 15:08	WG2149669
Silver	0.159	J	0.0865	0.500	5	10/18/2023 15:08	WG2149669
Zinc	92.9		0.740	25.0	5	10/18/2023 15:08	WG2149669

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	0.0372	J	0.0217	0.100	1	10/12/2023 23:32	WG2150388
(S) a,a,a-Trifluorotoluene(FID)	91.3			77.0-120		10/12/2023 23:32	WG2150388

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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	10/12/2023 15:16	WG2150023
Toluene	U		0.00130	0.00500	1	10/12/2023 15:16	WG2150023
Ethylbenzene	U		0.000737	0.00250	1	10/12/2023 15:16	WG2150023
Xylenes, Total	U		0.000880	0.00650	1	10/12/2023 15:16	WG2150023
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/12/2023 15:16	WG2150023
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/12/2023 15:16	WG2150023
(S) Toluene-d8	97.6			75.0-131		10/12/2023 15:16	WG2150023
(S) 4-Bromofluorobenzene	101			67.0-138		10/12/2023 15:16	WG2150023
(S) 1,2-Dichloroethane-d4	92.8			70.0-130		10/12/2023 15:16	WG2150023

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	29.4		1.61	4.00	1	10/17/2023 14:52	WG2152137
C28-C36 Motor Oil Range	140		0.274	4.00	1	10/17/2023 14:52	WG2152137
(S) o-Terphenyl	58.2			18.0-148		10/17/2023 14:52	WG2152137

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
Acenaphthene	U		0.00209	0.00600	1	10/18/2023 02:23	WG2152434
Anthracene	U		0.00230	0.00600	1	10/18/2023 02:23	WG2152434
Benzo(a)anthracene	U		0.00173	0.00600	1	10/18/2023 02:23	WG2152434
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/18/2023 02:23	WG2152434
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/18/2023 02:23	WG2152434
Benzo(a)pyrene	U		0.00179	0.00600	1	10/18/2023 02:23	WG2152434
Chrysene	U		0.00232	0.00600	1	10/18/2023 02:23	WG2152434
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/18/2023 02:23	WG2152434
Fluoranthene	U		0.00227	0.00600	1	10/18/2023 02:23	WG2152434
Fluorene	U		0.00205	0.00600	1	10/18/2023 02:23	WG2152434
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/18/2023 02:23	WG2152434
1-Methylnaphthalene	U		0.00449	0.0200	1	10/18/2023 02:23	WG2152434
2-Methylnaphthalene	U		0.00427	0.0200	1	10/18/2023 02:23	WG2152434
Naphthalene	U		0.00408	0.0200	1	10/18/2023 02:23	WG2152434
Pyrene	U		0.00200	0.00600	1	10/18/2023 02:23	WG2152434
(S) p-Terphenyl-d14	57.6			23.0-120		10/18/2023 02:23	WG2152434
(S) Nitrobenzene-d5	63.1			14.0-149		10/18/2023 02:23	WG2152434
(S) 2-Fluorobiphenyl	56.1			34.0-125		10/18/2023 02:23	WG2152434

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	0.677		1	10/19/2023 12:34	WG2152016

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.392	J	0.255	1.00	1	10/16/2023 03:20	WG2148961

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.29	T8	1	10/14/2023 14:03	WG2151280

Sample Narrative:

L1665084-02 WG2151280: 8.29 at 20.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	125		10.0	1	10/13/2023 14:48	WG2150712

Sample Narrative:

L1665084-02 WG2150712: at 25C

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	0.147	J	0.0167	0.200	1	10/18/2023 17:31	WG2152022

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	18.9		0.100	1.00	5	10/18/2023 15:11	WG2149669
Barium	413		0.152	2.50	5	10/18/2023 15:11	WG2149669
Cadmium	0.672	J	0.0855	1.00	5	10/18/2023 15:11	WG2149669
Copper	27.6		0.132	5.00	5	10/18/2023 15:11	WG2149669
Lead	18.6		0.0990	2.00	5	10/18/2023 15:11	WG2149669
Nickel	30.3		0.197	2.50	5	10/18/2023 15:11	WG2149669
Selenium	0.673	J	0.180	2.50	5	10/18/2023 15:11	WG2149669
Silver	0.124	J	0.0865	0.500	5	10/18/2023 15:11	WG2149669
Zinc	76.1		0.740	25.0	5	10/18/2023 15:11	WG2149669

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	0.0380	J	0.0217	0.100	1	10/12/2023 23:56	WG2150388
(S) a,a,a-Trifluorotoluene(FID)	91.7			77.0-120		10/12/2023 23:56	WG2150388

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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	10/12/2023 15:34	WG2150023
Toluene	U		0.00130	0.00500	1	10/12/2023 15:34	WG2150023
Ethylbenzene	U		0.000737	0.00250	1	10/12/2023 15:34	WG2150023
Xylenes, Total	U		0.000880	0.00650	1	10/12/2023 15:34	WG2150023
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/12/2023 15:34	WG2150023
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/12/2023 15:34	WG2150023
(S) Toluene-d8	96.8			75.0-131		10/12/2023 15:34	WG2150023
(S) 4-Bromofluorobenzene	97.5			67.0-138		10/12/2023 15:34	WG2150023
(S) 1,2-Dichloroethane-d4	91.9			70.0-130		10/12/2023 15:34	WG2150023

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	25.9		1.61	4.00	1	10/17/2023 15:05	WG2152137
C28-C36 Motor Oil Range	109		0.274	4.00	1	10/17/2023 15:05	WG2152137
(S) o-Terphenyl	56.1			18.0-148		10/17/2023 15:05	WG2152137

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
Acenaphthene	U		0.00209	0.00600	1	10/18/2023 02:42	WG2152434
Anthracene	U		0.00230	0.00600	1	10/18/2023 02:42	WG2152434
Benzo(a)anthracene	U		0.00173	0.00600	1	10/18/2023 02:42	WG2152434
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/18/2023 02:42	WG2152434
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/18/2023 02:42	WG2152434
Benzo(a)pyrene	U		0.00179	0.00600	1	10/18/2023 02:42	WG2152434
Chrysene	U		0.00232	0.00600	1	10/18/2023 02:42	WG2152434
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/18/2023 02:42	WG2152434
Fluoranthene	U		0.00227	0.00600	1	10/18/2023 02:42	WG2152434
Fluorene	U		0.00205	0.00600	1	10/18/2023 02:42	WG2152434
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/18/2023 02:42	WG2152434
1-Methylnaphthalene	U		0.00449	0.0200	1	10/18/2023 02:42	WG2152434
2-Methylnaphthalene	0.00708	U	0.00427	0.0200	1	10/18/2023 02:42	WG2152434
Naphthalene	0.00418	U	0.00408	0.0200	1	10/18/2023 02:42	WG2152434
Pyrene	U		0.00200	0.00600	1	10/18/2023 02:42	WG2152434
(S) p-Terphenyl-d14	61.9			23.0-120		10/18/2023 02:42	WG2152434
(S) Nitrobenzene-d5	70.6			14.0-149		10/18/2023 02:42	WG2152434
(S) 2-Fluorobiphenyl	61.2			34.0-125		10/18/2023 02:42	WG2152434

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3986454-1 10/16/23 01:13

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

L1665058-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1665058-01 10/16/23 05:32 • (DUP) R3986454-7 10/16/23 02:33

	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

L1665058-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1665058-05 10/16/23 05:37 • (DUP) R3986454-8 10/16/23 02:59

	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) R3986454-2 10/16/23 01:21

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	9.46	94.6	80.0-120	

L1664626-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1664626-04 10/16/23 01:47 • (MS) R3986454-4 10/16/23 01:57 • (MSD) R3986454-5 10/16/23 02:02

	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	2.06	4.63	4.41	12.9	11.7	1	75.0-125	J6	J6	5.07	20

L1664626-04 Original Sample (OS) • Matrix Spike (MS)

(OS) L1664626-04 10/16/23 01:47 • (MS) R3986454-6 10/16/23 02:18

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	643	2.06	279	43.4	50	75.0-125	J6

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1664592-15 Original Sample (OS) • Duplicate (DUP)

(OS) L1664592-15 10/14/23 14:03 • (DUP) R3986246-3 10/14/23 14:03

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	8.42	8.41	1	0.119		1

Sample Narrative:

OS: 8.42 at 21.4C

DUP: 8.41 at 21.2C

L1665058-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1665058-02 10/14/23 14:03 • (DUP) R3986246-4 10/14/23 14:03

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	pH	su		%		%
pH	8.57	8.54	1	0.351		1

Sample Narrative:

OS: 8.57 at 20.3C

DUP: 8.54 at 20.4C

Laboratory Control Sample (LCS)

(LCS) R3986246-1 10/14/23 14:03

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	9.99	99.9	99.0-101	

Sample Narrative:

LCS: 9.99 at 20.9C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3985988-1 10/13/23 14:48

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

Sample Narrative:

BLANK: at 25C

L1664473-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1664473-05 10/13/23 14:48 • (DUP) R3985988-3 10/13/23 14:48

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	209	207	1	1.01		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1665058-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1665058-05 10/13/23 14:48 • (DUP) R3985988-4 10/13/23 14:48

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	204	203	1	0.492		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3985988-2 10/13/23 14:48

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	732	679	92.8	85.0-115	

Sample Narrative:

LCS: at 25C



Method Blank (MB)

(MB) R3988111-1 10/18/23 16:23

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) R3988111-2 10/18/23 16:25 • (LCSD) R3988111-3 10/18/23 16:28

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	1.10	1.14	110	114	80.0-120			3.61	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3987898-1 10/18/23 14:41

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00
Barium	U		0.152	2.50
Cadmium	U		0.0855	1.00
Copper	U		0.133	5.00
Lead	U		0.0990	2.00
Nickel	U		0.197	2.50
Selenium	U		0.180	2.50
Silver	U		0.0865	0.500
Zinc	U		0.740	25.0

Laboratory Control Sample (LCS)

(LCS) R3987898-2 10/18/23 14:44

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	100	100	80.0-120	
Barium	100	99.6	99.6	80.0-120	
Cadmium	100	101	101	80.0-120	
Copper	100	96.5	96.5	80.0-120	
Lead	100	99.2	99.2	80.0-120	
Nickel	100	101	101	80.0-120	
Selenium	100	102	102	80.0-120	
Silver	20.0	20.0	100	80.0-120	
Zinc	100	99.1	99.1	80.0-120	

L1664711-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1664711-10 10/18/23 14:51 • (MS) R3987898-5 10/18/23 15:01 • (MSD) R3987898-6 10/18/23 15:04

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 %
Arsenic	100	7.75	102	99.1	93.8	91.4	5	75.0-125			2.37	20
Barium	100	62.8	177	148	114	85.5	5	75.0-125			17.6	20
Cadmium	100	0.166	96.2	95.9	96.0	95.7	5	75.0-125			0.343	20
Copper	100	25.5	121	114	96.0	88.0	5	75.0-125			6.75	20
Lead	100	12.1	107	104	94.9	91.6	5	75.0-125			3.20	20
Nickel	100	30.9	128	121	97.3	90.0	5	75.0-125			5.86	20
Selenium	100	0.240	99.9	101	99.7	101	5	75.0-125	E	E	0.954	20
Silver	20.0	U	18.8	19.0	94.0	95.0	5	75.0-125			1.10	20
Zinc	100	57.9	158	135	100	77.3	5	75.0-125			15.7	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3986853-2 10/12/23 22:21

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)	93.5			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3986853-1 10/12/23 21:21

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.76	105	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			102	77.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3987231-3 10/12/23 10:25

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	98.4			75.0-131
(S) 4-Bromofluorobenzene	96.9			67.0-138
(S) 1,2-Dichloroethane-d4	91.8			70.0-130

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

(LCS) R3987231-1 10/12/23 08:51 • (LCSD) R3987231-2 10/12/23 09:09

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	0.130	0.130	104	104	70.0-123			0.000	20
Toluene	0.125	0.117	0.117	93.6	93.6	75.0-121			0.000	20
Ethylbenzene	0.125	0.111	0.107	88.8	85.6	74.0-126			3.67	20
Xylenes, Total	0.375	0.314	0.320	83.7	85.3	72.0-127			1.89	20
1,2,4-Trimethylbenzene	0.125	0.119	0.125	95.2	100	70.0-126			4.92	20
1,3,5-Trimethylbenzene	0.125	0.122	0.130	97.6	104	73.0-127			6.35	20
(S) Toluene-d8				97.2	96.6	75.0-131				
(S) 4-Bromofluorobenzene				97.4	95.1	67.0-138				
(S) 1,2-Dichloroethane-d4				95.4	95.8	70.0-130				

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3987365-1 10/17/23 10:25

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	0.362	J	0.274	4.00
(S) o-Terphenyl	59.6			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3987365-2 10/17/23 10:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	34.8	69.6	50.0-150	
(S) o-Terphenyl			64.4	18.0-148	

L1664734-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1664734-06 10/17/23 11:54 • (MS) R3987365-3 10/17/23 12:07 • (MSD) R3987365-4 10/17/23 12:19

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	49.2	30.8	59.8	49.3	58.9	37.8	1	50.0-150		J6	19.2	20
(S) o-Terphenyl					44.1	40.5		18.0-148				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3987586-2 10/17/23 22:09

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	U		0.00209	0.00600
Anthracene	U		0.00230	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Benzo(a)pyrene	U		0.00179	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
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
Naphthalene	U		0.00408	0.0200
Pyrene	U		0.00200	0.00600
(S) p-Terphenyl-d14	78.8			23.0-120
(S) Nitrobenzene-d5	69.2			14.0-149
(S) 2-Fluorobiphenyl	70.9			34.0-125

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R3987586-1 10/17/23 21:50

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0541	67.6	50.0-120	
Anthracene	0.0800	0.0537	67.1	50.0-126	
Benzo(a)anthracene	0.0800	0.0589	73.6	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0554	69.3	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0545	68.1	49.0-125	
Benzo(a)pyrene	0.0800	0.0554	69.3	42.0-120	
Chrysene	0.0800	0.0594	74.3	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0584	73.0	47.0-125	
Fluoranthene	0.0800	0.0572	71.5	49.0-129	
Fluorene	0.0800	0.0563	70.4	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0592	74.0	46.0-125	
1-Methylnaphthalene	0.0800	0.0579	72.4	51.0-121	
2-Methylnaphthalene	0.0800	0.0594	74.3	50.0-120	
Naphthalene	0.0800	0.0576	72.0	50.0-120	
Pyrene	0.0800	0.0617	77.1	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R3987586-1 10/17/23 21:50

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
(S) p-Terphenyl-d14			75.7	23.0-120	
(S) Nitrobenzene-d5			72.1	14.0-149	
(S) 2-Fluorobiphenyl			70.4	34.0-125	

L1665238-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1665238-05 10/17/23 23:08 • (MS) R3987586-3 10/17/23 23:27 • (MSD) R3987586-4 10/17/23 23:47

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Acenaphthene	0.0788	U	U	U	0.000	0.000	1	14.0-127	J6	J6	0.000	27
Anthracene	0.0788	U	0.241	0.233	306	293	1	10.0-145	J5	J5	3.38	30
Benzo(a)anthracene	0.0788	0.0203	0.0991	0.0892	100	86.6	1	10.0-139			10.5	30
Benzo(b)fluoranthene	0.0788	0.0189	0.0783	0.0791	75.4	75.6	1	10.0-140			1.02	36
Benzo(k)fluoranthene	0.0788	0.00280	0.0517	0.0520	62.1	61.8	1	10.0-137			0.579	31
Benzo(a)pyrene	0.0788	0.0112	0.0779	0.0800	84.6	86.4	1	10.0-141			2.66	31
Chrysene	0.0788	0.0268	0.129	0.109	130	103	1	10.0-145			16.8	30
Dibenz(a,h)anthracene	0.0788	0.00334	0.0500	0.0509	59.2	59.7	1	10.0-132			1.78	31
Fluoranthene	0.0788	0.0646	0.182	0.170	149	132	1	10.0-153			6.82	33
Fluorene	0.0788	U	U	U	0.000	0.000	1	11.0-130	J6	J6	0.000	29
Indeno(1,2,3-cd)pyrene	0.0788	0.00894	0.0683	0.0710	75.3	78.0	1	10.0-137			3.88	32
1-Methylnaphthalene	0.0788	U	U	U	0.000	0.000	1	10.0-142	J6	J6	0.000	28
2-Methylnaphthalene	0.0788	U	U	U	0.000	0.000	1	10.0-137	J6	J6	0.000	28
Naphthalene	0.0788	U	U	U	0.000	0.000	1	10.0-135	J6	J6	0.000	27
Pyrene	0.0788	0.243	0.528	0.510	362	335	1	10.0-148	J5	J5	3.47	35
(S) p-Terphenyl-d14					64.6	61.7		23.0-120				
(S) Nitrobenzene-d5					0.000	0.000		14.0-149	J2	J2		
(S) 2-Fluorobiphenyl					0.000	0.000		34.0-125	J2	J2		

Sample Narrative:
OS: Surrogate failure due to matrix interference

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

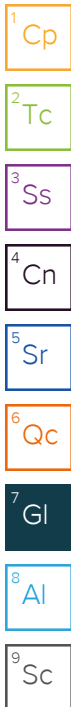
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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
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.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
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.
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.



Company Name/Address: Caerus Oil & Gas 143 Diamond Ave Parachute, CO 81635				Billing Information: Same as left.				Pres Chk	Analysis / Container / Preservative										Chain of Custody Page ____ of ____	
																			 PEOPLE ADVANCING SCIENCE 12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Alt: 800-767-5859 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubs/pas-standard-terms.pdf	
Report to: Blair Rollins				Email To: brollins@caerusoilandgas.com																
Project Description: EL12 12-11D Wellhead				City/State Collected:		Please Circle: PT MT CT ET														
Phone: (970) 640-6919		Client Project #		Lab Project #																
Collected by (print): C. Mace		Site/Facility ID #		P.O. #																
Collected by (signature): 		Rush? (Lab MUST Be Notified) <input type="checkbox"/> Same Day <input checked="" type="checkbox"/> Five Day <input type="checkbox"/> Next Day <input type="checkbox"/> 5 Day (Rad Only) <input type="checkbox"/> Two Day <input type="checkbox"/> 10 Day (Rad Only) <input type="checkbox"/> Three Day		Quote #		Date Results Needed		No. of Cntrs	TABLE 915 GRO/DRO/ORO	TABLE 915 Metals	TABLE 915 VOCs	TABLE 915 pH, SPCON, SAR	TABLE 915 PAHs							
Immediately Packed on Ice N ___ Y <input checked="" type="checkbox"/>																				
Sample ID		Comp/Grab	Matrix*	Depth	Date	Time														
20231010-EL12697-(FCWH1211DWW)@5		Grab	SS	5'	2023-10-10	1330	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					01			
20231010-EL12697-(FCWH1211DSWW)@10		Grab	SS	10'	2023-10-10	1345	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					02			
		Grab	SS																	
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		Grab	SS																	

* 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 # 6525 5572 1490

pH _____ Temp _____
 Flow _____ Other _____

Relinquished by: (Signature)

Relinquished by: (Signature)

Relinquished by: (Signature)

Date: 10/10/23 Time: 1700

Date: 10/10/23 Time: 1800

Date: _____ Time: _____

Received by: (Signature)

Received by: (Signature)

Received for lab by: (Signature)

Trip Blank Received: Yes ☒ No ☐

HCL/ MeOH TBR

Temp: CCA 8°C Bottles Received: 8

Date: 10/11/23 Time: 0845

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

If preservation required by Login: Date/Time

Hold: _____ Condition: NOF / OK

Time estimate: oh

Time spent: oh

- Members
- MS

Matthew Shacklock (responsible)
- CW

Chris Ward

- ☐ Parameter(s) past holding time
- ☐ Temperature not in range
- ☐ Improper container type
- ☐ pH not in range
- ☐ Insufficient sample volume
- ☐ Sample is biphasic
- ☐ Vials received with headspace
- ☒ Broken container
- ☒ Sufficient sample remains
- ☐ If broken container: Insufficient packing material around container
- ☐ If broken container: Insufficient packing material inside cooler
- ☐ If broken container: Improper handling by carrier: _____
- ☐ If broken container: Sample was frozen
- ☐ If broken container: Container lid not intact
- ☐ Client informed by Call
- ☐ Client informed by Email
- ☐ Client informed by Voicemail
- ☐ Date/Time: _____
- ☐ PM initials: _____
- ☐ Client Contact: _____

Comments	
Matthew Shacklock Received 1 8oz broken for 20231010-EL12697-(FCWH1211DWW)@5. 3 still remains. the broken jar was salvaged and placed into login's coldroom.	11 October 2023 3:23 PM
Chris Ward Please proceed with remaining volume	11 October 2023 3:31 PM
Matthew Shacklock Done	11 October 2023 3:57 PM