



VIA ELECTRONIC MAIL –

May 10, 2022

Jake Janicek
EH&S Specialist
Caerus Oil and Gas LLC
143 Diamond Avenue
Parachute, Colorado 81635

**Subject: Report of Work Completed
 YCF 35-33-1 Loadout Line Leak
 YCF 35-33-1
 Yellow Creek Field
 Rio Blanco County, Colorado**

Dear Mr. Janicek:

WSP USA Inc. (WSP), on behalf of Caerus Oil and Gas LLC (Caerus), conducted initial assessment soil sampling activities associated with the December 17, 2021, produced water release discovered at the YCF 35-33-1 (Facility ID: 316660) (Site). This release occurred while the field was being shut in and tanks were being emptied. As a result, residual fluids within the above ground off-load line from the tank to the pump froze, which expanded the pipe threads apart at the “Y” to the strainer and pump. This caused an unknown amount of produced water to be released. A Caerus operator discovered the produced water within the metal containment and confined to the working surface. These initial assessment activities were completed to characterize release area. All initial spill response activities associated with the off-load line leak can be referenced under Colorado Oil and Gas Conservation Commission (COGCC) Spill/Release Point ID 481405. This document serves as a report of work completed (ROWC) under Supplemental Form 27 Document Number (DN) 403044040 for the above-mentioned release. The Site is in the Yellow Creek Field area of operation in Rio Blanco County, Colorado (Figure 1).

SOIL SAMPLING ACTIVITIES – YCF 35-33-1 LOADOUT LINE LEAK

On April 19, 2022, a WSP geologist completed initial assessment and background soil sampling activities associated with the off-load line release at the Site. Empire Locating Services LLC (ELS) of Grand Junction, Colorado was contracted to assist in the collection of soil samples from the pad surface. Using a hand augur and hydro-vacuum truck, four hydro-vacuum potholes were advanced along the southern exterior of the metal containment to profile the spill path. A total of eight point of compliance (POC) soil samples were collected at one foot and two feet below ground surface (bgs) from each pothole. The soil was characterized by visually inspecting the confirmation soil samples and field screening the soil using a photoionization detector (PID) to monitor for the presence or absence of volatile organic vapors. Each sample was collected in clean laboratory prepared containers and submitted to Pace Analytical (Pace) of Mount Juliet, Tennessee for analysis of constituents listed in COGCC Table 915-1.

In addition, four representative background soil samples were collected in each cardinal direction outside of the pad disturbance from non-impacted native soil per COGCC Rule 915.e(2). Background soils samples were collected between 0.5 feet and 1-foot bgs. Each background soil sample was collected in clean laboratory prepared containers and submitted to Pace of Mount Juliet, Tennessee for arsenic, sodium absorption ration (SAR), electrical conductivity (EC), pH, and boron with the exception of the western background sample which was submitted for analysis of all constituents listed in COGCC Table 915-1. The laboratory analytical report for the soils samples is provided in Enclosure A. The release area, confirmation and background soil sample locations are illustrated on the enclosed Figure 2.

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ANALYTICAL RESULTS – YCF 35-33-1 LOADOUT LINE LEAK

Laboratory analytical results of the eight POC pothole soil samples collected on April 19, 2022, indicate exceedances of the COGCC Table 915-1 Protection of Ground Water Soil Screening Level Concentrations (PGSSLC) maximum containment level (M) for arsenic, barium, benzene, toluene, ethylbenzene, total xylenes (BTX) and exceeded the COGCC Table 915-1 PGSSLC risk based (R) for 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene. The R and M exceedances are summarized below:

- Arsenic concentrations were exceeded by all eight POC soil samples collected with concentrations ranging from 2.36 milligrams per kilogram (mg/kg) in soil sample 20220419-YCF 35-33-1(POCC) to 6.13 mg/kg in soil sample 20220419-YCF 35-33-1(POCD);
- Barium concentrations were exceeded by soil samples 20220419-YCF 35-33-1(POCA), 20220419-YCF 35-33-1(POCA)@2', 20220419-YCF 35-33-1(POCB), 20220419-YCF 35-33-1(POCB)@2', 20220419-YCF 35-33-1(POCC)@2', 20220419-YCF 35-33-1(POCD), and 20220419-YCF 35-33-1(POCD)@2' with concentrations ranging from 170 mg/kg to 408 mg/kg;
- Benzene concentrations were exceeded by soil samples 20220419-YCF 35-33-1(POCA), 20220419-YCF 35-33-1(POCA)@2', and 20220419-YCF 35-33-1(POCD) with concentrations ranging from 0.129 mg/kg to 0.931 mg/kg;
- Toluene concentrations were exceeded by soil samples 20220419-YCF 35-33-1(POCA), 20220419-YCF 35-33-1(POCA)@2', and 20220419-YCF 35-33-1(POCD) with concentrations ranging from 8.28 mg/kg to 90.4 mg/kg;
- Ethylbenzene concentrations were exceeded by soil samples 20220419-YCF 35-33-1(POCA), 20220419-YCF 35-33-1(POCA)@2', and 20220419-YCF 35-33-1(POCD) with concentrations ranging from 2.73 mg/kg to 12.9 mg/kg;
- Total Xylenes concentrations were exceeded by soil samples 20220419-YCF 35-33-1(POCA), 20220419-YCF 35-33-1(POCA)@2', and 20220419-YCF 35-33-1(POCD) with concentrations ranging from 72.1 mg/kg to 403 mg/kg;
- 1,2,4-trimethylbenzene concentrations were exceeded by soil samples 20220419-YCF 35-33-1(POCA), 20220419-YCF 35-33-1(POCA)@2', 20220419-YCF 35-33-1(POCB)@2', 20220419-YCF 35-33-1(POCD), and 20220419-YCF 35-33-1(POCD)@2' with concentrations ranging from 0.0294 mg/kg to 73.0 mg/kg;
- 1,3,5-trimethylbenzene concentrations were exceeded by soil samples 20220419-YCF 35-33-1(POCA), 20220419-YCF 35-33-1(POCA)@2', 20220419-YCF 35-33-1(POCB), 20220419-YCF 35-33-1(POCB)@2', 20220419-YCF 35-33-1(POCC), 20220419-YCF 35-33-1(POCC)@2', 20220419-YCF 35-33-1(POCD), and 20220419-YCF 35-33-1(POCD)@2' with concentrations ranging from 0.0219 mg/kg to 57.6 mg/kg;
- 1-methylnaphthalene concentrations were exceeded by soil samples 20220419-YCF 35-33-1(POCA), 20220419-YCF 35-33-1(POCA)@2', 20220419-YCF 35-33-1(POCD), and 20220419-YCF 35-33-1(POCD)@2' with concentrations ranging from 0.210 mg/kg to 2.67 mg/kg;
- 2-methylnaphthalene concentrations were exceeded by soil samples 20220419-YCF 35-33-1(POCA), 20220419-YCF 35-33-1(POCA)@2', 20220419-YCF 35-33-1(POCB), 20220419-YCF 35-33-1(POCD), and 20220419-YCF 35-33-1(POCD)@2' with concentrations ranging from 0.0242 mg/kg to 11.3 mg/kg; and
- Naphthalene concentrations were exceeded by soil samples 20220419-YCF 35-33-1(POCA), 20220419-YCF 35-33-1(POCA)@2', 20220419-YCF 35-33-1(POCC)@2', 20220419-YCF 35-33-1(POCD), and 20220419-YCF 35-33-1(POCD)@2' with concentrations ranging from 0.0217 mg/kg to 4.67 mg/kg.

Laboratory analytical results of soil sample 20220419-YCF 35-33-1(POCD)@2' indicated an exceedance of COGCC Table 915-1 Clean-up Concentration (CC) for SAR with a concentration of 7.76. Three of the eight POC soil samples [20220419-YCF 35-33-1(POCA), 20220419-YCF 35-33-1(POCA)@2', and 20220419-YCF 35-33-



1(POCD)] exceeded the COGCC Table 915-1 Level Concentrations (LC) for total petroleum hydrocarbons (TPH) with concentrations ranging from 1,364.8 mg/kg in 20220419-YCF 35-33-1(POCA)@2' to 5,335.8 mg/kg in 20220419-YCF 35-33-1(POCA). All other analytes were either below the laboratory detection limit or within the Table 915-1 PGSSLCs.

All background soil samples exceeded COGCC Table 915-1 PGSSLC (M) for arsenic with concentrations ranging from 3.33 mg/kg in 20220419-YCF 35-33-1(BGW) to 4.15 mg/kg in 20220419-YCF 35-33-1(BGE). Lastly, background soil sample 20220419-YCF 35-33-1(BGW) exceeded COGCC Table 915-1 PGSSLC (M) and (R) for barium, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene with concentrations of 341 mg/kg, 0.0140 mg/kg, and 0.0148 mg/kg, respectively. All laboratory analytical results are included in Enclosure A and summarized in Table 1.

CONCLUSIONS – YCF 35-33-1 LOADOUT LINE LEAK

Based on the analytical data provided from the initial assessment sampling, there are identified COGCC Table 915-1 exceedances of arsenic, barium, TPH, BTEX, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene, and SAR, associated with the off-load line release. WSP recommends that Caerus continue investigative delineation activities immediately within the release path observed on the pad surface immediately south of the metal secondary containment. WSP proposes that up to five soil borings be advanced, one located within the center of the identified release area and four in each cardinal direction surrounding release area in an attempt to define impacts laterally and vertically to the soil. If lateral impacts are observed beyond the four advanced surrounding the release area, subsequent soil borings will be advanced in each cardinal direction until impacts are defined. These soil borings will be advanced up to five feet past field observed hydrocarbon impacts.

Prior to any additional investigative soil sampling, WSP recommends that Caerus request a reduced analytical suite to include the analysis for all future samples of arsenic, barium, TPH, BTEX, 1,2,4-trimethylbenzene & 1,3,5-trimethylbenzene, 1-methylnaphthalene & 2-methylnaphthalene, naphthalene, and SAR.

Please contact us at (970) 618-4514 or (970) 658-7025 if you have any questions regarding this report or require additional information.

Kind regards,

Dustin Held
Sr. Consultant, Environmental Geologist

Parker Coit, P.G.
Sr. Consultant, Geologist

Encl.

FIGURES



IMAGE COURTESY OF GOOGLE EARTH 2015

LEGEND

- SOIL SAMPLE
- ▲ BACKGROUND SOIL SAMPLE
- RELEASE FOOTPRINT (4/19/2022)

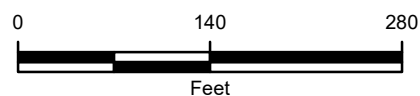


FIGURE 2
SOIL SAMPLE LOCATION MAP
YCF 35-33-1
NWSE SEC 35-T1S-R98W
RIO BLANCO COUNTY, COLORADO
CAERUS OIL AND GAS LLC



TABLE

TABLE 2

SOIL ANALYTICAL RESULTS

YCF 35-33-1

RIO BLANCO, COLORADO

CAERUS OIL AND GAS LLC

PARAMETER	COGCC RESIDENTIAL SOIL SCREENING LEVEL CONCENTRATIONS	COGCC PROTECTION OF GROUNDWATER SOIL SCREENING LEVEL CONCENTRATIONS	UNITS	CONFIRMATION SOIL SAMPLES			
				20220419 - YCF 35-33-1 (POCA)	20220419 - YCF 35-33-1 (POCA) @ 2'	20220419 - YCF 35-33-1 (POCB)	20220419 - YCF 35-33-1 (POCB) @ 2'
Sample Date				4/19/2022	4/19/2022	4/19/2022	4/19/2022
Sample Depth /Range (feet)				1	2	1	2
Sample Type				Confirmation	Confirmation	Confirmation	Confirmation
Arsenic	0.68	0.29 (M)	mg/kg	4.45	4.88	4.32	5.13
Barium	15,000	82 (M)	mg/kg	406	408	170	341
Boron	2	2	mg/l	1.06	0.853	0.244	0.437
Cadmium	71	0.38 (M)	mg/kg	ND	ND	ND	ND
Chromium (VI)	0.3	0.00067 (R)	mg/kg	ND	ND	ND	ND
Copper	3,100	46 (M)	mg/kg	10.7	10.5	12.5	12.9
Lead	400	14 (M)	mg/kg	6.91	8.08	5.58	7.76
Nickel	1,500	26 (R)	mg/kg	9.43	10.9	17.9	11.8
Selenium	390	0.26 (M)	mg/kg	ND	ND	ND	ND
Silver	390	0.8 (R)	mg/kg	ND	ND	ND	ND
Zinc	23,000	370 (R)	mg/kg	27.0	30.5	26.5	26.8
EC	<4	<4	mmhos/cm	0.743	0.673	0.360	0.418
pH	6 - 8.3	6 - 8.3	SU	7.64	8.05	7.56	7.53
SAR	<6	<6	unitless	4.17	2.70	1.58	0.639
TPH-GRO			mg/kg	3,410	984	0.605	6.40
TPH-DRO			mg/kg	1,880	368	7.30	9.15
TPH-ORO			mg/kg	45.8	12.8	7.04	8.67
TPH	500	500	mg/kg	5,335.8	1,364.8	14.9	24.22
Benzene	1.2	0.0026 (M)	mg/kg	0.931	0.129	ND	ND
Toluene	490	0.69 (M)	mg/kg	90.4	8.28	ND	0.0151
Ethylbenzene	5.8	0.78 (M)	mg/kg	12.6	2.73	ND	0.00473
Total Xylenes	58	9.9 (M)	mg/kg	403	72.1	0.0129	0.133
1,2,4-trimethylbenzene	30	0.0081 (R)	mg/kg	73.0	14.3	ND	0.0294
1,3,5-trimethylbenzene	27	0.0087 (R)	mg/kg	49.2	14.0	0.0261	0.0519
Acenaphthene	1,800	5.8 (R)	mg/kg	0.222	0.0397	ND	ND
Anthracene	360	0.55 (R)	mg/kg	ND	ND	ND	ND
Benzo(A)anthracene	1.1	0.011 (R)	mg/kg	ND	ND	ND	ND
Benzo(B)fluoranthene	1.1	0.3 (R)	mg/kg	ND	ND	ND	ND
Benzo(K)fluoranthene	11	2.9 (R)	mg/kg	ND	ND	ND	ND
Benzo(A)pyrene	0.11	0.24 (M)	mg/kg	ND	ND	ND	ND
Chrysene	110	9 (R)	mg/kg	ND	ND	ND	ND
Dibenzo(A,H)anthracene	0.11	0.096 (R)	mg/kg	ND	ND	ND	ND
Fluoranthene	240	8.9 (R)	mg/kg	ND	ND	ND	ND
Fluorene	240	0.54 (R)	mg/kg	0.459	0.0840	ND	ND
Indeno(1,2,3,-cd)pyrene	1.1	0.98 (R)	mg/kg	ND	ND	ND	ND
1-methylnaphthalene	18	0.006 (R)	mg/kg	2.67	0.553	ND	ND
2-methylnaphthalene	24	0.019 (R)	mg/kg	11.3	1.88	0.0242	ND
Naphthalene	2	0.0038 (R)	mg/kg	4.67	0.767	ND	ND
Pyrene	180	1.3 (R)	mg/kg	ND	ND	ND	ND

NOTES:
BOLD - indicates result exceeds the COGCC residential soil screening level concentration
COGCC - Colorado Oil and Gas Conservation Commission
EC- electrical conductivity
mg/l - milligrams per liter
mg/kg - milligrams per kilogram
mmhos/cm - millimhos per centimeter
SAR - sodium adsorption ratio
SU - standard unit
TPH-ORO - total petroleum hydrocarbons- oil range organics
TPH-GRO - total petroleum hydrocarbons-gasoline range organics
TPH-DRO - total petroleum hydrocarbons-diesel range organics
TPH - combination of TPH-GRO, TPH-DRO, and TPH-ORO
NA - analyte not analyzed
ND - analyte not detected
R - risk based
MCL - maxium containment level (M)

TABLE 2

SOIL ANALYTICAL RESULTS

YCF 35-33-1

RIO BLANCO, COLORADO

CAERUS OIL AND GAS LLC

PARAMETER	COGCC RESIDENTIAL SOIL SCREENING LEVEL CONCENTRATIONS	COGCC PROTECTION OF GROUNDWATER SOIL SCREENING LEVEL CONCENTRATIONS	UNITS	CONFIRMATION SOIL SAMPLES			
				20220419 - YCF 35-33-1 (POCC)	20220419 - YCF 35-33-1 (POCC) @ 2'	20220419 - YCF 35-33-1 (POCD)	20220419 - YCF 35-33-1 (POCD) @ 2'
Sample Date				4/19/2022	4/19/2022	4/19/2022	4/19/2022
Sample Depth /Range (feet)				1	2	1	2
Sample Type				Confirmation	Confirmation	Confirmation	Confirmation
Arsenic	0.68	0.29 (M)	mg/kg	2.36	4.45	6.13	4.80
Barium	15,000	82 (M)	mg/kg	81.2	242	389	312
Boron	2	2	mg/l	ND	0.496	0.314	0.482
Cadmium	71	0.38 (M)	mg/kg	ND	ND	ND	ND
Chromium (VI)	0.3	0.00067 (R)	mg/kg	ND	ND	ND	ND
Copper	3,100	46 (M)	mg/kg	6.44	15.5	16.5	16.3
Lead	400	14 (M)	mg/kg	2.89	10.7	9.72	9.88
Nickel	1,500	26 (R)	mg/kg	18.9	14.1	16.6	14.1
Selenium	390	0.26 (M)	mg/kg	ND	ND	ND	ND
Silver	390	0.8 (R)	mg/kg	ND	ND	ND	ND
Zinc	23,000	370 (R)	mg/kg	17.3	34.8	35.4	34.8
EC	<4	<4	mmhos/cm	0.322	0.369	1.840	1.270
pH	6 - 8.3	6 - 8.3	SU	7.76	7.71	7.32	7.80
SAR	<6	<6	unitless	0.743	0.926	3.49	7.76
TPH-GRO			mg/kg	0.169	0.303	3,040	243
TPH-DRO			mg/kg	ND	4.13	2,070	146
TPH-ORO			mg/kg	5.79	5.33	23.1	7.30
TPH	500	500	mg/kg	5.96	9.763	5,133.1	396.30
Benzene	1.2	0.0026 (M)	mg/kg	ND	ND	0.931	ND
Toluene	490	0.69 (M)	mg/kg	ND	ND	62.2	0.0921
Ethylbenzene	5.8	0.78 (M)	mg/kg	ND	ND	12.9	0.0449
Total Xylenes	58	9.9 (M)	mg/kg	0.0321	ND	270	4.28
1,2,4-trimethylbenzene	30	0.0081 (R)	mg/kg	ND	ND	57.9	2.31
1,3,5-trimethylbenzene	27	0.0087 (R)	mg/kg	0.0519	0.0219	57.6	4.38
Acenaphthene	1,800	5.8 (R)	mg/kg	ND	ND	0.167	0.0118
Anthracene	360	0.55 (R)	mg/kg	ND	ND	ND	ND
Benzo(A)anthracene	1.1	0.011 (R)	mg/kg	ND	ND	ND	ND
Benzo(B)fluoranthene	1.1	0.3 (R)	mg/kg	ND	ND	ND	ND
Benzo(K)fluoranthene	11	2.9 (R)	mg/kg	ND	ND	ND	ND
Benzo(A)pyrene	0.11	0.24 (M)	mg/kg	ND	ND	ND	ND
Chrysene	110	9 (R)	mg/kg	ND	ND	ND	ND
Dibenzo(A,H)anthracene	0.11	0.096 (R)	mg/kg	ND	ND	ND	ND
Fluoranthene	240	8.9 (R)	mg/kg	ND	ND	ND	ND
Fluorene	240	0.54 (R)	mg/kg	ND	ND	0.357	0.0263
Indeno(1,2,3,-cd)pyrene	1.1	0.98 (R)	mg/kg	ND	ND	ND	ND
1-methylnaphthalene	18	0.006 (R)	mg/kg	ND	ND	2.04	0.210
2-methylnaphthalene	24	0.019 (R)	mg/kg	ND	ND	8.67	0.587
Naphthalene	2	0.0038 (R)	mg/kg	ND	0.0217	3.09	0.179
Pyrene	180	1.3 (R)	mg/kg	ND	ND	ND	ND

NOTES:

BOLD - indicates result exceeds the COGCC residential soil screening level concentration

COGCC - Colorado Oil and Gas Conservation Commission

EC- electrical conductivity

mg/l - milligrams per liter

mg/kg - milligrams per kilogram

mmhos/cm - millimhos per centimeter

SAR - sodium adsorption ratio

SU - standard unit

TPH-ORO - total petroleum hydrocarbons- oil range organics

TPH-GRO - total petroleum hydrocarbons-gasoline range organics

TPH-DRO - total petroleum hydrocarbons-diesel range organics

TPH - combination of TPH-GRO, TPH-DRO, and TPH-ORO

NA - analyte not analyzed

ND - analyte not detected

R - risk based

MCL - maxium containment level (M)

TABLE 2

SOIL ANALYTICAL RESULTS

YCF 35-33-1

RIO BLANCO, COLORADO

CAERUS OIL AND GAS LLC

PARAMETER	COGCC RESIDENTIAL SOIL SCREENING LEVEL CONCENTRATIONS	COGCC PROTECTION OF GROUNDWATER SOIL SCREENING LEVEL CONCENTRATIONS	UNITS	BACKGROUND SOIL SAMPLES			
				20220419 - YCF 35-33-1 (BGN)	20220419 - YCF 35-33-1 (BGE)	20220419 - YCF 35-33-1 (BGS)	20220419 - YCF 35-33-1 (BGW)
Sample Date				4/19/2022	4/19/2022	4/19/2022	4/19/2022
Sample Depth /Range (feet)				0.5-1	0.5-1	0.5-1	0.5-1
Sample Type				Background	Background	Background	Background
Arsenic	0.68	0.29 (M)	mg/kg	4.13	4.15	3.85	3.33
Barium	15,000	82 (M)	mg/kg	NA	NA	NA	341
Boron	2	2	mg/l	0.236	0.369	0.260	0.249
Cadmium	71	0.38 (M)	mg/kg	NA	NA	NA	ND
Chromium (VI)	0.3	0.00067 (R)	mg/kg	NA	NA	NA	ND
Copper	3,100	46 (M)	mg/kg	NA	NA	NA	10.2
Lead	400	14 (M)	mg/kg	NA	NA	NA	7.72
Nickel	1,500	26 (R)	mg/kg	NA	NA	NA	11.6
Selenium	390	0.26 (M)	mg/kg	NA	NA	NA	ND
Silver	390	0.8 (R)	mg/kg	NA	NA	NA	ND
Zinc	23,000	370 (R)	mg/kg	NA	NA	NA	29.7
EC	<4	<4	mmhos/cm	0.287	0.302	0.278	0.294
pH	6 - 8.3	6 - 8.3	SU	8.06	7.85	7.62	7.67
SAR	<6	<6	unitless	0.226	0.225	0.139	0.0826
TPH-GRO			mg/kg	NA	NA	NA	0.725
TPH-DRO			mg/kg	NA	NA	NA	6.20
TPH-ORO			mg/kg	NA	NA	NA	20.5
TPH	500	500	mg/kg	NA	NA	NA	27.4
Benzene	1.2	0.0026 (M)	mg/kg	NA	NA	NA	0.00128
Toluene	490	0.69 (M)	mg/kg	NA	NA	NA	0.0553
Ethylbenzene	5.8	0.78 (M)	mg/kg	NA	NA	NA	0.0128
Total Xylenes	58	9.9 (M)	mg/kg	NA	NA	NA	0.242
1,2,4-trimethylbenzene	30	0.0081 (R)	mg/kg	NA	NA	NA	0.0140
1,3,5-trimethylbenzene	27	0.0087 (R)	mg/kg	NA	NA	NA	0.0148
Acenaphthene	1,800	5.8 (R)	mg/kg	NA	NA	NA	ND
Anthracene	360	0.55 (R)	mg/kg	NA	NA	NA	ND
Benzo(A)anthracene	1.1	0.011 (R)	mg/kg	NA	NA	NA	ND
Benzo(B)fluoranthene	1.1	0.3 (R)	mg/kg	NA	NA	NA	ND
Benzo(K)fluoranthene	11	2.9 (R)	mg/kg	NA	NA	NA	ND
Benzo(A)pyrene	0.11	0.24 (M)	mg/kg	NA	NA	NA	ND
Chrysene	110	9 (R)	mg/kg	NA	NA	NA	ND
Dibenzo(A,H)anthracene	0.11	0.096 (R)	mg/kg	NA	NA	NA	ND
Fluoranthene	240	8.9 (R)	mg/kg	NA	NA	NA	ND
Fluorene	240	0.54 (R)	mg/kg	NA	NA	NA	ND
Indeno(1,2,3,-cd)pyrene	1.1	0.98 (R)	mg/kg	NA	NA	NA	ND
1-methylnaphthalene	18	0.006 (R)	mg/kg	NA	NA	NA	ND
2-methylnaphthalene	24	0.019 (R)	mg/kg	NA	NA	NA	ND
Naphthalene	2	0.0038 (R)	mg/kg	NA	NA	NA	ND
Pyrene	180	1.3 (R)	mg/kg	NA	NA	NA	ND

NOTES:

BOLD - indicates result exceeds the COGCC residential soil screening level concentration

COGCC - Colorado Oil and Gas Conservation Commission

EC- electrical conductivity

mg/l - milligrams per liter

mg/kg - milligrams per kilogram

mmhos/cm - millimhos per centimeter

SAR - sodium adsorption ratio

SU - standard unit

TPH-ORO - total petroleum hydrocarbons- oil range organics

TPH-GRO - total petroleum hydrocarbons-gasoline range organics

TPH-DRO - total petroleum hydrocarbons-diesel range organics

TPH - combination of TPH-GRO, TPH-DRO, and TPH-ORO

NA - analyte not analyzed

ND - analyte not detected

R - risk based

MCL - maxium containment level (M)

ENCLOSURE A – LABORATORY ANALYTICAL REPORTS

Caerus Oil and Gas

Sample Delivery Group: L1485076
Samples Received: 04/21/2022
Project Number: YCF 35-33-1
Description: YCF 35-33-1
Site: YCF 35-33-1
Report To: Brett Middleton
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:



Chris Ward
Project Manager

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¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Pace Analytical National

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

SAMPLE SUMMARY

20220419-YCF 35-33-1 (POCA) L1485076-01 Solid

Collected by K. Moreland
Collected date/time 04/19/22 10:45
Received date/time 04/21/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1853665	1	04/27/22 22:30	04/27/22 22:30	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1853623	1	04/26/22 00:38	04/27/22 14:25	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1853301	1	04/26/22 08:00	04/26/22 10:00	GI	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1853745	1	04/25/22 07:47	04/25/22 11:00	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1852954	1	04/24/22 08:37	04/27/22 18:44	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1855508	1	04/27/22 21:46	04/28/22 12:54	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1852959	5	04/24/22 08:27	04/25/22 00:15	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1854453	2000	04/23/22 16:30	04/27/22 10:34	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1853405	20	04/23/22 16:30	04/24/22 01:43	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1853697	400	04/23/22 16:30	04/25/22 17:10	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1855177	1	04/27/22 18:26	04/28/22 04:13	JAS	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1855177	20	04/27/22 18:26	04/28/22 10:25	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1854729	1	04/27/22 03:33	04/27/22 11:37	AMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1854729	10	04/27/22 03:33	04/28/22 13:02	AMG	Mt. Juliet, TN



20220419-YCF 35-33-1 (POCA)@2' L1485076-02 Solid

Collected by K. Moreland
Collected date/time 04/19/22 11:30
Received date/time 04/21/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1853665	1	04/27/22 22:33	04/27/22 22:33	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1853623	1	04/26/22 00:38	04/27/22 14:51	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1854386	1	04/26/22 13:00	04/26/22 15:00	GI	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1851216	1	04/25/22 07:51	04/25/22 10:12	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1852954	1	04/24/22 08:37	04/27/22 18:47	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1855508	1	04/27/22 21:46	04/28/22 12:57	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1852959	5	04/24/22 08:27	04/25/22 00:19	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1853645	100	04/23/22 16:30	04/24/22 23:56	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1853405	8	04/23/22 16:30	04/24/22 02:02	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1853697	200	04/23/22 16:30	04/25/22 16:51	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1855177	1	04/27/22 18:26	04/28/22 04:26	JAS	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1855177	5	04/27/22 18:26	04/28/22 10:12	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1854729	1	04/27/22 03:33	04/27/22 11:57	AMG	Mt. Juliet, TN

20220419-YCF 35-33-1 (POCB) L1485076-03 Solid

Collected by K. Moreland
Collected date/time 04/19/22 10:48
Received date/time 04/21/22 09:30

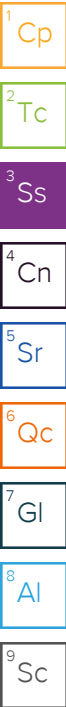
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1853665	1	04/27/22 22:35	04/27/22 22:35	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1853623	1	04/26/22 00:38	04/27/22 14:57	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1853301	1	04/26/22 08:00	04/26/22 10:00	GI	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1853745	1	04/25/22 07:47	04/25/22 11:00	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1852954	1	04/24/22 08:37	04/27/22 18:31	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1855508	1	04/27/22 21:46	04/28/22 13:00	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1852959	5	04/24/22 08:27	04/24/22 23:59	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1853596	1	04/23/22 16:30	04/25/22 06:36	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1853405	1	04/23/22 16:30	04/23/22 21:55	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1855177	1	04/27/22 18:26	04/28/22 04:40	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1854729	1	04/27/22 03:33	04/27/22 12:17	AMG	Mt. Juliet, TN

SAMPLE SUMMARY

20220419-YCF 35-33-1 (POCB)@2' L1485076-04 Solid

Collected by K. Moreland
Collected date/time 04/19/22 11:35
Received date/time 04/21/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1853665	1	04/27/22 22:38	04/27/22 22:38	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1853623	1	04/26/22 00:38	04/27/22 15:07	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1853301	1	04/26/22 08:00	04/26/22 10:00	GI	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1853745	1	04/25/22 07:47	04/25/22 11:00	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1852954	1	04/24/22 08:37	04/27/22 18:50	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1855508	1	04/27/22 21:46	04/28/22 13:02	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1852959	5	04/24/22 08:27	04/25/22 00:22	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1853596	1	04/23/22 16:30	04/25/22 07:07	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1853405	1	04/23/22 16:30	04/23/22 22:14	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1855177	1	04/27/22 18:26	04/28/22 04:53	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1854729	1	04/27/22 03:33	04/27/22 12:37	AMG	Mt. Juliet, TN



20220419-YCF 35-33-1 (POCC) L1485076-05 Solid

Collected by K. Moreland
Collected date/time 04/19/22 11:00
Received date/time 04/21/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1853665	1	04/27/22 22:41	04/27/22 22:41	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1853623	1	04/26/22 00:38	04/27/22 15:12	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1853301	1	04/26/22 08:00	04/26/22 10:00	GI	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1853745	1	04/25/22 07:47	04/25/22 11:00	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1852954	1	04/24/22 08:37	04/27/22 18:59	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1855508	1	04/27/22 21:46	04/28/22 13:05	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1852959	5	04/24/22 08:27	04/25/22 00:32	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1854102	1	04/23/22 16:30	04/26/22 03:19	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1853405	1	04/23/22 16:30	04/23/22 22:33	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1855177	1	04/27/22 18:26	04/28/22 05:07	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1854729	1	04/27/22 03:33	04/27/22 12:56	AMG	Mt. Juliet, TN

20220419-YCF 35-33-1 (POCC)@2' L1485076-06 Solid

Collected by K. Moreland
Collected date/time 04/19/22 11:40
Received date/time 04/21/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1853665	1	04/27/22 22:44	04/27/22 22:44	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1853623	1	04/26/22 00:38	04/27/22 15:28	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1853301	1	04/26/22 08:00	04/26/22 10:00	GI	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1853745	1	04/25/22 07:47	04/25/22 11:00	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1852954	1	04/24/22 08:37	04/27/22 19:01	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1855508	1	04/27/22 21:46	04/28/22 13:08	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1852959	5	04/24/22 08:27	04/25/22 00:35	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1853596	1	04/23/22 16:30	04/25/22 07:53	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1853405	1	04/23/22 16:30	04/23/22 22:52	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1855177	1	04/27/22 18:26	04/28/22 05:20	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1854729	1	04/27/22 03:33	04/27/22 13:16	AMG	Mt. Juliet, TN

20220419-YCF 35-33-1 (POCD) L1485076-07 Solid

Collected by K. Moreland
Collected date/time 04/19/22 11:05
Received date/time 04/21/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1853665	1	04/27/22 22:47	04/27/22 22:47	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1853623	1	04/26/22 00:38	04/27/22 15:33	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1853301	1	04/26/22 08:00	04/26/22 10:00	GI	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1853745	1	04/25/22 07:47	04/25/22 11:00	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1852954	1	04/24/22 08:37	04/27/22 19:04	ZSA	Mt. Juliet, TN

SAMPLE SUMMARY

20220419-YCF 35-33-1 (POCD) L1485076-07 Solid

Collected by
K. Moreland

Collected date/time
04/19/22 11:05

Received date/time
04/21/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1855508	1	04/27/22 21:46	04/28/22 13:11	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1852959	5	04/24/22 08:27	04/25/22 00:38	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1854453	2000	04/23/22 16:30	04/27/22 10:58	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1853405	20	04/23/22 16:30	04/24/22 02:21	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1853697	400	04/23/22 16:30	04/25/22 17:29	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1855177	1	04/27/22 18:26	04/28/22 05:34	JAS	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1855177	20	04/27/22 18:26	04/28/22 10:25	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1854729	1	04/27/22 03:33	04/27/22 13:36	AMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1854729	10	04/27/22 03:33	04/28/22 13:20	AMG	Mt. Juliet, TN

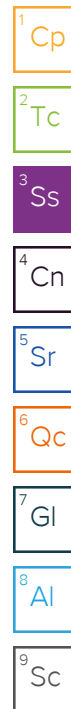
20220419-YCF 35-33-1 (POCD)@2' L1485076-08 Solid

Collected by
K. Moreland

Collected date/time
04/19/22 11:50

Received date/time
04/21/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1853665	1	04/27/22 22:50	04/27/22 22:50	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1853623	1	04/26/22 00:38	04/27/22 15:38	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1853301	1	04/26/22 08:00	04/26/22 10:00	GI	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1853745	1	04/25/22 07:47	04/25/22 11:00	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1852954	1	04/24/22 08:37	04/27/22 19:07	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1855508	1	04/27/22 21:46	04/28/22 13:14	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1852959	5	04/24/22 08:27	04/25/22 00:42	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1853645	100	04/23/22 16:30	04/25/22 00:16	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1853405	8	04/23/22 16:30	04/24/22 02:40	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1853697	8	04/23/22 16:30	04/25/22 16:32	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1855177	1	04/27/22 18:26	04/28/22 05:47	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1854729	1	04/27/22 03:33	04/27/22 13:56	AMG	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.



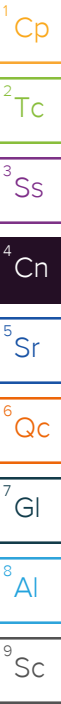
Chris Ward
Project Manager

Report Revision History

Level II Report - Version 1: 04/29/22 10:27

Project Narrative

Rerun to split report and correct sample IDs



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	4.17		1	04/27/2022 22:30	WG1853665

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	04/27/2022 14:25	WG1853623

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.64	T8	1	04/26/2022 10:00	WG1853301

Sample Narrative:

L1485076-01 WG1853301: 7.64 at 20.2C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	743		10.0	1	04/25/2022 11:00	WG1853745

Sample Narrative:

L1485076-01 WG1853745: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	406		0.500	1	04/27/2022 18:44	WG1852954
Cadmium	ND		0.500	1	04/27/2022 18:44	WG1852954
Copper	10.7		2.00	1	04/27/2022 18:44	WG1852954
Lead	6.91		0.500	1	04/27/2022 18:44	WG1852954
Nickel	9.43		2.00	1	04/27/2022 18:44	WG1852954
Selenium	ND		2.00	1	04/27/2022 18:44	WG1852954
Silver	ND		1.00	1	04/27/2022 18:44	WG1852954
Zinc	27.0		5.00	1	04/27/2022 18:44	WG1852954

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	1.06		0.200	1	04/28/2022 12:54	WG1855508

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	4.45		1.00	5	04/25/2022 00:15	WG1852959

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	3410		200	2000	04/27/2022 10:34	WG1854453
(S) a,a,a-Trifluorotoluene(FID)	94.8		77.0-120		04/27/2022 10:34	WG1854453

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.931		0.0200	20	04/24/2022 01:43	WG1853405
Toluene	90.4		2.00	400	04/25/2022 17:10	WG1853697
Ethylbenzene	12.6		0.0500	20	04/24/2022 01:43	WG1853405
Xylenes, Total	403		2.60	400	04/25/2022 17:10	WG1853697
1,2,4-Trimethylbenzene	73.0		2.00	400	04/25/2022 17:10	WG1853697
1,3,5-Trimethylbenzene	49.2	<u>V</u>	0.100	20	04/24/2022 01:43	WG1853405
(S) Toluene-d8	116		75.0-131		04/24/2022 01:43	WG1853405
(S) Toluene-d8	110		75.0-131		04/25/2022 17:10	WG1853697
(S) 4-Bromofluorobenzene	122		67.0-138		04/24/2022 01:43	WG1853405
(S) 4-Bromofluorobenzene	96.8		67.0-138		04/25/2022 17:10	WG1853697
(S) 1,2-Dichloroethane-d4	106		70.0-130		04/24/2022 01:43	WG1853405
(S) 1,2-Dichloroethane-d4	107		70.0-130		04/25/2022 17:10	WG1853697

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	1880		80.0	20	04/28/2022 10:25	WG1855177
C28-C36 Motor Oil Range	45.8		4.00	1	04/28/2022 04:13	WG1855177
(S) o-Terphenyl	0.000	<u>J7</u>	18.0-148		04/28/2022 10:25	WG1855177
(S) o-Terphenyl	88.3		18.0-148		04/28/2022 04:13	WG1855177

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	0.222		0.00600	1	04/27/2022 11:37	WG1854729
Anthracene	ND		0.00600	1	04/27/2022 11:37	WG1854729
Benzo(a)anthracene	ND		0.00600	1	04/27/2022 11:37	WG1854729
Benzo(b)fluoranthene	ND		0.00600	1	04/27/2022 11:37	WG1854729
Benzo(k)fluoranthene	ND		0.00600	1	04/27/2022 11:37	WG1854729
Benzo(a)pyrene	ND		0.00600	1	04/27/2022 11:37	WG1854729
Chrysene	ND		0.00600	1	04/27/2022 11:37	WG1854729
Dibenz(a,h)anthracene	ND		0.00600	1	04/27/2022 11:37	WG1854729
Fluoranthene	ND		0.00600	1	04/27/2022 11:37	WG1854729
Fluorene	0.459		0.00600	1	04/27/2022 11:37	WG1854729
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	04/27/2022 11:37	WG1854729
1-Methylnaphthalene	2.67		0.0200	1	04/27/2022 11:37	WG1854729
2-Methylnaphthalene	11.3		0.200	10	04/28/2022 13:02	WG1854729
Naphthalene	4.67		0.200	10	04/28/2022 13:02	WG1854729
Pyrene	ND		0.00600	1	04/27/2022 11:37	WG1854729
(S) p-Terphenyl-d14	104		23.0-120		04/28/2022 13:02	WG1854729
(S) p-Terphenyl-d14	99.0		23.0-120		04/27/2022 11:37	WG1854729
(S) Nitrobenzene-d5	2350	<u>J1</u>	14.0-149		04/27/2022 11:37	WG1854729
(S) Nitrobenzene-d5	0.000	<u>J2</u>	14.0-149		04/28/2022 13:02	WG1854729
(S) 2-Fluorobiphenyl	71.6		34.0-125		04/28/2022 13:02	WG1854729
(S) 2-Fluorobiphenyl	114		34.0-125		04/27/2022 11:37	WG1854729

Sample Narrative:

L1485076-01 WG1854729: Surrogate failure due to matrix interference

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.70		1	04/27/2022 22:33	WG1853665

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	04/27/2022 14:51	WG1853623

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.05	T8	1	04/26/2022 15:00	WG1854386

Sample Narrative:

L1485076-02 WG1854386: 8.05 at 19.8C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	673		10.0	1	04/25/2022 10:12	WG1851216

Sample Narrative:

L1485076-02 WG1851216: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	408		0.500	1	04/27/2022 18:47	WG1852954
Cadmium	ND		0.500	1	04/27/2022 18:47	WG1852954
Copper	10.5		2.00	1	04/27/2022 18:47	WG1852954
Lead	8.08		0.500	1	04/27/2022 18:47	WG1852954
Nickel	10.9		2.00	1	04/27/2022 18:47	WG1852954
Selenium	ND		2.00	1	04/27/2022 18:47	WG1852954
Silver	ND		1.00	1	04/27/2022 18:47	WG1852954
Zinc	30.5		5.00	1	04/27/2022 18:47	WG1852954

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

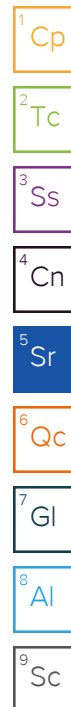
Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.853		0.200	1	04/28/2022 12:57	WG1855508

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	4.88		1.00	5	04/25/2022 00:19	WG1852959

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	984		10.0	100	04/24/2022 23:56	WG1853645
(S) a,a,a-Trifluorotoluene(FID)	95.8		77.0-120		04/24/2022 23:56	WG1853645



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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.129		0.00800	8	04/24/2022 02:02	WG1853405
Toluene	8.28		0.0400	8	04/24/2022 02:02	WG1853405
Ethylbenzene	2.73		0.0200	8	04/24/2022 02:02	WG1853405
Xylenes, Total	72.1		1.30	200	04/25/2022 16:51	WG1853697
1,2,4-Trimethylbenzene	14.3		0.0400	8	04/24/2022 02:02	WG1853405
1,3,5-Trimethylbenzene	14.0		0.0400	8	04/24/2022 02:02	WG1853405
(S) Toluene-d8	115		75.0-131		04/24/2022 02:02	WG1853405
(S) Toluene-d8	110		75.0-131		04/25/2022 16:51	WG1853697
(S) 4-Bromofluorobenzene	124		67.0-138		04/24/2022 02:02	WG1853405
(S) 4-Bromofluorobenzene	97.1		67.0-138		04/25/2022 16:51	WG1853697
(S) 1,2-Dichloroethane-d4	104		70.0-130		04/24/2022 02:02	WG1853405
(S) 1,2-Dichloroethane-d4	107		70.0-130		04/25/2022 16:51	WG1853697

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	368		20.0	5	04/28/2022 10:12	WG1855177
C28-C36 Motor Oil Range	12.8		4.00	1	04/28/2022 04:26	WG1855177
(S) o-Terphenyl	40.8		18.0-148		04/28/2022 10:12	WG1855177
(S) o-Terphenyl	57.6		18.0-148		04/28/2022 04:26	WG1855177

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	0.0397		0.00600	1	04/27/2022 11:57	WG1854729
Anthracene	ND		0.00600	1	04/27/2022 11:57	WG1854729
Benzo(a)anthracene	ND		0.00600	1	04/27/2022 11:57	WG1854729
Benzo(b)fluoranthene	ND		0.00600	1	04/27/2022 11:57	WG1854729
Benzo(k)fluoranthene	ND		0.00600	1	04/27/2022 11:57	WG1854729
Benzo(a)pyrene	ND		0.00600	1	04/27/2022 11:57	WG1854729
Chrysene	ND		0.00600	1	04/27/2022 11:57	WG1854729
Dibenz(a,h)anthracene	ND		0.00600	1	04/27/2022 11:57	WG1854729
Fluoranthene	ND		0.00600	1	04/27/2022 11:57	WG1854729
Fluorene	0.0840		0.00600	1	04/27/2022 11:57	WG1854729
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	04/27/2022 11:57	WG1854729
1-Methylnaphthalene	0.553		0.0200	1	04/27/2022 11:57	WG1854729
2-Methylnaphthalene	1.88		0.0200	1	04/27/2022 11:57	WG1854729
Naphthalene	0.767		0.0200	1	04/27/2022 11:57	WG1854729
Pyrene	ND		0.00600	1	04/27/2022 11:57	WG1854729
(S) p-Terphenyl-d14	100		23.0-120		04/27/2022 11:57	WG1854729
(S) Nitrobenzene-d5	423	J1	14.0-149		04/27/2022 11:57	WG1854729
(S) 2-Fluorobiphenyl	94.4		34.0-125		04/27/2022 11:57	WG1854729

Sample Narrative:

L1485076-02 WG1854729: Surrogate failure due to matrix interference

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.58		1	04/27/2022 22:35	WG1853665

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	04/27/2022 14:57	WG1853623

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.56	T8	1	04/26/2022 10:00	WG1853301

Sample Narrative:

L1485076-03 WG1853301: 7.56 at 20.2C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	360		10.0	1	04/25/2022 11:00	WG1853745

Sample Narrative:

L1485076-03 WG1853745: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	170		0.500	1	04/27/2022 18:31	WG1852954
Cadmium	ND		0.500	1	04/27/2022 18:31	WG1852954
Copper	12.5		2.00	1	04/27/2022 18:31	WG1852954
Lead	5.58		0.500	1	04/27/2022 18:31	WG1852954
Nickel	17.9		2.00	1	04/27/2022 18:31	WG1852954
Selenium	ND		2.00	1	04/27/2022 18:31	WG1852954
Silver	ND		1.00	1	04/27/2022 18:31	WG1852954
Zinc	26.5		5.00	1	04/27/2022 18:31	WG1852954

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.244		0.200	1	04/28/2022 13:00	WG1855508

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	4.32		1.00	5	04/24/2022 23:59	WG1852959

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.605		0.100	1	04/25/2022 06:36	WG1853596
(S) a,a,a-Trifluorotoluene(FID)	87.8		77.0-120		04/25/2022 06:36	WG1853596

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	04/23/2022 21:55	WG1853405
Toluene	ND		0.00500	1	04/23/2022 21:55	WG1853405
Ethylbenzene	ND		0.00250	1	04/23/2022 21:55	WG1853405
Xylenes, Total	0.0129		0.00650	1	04/23/2022 21:55	WG1853405
1,2,4-Trimethylbenzene	ND		0.00500	1	04/23/2022 21:55	WG1853405
1,3,5-Trimethylbenzene	0.0261		0.00500	1	04/23/2022 21:55	WG1853405
(S) Toluene-d8	107		75.0-131		04/23/2022 21:55	WG1853405
(S) 4-Bromofluorobenzene	103		67.0-138		04/23/2022 21:55	WG1853405
(S) 1,2-Dichloroethane-d4	110		70.0-130		04/23/2022 21:55	WG1853405

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	7.30		4.00	1	04/28/2022 04:40	WG1855177
C28-C36 Motor Oil Range	7.04	B	4.00	1	04/28/2022 04:40	WG1855177
(S) o-Terphenyl	68.6		18.0-148		04/28/2022 04:40	WG1855177

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	04/27/2022 12:17	WG1854729
Anthracene	ND		0.00600	1	04/27/2022 12:17	WG1854729
Benzo(a)anthracene	ND		0.00600	1	04/27/2022 12:17	WG1854729
Benzo(b)fluoranthene	ND		0.00600	1	04/27/2022 12:17	WG1854729
Benzo(k)fluoranthene	ND		0.00600	1	04/27/2022 12:17	WG1854729
Benzo(a)pyrene	ND		0.00600	1	04/27/2022 12:17	WG1854729
Chrysene	ND		0.00600	1	04/27/2022 12:17	WG1854729
Dibenz(a,h)anthracene	ND		0.00600	1	04/27/2022 12:17	WG1854729
Fluoranthene	ND		0.00600	1	04/27/2022 12:17	WG1854729
Fluorene	ND		0.00600	1	04/27/2022 12:17	WG1854729
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	04/27/2022 12:17	WG1854729
1-Methylnaphthalene	ND		0.0200	1	04/27/2022 12:17	WG1854729
2-Methylnaphthalene	0.0242		0.0200	1	04/27/2022 12:17	WG1854729
Naphthalene	ND		0.0200	1	04/27/2022 12:17	WG1854729
Pyrene	ND		0.00600	1	04/27/2022 12:17	WG1854729
(S) p-Terphenyl-d14	97.3		23.0-120		04/27/2022 12:17	WG1854729
(S) Nitrobenzene-d5	99.1		14.0-149		04/27/2022 12:17	WG1854729
(S) 2-Fluorobiphenyl	79.3		34.0-125		04/27/2022 12:17	WG1854729

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	0.639		1	04/27/2022 22:38	WG1853665

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	04/27/2022 15:07	WG1853623

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.53	T8	1	04/26/2022 10:00	WG1853301

Sample Narrative:

L1485076-04 WG1853301: 7.53 at 20.2C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	418		10.0	1	04/25/2022 11:00	WG1853745

Sample Narrative:

L1485076-04 WG1853745: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	341		0.500	1	04/27/2022 18:50	WG1852954
Cadmium	ND		0.500	1	04/27/2022 18:50	WG1852954
Copper	12.9		2.00	1	04/27/2022 18:50	WG1852954
Lead	7.76		0.500	1	04/27/2022 18:50	WG1852954
Nickel	11.8		2.00	1	04/27/2022 18:50	WG1852954
Selenium	ND		2.00	1	04/27/2022 18:50	WG1852954
Silver	ND		1.00	1	04/27/2022 18:50	WG1852954
Zinc	26.8		5.00	1	04/27/2022 18:50	WG1852954

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.437		0.200	1	04/28/2022 13:02	WG1855508

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	5.13		1.00	5	04/25/2022 00:22	WG1852959

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	6.40		0.100	1	04/25/2022 07:07	WG1853596
(S) a,a,a-Trifluorotoluene(FID)	86.9		77.0-120		04/25/2022 07:07	WG1853596

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	04/23/2022 22:14	WG1853405
Toluene	0.0151		0.00500	1	04/23/2022 22:14	WG1853405
Ethylbenzene	0.00473		0.00250	1	04/23/2022 22:14	WG1853405
Xylenes, Total	0.133		0.00650	1	04/23/2022 22:14	WG1853405
1,2,4-Trimethylbenzene	0.0294		0.00500	1	04/23/2022 22:14	WG1853405
1,3,5-Trimethylbenzene	0.0519		0.00500	1	04/23/2022 22:14	WG1853405
(S) Toluene-d8	105		75.0-131		04/23/2022 22:14	WG1853405
(S) 4-Bromofluorobenzene	102		67.0-138		04/23/2022 22:14	WG1853405
(S) 1,2-Dichloroethane-d4	108		70.0-130		04/23/2022 22:14	WG1853405

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	9.15		4.00	1	04/28/2022 04:53	WG1855177
C28-C36 Motor Oil Range	8.67		4.00	1	04/28/2022 04:53	WG1855177
(S) o-Terphenyl	60.4		18.0-148		04/28/2022 04:53	WG1855177

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	04/27/2022 12:37	WG1854729
Anthracene	ND		0.00600	1	04/27/2022 12:37	WG1854729
Benzo(a)anthracene	ND		0.00600	1	04/27/2022 12:37	WG1854729
Benzo(b)fluoranthene	ND		0.00600	1	04/27/2022 12:37	WG1854729
Benzo(k)fluoranthene	ND		0.00600	1	04/27/2022 12:37	WG1854729
Benzo(a)pyrene	ND		0.00600	1	04/27/2022 12:37	WG1854729
Chrysene	ND		0.00600	1	04/27/2022 12:37	WG1854729
Dibenz(a,h)anthracene	ND		0.00600	1	04/27/2022 12:37	WG1854729
Fluoranthene	ND		0.00600	1	04/27/2022 12:37	WG1854729
Fluorene	ND		0.00600	1	04/27/2022 12:37	WG1854729
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	04/27/2022 12:37	WG1854729
1-Methylnaphthalene	ND		0.0200	1	04/27/2022 12:37	WG1854729
2-Methylnaphthalene	ND		0.0200	1	04/27/2022 12:37	WG1854729
Naphthalene	ND		0.0200	1	04/27/2022 12:37	WG1854729
Pyrene	ND		0.00600	1	04/27/2022 12:37	WG1854729
(S) p-Terphenyl-d14	88.1		23.0-120		04/27/2022 12:37	WG1854729
(S) Nitrobenzene-d5	79.7		14.0-149		04/27/2022 12:37	WG1854729
(S) 2-Fluorobiphenyl	72.3		34.0-125		04/27/2022 12:37	WG1854729

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	0.743		1	04/27/2022 22:41	WG1853665

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	04/27/2022 15:12	WG1853623

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.76	T8	1	04/26/2022 10:00	WG1853301

Sample Narrative:

L1485076-05 WG1853301: 7.76 at 19.9C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	322		10.0	1	04/25/2022 11:00	WG1853745

Sample Narrative:

L1485076-05 WG1853745: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	81.2		0.500	1	04/27/2022 18:59	WG1852954
Cadmium	ND		0.500	1	04/27/2022 18:59	WG1852954
Copper	6.44		2.00	1	04/27/2022 18:59	WG1852954
Lead	2.89		0.500	1	04/27/2022 18:59	WG1852954
Nickel	18.9		2.00	1	04/27/2022 18:59	WG1852954
Selenium	ND		2.00	1	04/27/2022 18:59	WG1852954
Silver	ND		1.00	1	04/27/2022 18:59	WG1852954
Zinc	17.3		5.00	1	04/27/2022 18:59	WG1852954

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

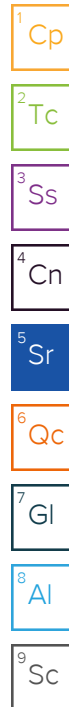
Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	ND		0.200	1	04/28/2022 13:05	WG1855508

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	2.36		1.00	5	04/25/2022 00:32	WG1852959

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.169		0.100	1	04/26/2022 03:19	WG1854102
(S) a,a,a-Trifluorotoluene(FID)	109		77.0-120		04/26/2022 03:19	WG1854102



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	04/23/2022 22:33	WG1853405
Toluene	ND		0.00500	1	04/23/2022 22:33	WG1853405
Ethylbenzene	ND		0.00250	1	04/23/2022 22:33	WG1853405
Xylenes, Total	0.0321		0.00650	1	04/23/2022 22:33	WG1853405
1,2,4-Trimethylbenzene	ND		0.00500	1	04/23/2022 22:33	WG1853405
1,3,5-Trimethylbenzene	0.0519		0.00500	1	04/23/2022 22:33	WG1853405
(S) Toluene-d8	110		75.0-131		04/23/2022 22:33	WG1853405
(S) 4-Bromofluorobenzene	105		67.0-138		04/23/2022 22:33	WG1853405
(S) 1,2-Dichloroethane-d4	107		70.0-130		04/23/2022 22:33	WG1853405

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	ND		4.00	1	04/28/2022 05:07	WG1855177
C28-C36 Motor Oil Range	5.79	B	4.00	1	04/28/2022 05:07	WG1855177
(S) o-Terphenyl	69.4		18.0-148		04/28/2022 05:07	WG1855177

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	04/27/2022 12:56	WG1854729
Anthracene	ND		0.00600	1	04/27/2022 12:56	WG1854729
Benzo(a)anthracene	ND		0.00600	1	04/27/2022 12:56	WG1854729
Benzo(b)fluoranthene	ND		0.00600	1	04/27/2022 12:56	WG1854729
Benzo(k)fluoranthene	ND		0.00600	1	04/27/2022 12:56	WG1854729
Benzo(a)pyrene	ND		0.00600	1	04/27/2022 12:56	WG1854729
Chrysene	ND		0.00600	1	04/27/2022 12:56	WG1854729
Dibenz(a,h)anthracene	ND		0.00600	1	04/27/2022 12:56	WG1854729
Fluoranthene	ND		0.00600	1	04/27/2022 12:56	WG1854729
Fluorene	ND		0.00600	1	04/27/2022 12:56	WG1854729
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	04/27/2022 12:56	WG1854729
1-Methylnaphthalene	ND		0.0200	1	04/27/2022 12:56	WG1854729
2-Methylnaphthalene	ND		0.0200	1	04/27/2022 12:56	WG1854729
Naphthalene	ND		0.0200	1	04/27/2022 12:56	WG1854729
Pyrene	ND		0.00600	1	04/27/2022 12:56	WG1854729
(S) p-Terphenyl-d14	100		23.0-120		04/27/2022 12:56	WG1854729
(S) Nitrobenzene-d5	86.3		14.0-149		04/27/2022 12:56	WG1854729
(S) 2-Fluorobiphenyl	80.9		34.0-125		04/27/2022 12:56	WG1854729

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	0.926		1	04/27/2022 22:44	WG1853665

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	04/27/2022 15:28	WG1853623

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.71	T8	1	04/26/2022 10:00	WG1853301

Sample Narrative:

L1485076-06 WG1853301: 7.71 at 19.9C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	369		10.0	1	04/25/2022 11:00	WG1853745

Sample Narrative:

L1485076-06 WG1853745: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	242		0.500	1	04/27/2022 19:01	WG1852954
Cadmium	ND		0.500	1	04/27/2022 19:01	WG1852954
Copper	15.5		2.00	1	04/27/2022 19:01	WG1852954
Lead	10.7		0.500	1	04/27/2022 19:01	WG1852954
Nickel	14.1		2.00	1	04/27/2022 19:01	WG1852954
Selenium	ND		2.00	1	04/27/2022 19:01	WG1852954
Silver	ND		1.00	1	04/27/2022 19:01	WG1852954
Zinc	34.8		5.00	1	04/27/2022 19:01	WG1852954

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

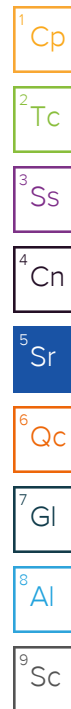
Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.496		0.200	1	04/28/2022 13:08	WG1855508

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	4.45		1.00	5	04/25/2022 00:35	WG1852959

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.303		0.100	1	04/25/2022 07:53	WG1853596
(S) a,a,a-Trifluorotoluene(FID)	92.3		77.0-120		04/25/2022 07:53	WG1853596



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	04/23/2022 22:52	WG1853405
Toluene	ND		0.00500	1	04/23/2022 22:52	WG1853405
Ethylbenzene	ND		0.00250	1	04/23/2022 22:52	WG1853405
Xylenes, Total	ND		0.00650	1	04/23/2022 22:52	WG1853405
1,2,4-Trimethylbenzene	ND		0.00500	1	04/23/2022 22:52	WG1853405
1,3,5-Trimethylbenzene	0.0219		0.00500	1	04/23/2022 22:52	WG1853405
(S) Toluene-d8	108		75.0-131		04/23/2022 22:52	WG1853405
(S) 4-Bromofluorobenzene	101		67.0-138		04/23/2022 22:52	WG1853405
(S) 1,2-Dichloroethane-d4	107		70.0-130		04/23/2022 22:52	WG1853405

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	4.13		4.00	1	04/28/2022 05:20	WG1855177
C28-C36 Motor Oil Range	5.33	B	4.00	1	04/28/2022 05:20	WG1855177
(S) o-Terphenyl	54.8		18.0-148		04/28/2022 05:20	WG1855177

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	04/27/2022 13:16	WG1854729
Anthracene	ND		0.00600	1	04/27/2022 13:16	WG1854729
Benzo(a)anthracene	ND		0.00600	1	04/27/2022 13:16	WG1854729
Benzo(b)fluoranthene	ND		0.00600	1	04/27/2022 13:16	WG1854729
Benzo(k)fluoranthene	ND		0.00600	1	04/27/2022 13:16	WG1854729
Benzo(a)pyrene	ND		0.00600	1	04/27/2022 13:16	WG1854729
Chrysene	ND		0.00600	1	04/27/2022 13:16	WG1854729
Dibenz(a,h)anthracene	ND		0.00600	1	04/27/2022 13:16	WG1854729
Fluoranthene	ND		0.00600	1	04/27/2022 13:16	WG1854729
Fluorene	ND		0.00600	1	04/27/2022 13:16	WG1854729
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	04/27/2022 13:16	WG1854729
1-Methylnaphthalene	ND		0.0200	1	04/27/2022 13:16	WG1854729
2-Methylnaphthalene	ND		0.0200	1	04/27/2022 13:16	WG1854729
Naphthalene	0.0217		0.0200	1	04/27/2022 13:16	WG1854729
Pyrene	ND		0.00600	1	04/27/2022 13:16	WG1854729
(S) p-Terphenyl-d14	92.0		23.0-120		04/27/2022 13:16	WG1854729
(S) Nitrobenzene-d5	79.5		14.0-149		04/27/2022 13:16	WG1854729
(S) 2-Fluorobiphenyl	75.5		34.0-125		04/27/2022 13:16	WG1854729

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	3.49		1	04/27/2022 22:47	WG1853665

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	04/27/2022 15:33	WG1853623

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.32	T8	1	04/26/2022 10:00	WG1853301

Sample Narrative:

L1485076-07 WG1853301: 7.32 at 19.7C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	1840		10.0	1	04/25/2022 11:00	WG1853745

Sample Narrative:

L1485076-07 WG1853745: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	389		0.500	1	04/27/2022 19:04	WG1852954
Cadmium	ND		0.500	1	04/27/2022 19:04	WG1852954
Copper	16.5		2.00	1	04/27/2022 19:04	WG1852954
Lead	9.72		0.500	1	04/27/2022 19:04	WG1852954
Nickel	16.6		2.00	1	04/27/2022 19:04	WG1852954
Selenium	ND		2.00	1	04/27/2022 19:04	WG1852954
Silver	ND		1.00	1	04/27/2022 19:04	WG1852954
Zinc	35.4		5.00	1	04/27/2022 19:04	WG1852954

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.314		0.200	1	04/28/2022 13:11	WG1855508

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	6.13		1.00	5	04/25/2022 00:38	WG1852959

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	3040		200	2000	04/27/2022 10:58	WG1854453
(S) a,a,a-Trifluorotoluene(FID)	95.4		77.0-120		04/27/2022 10:58	WG1854453

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.931		0.0200	20	04/24/2022 02:21	WG1853405
Toluene	62.2		2.00	400	04/25/2022 17:29	WG1853697
Ethylbenzene	12.9		0.0500	20	04/24/2022 02:21	WG1853405
Xylenes, Total	270		2.60	400	04/25/2022 17:29	WG1853697
1,2,4-Trimethylbenzene	57.9		2.00	400	04/25/2022 17:29	WG1853697
1,3,5-Trimethylbenzene	57.6		2.00	400	04/25/2022 17:29	WG1853697
(S) Toluene-d8	109		75.0-131		04/24/2022 02:21	WG1853405
(S) Toluene-d8	108		75.0-131		04/25/2022 17:29	WG1853697
(S) 4-Bromofluorobenzene	118		67.0-138		04/24/2022 02:21	WG1853405
(S) 4-Bromofluorobenzene	97.3		67.0-138		04/25/2022 17:29	WG1853697
(S) 1,2-Dichloroethane-d4	105		70.0-130		04/24/2022 02:21	WG1853405
(S) 1,2-Dichloroethane-d4	106		70.0-130		04/25/2022 17:29	WG1853697

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	2070		80.0	20	04/28/2022 10:25	WG1855177
C28-C36 Motor Oil Range	23.1		4.00	1	04/28/2022 05:34	WG1855177
(S) o-Terphenyl	107		18.0-148		04/28/2022 05:34	WG1855177
(S) o-Terphenyl	0.000	J7	18.0-148		04/28/2022 10:25	WG1855177

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	0.167		0.00600	1	04/27/2022 13:36	WG1854729
Anthracene	ND		0.00600	1	04/27/2022 13:36	WG1854729
Benzo(a)anthracene	ND		0.00600	1	04/27/2022 13:36	WG1854729
Benzo(b)fluoranthene	ND		0.00600	1	04/27/2022 13:36	WG1854729
Benzo(k)fluoranthene	ND		0.00600	1	04/27/2022 13:36	WG1854729
Benzo(a)pyrene	ND		0.00600	1	04/27/2022 13:36	WG1854729
Chrysene	ND		0.00600	1	04/27/2022 13:36	WG1854729
Dibenz(a,h)anthracene	ND		0.00600	1	04/27/2022 13:36	WG1854729
Fluoranthene	ND		0.00600	1	04/27/2022 13:36	WG1854729
Fluorene	0.357		0.00600	1	04/27/2022 13:36	WG1854729
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	04/27/2022 13:36	WG1854729
1-Methylnaphthalene	2.04		0.0200	1	04/27/2022 13:36	WG1854729
2-Methylnaphthalene	8.67		0.200	10	04/28/2022 13:20	WG1854729
Naphthalene	3.09		0.0200	1	04/27/2022 13:36	WG1854729
Pyrene	ND		0.00600	1	04/27/2022 13:36	WG1854729
(S) p-Terphenyl-d14	99.9		23.0-120		04/28/2022 13:20	WG1854729
(S) p-Terphenyl-d14	97.3		23.0-120		04/27/2022 13:36	WG1854729
(S) Nitrobenzene-d5	1810	J1	14.0-149		04/27/2022 13:36	WG1854729
(S) Nitrobenzene-d5	0.000	J2	14.0-149		04/28/2022 13:20	WG1854729
(S) 2-Fluorobiphenyl	67.6		34.0-125		04/28/2022 13:20	WG1854729
(S) 2-Fluorobiphenyl	102		34.0-125		04/27/2022 13:36	WG1854729

Sample Narrative:

L1485076-07 WG1854729: Surrogate failure due to matrix interference

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	7.76		1	04/27/2022 22:50	WG1853665

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	04/27/2022 15:38	WG1853623

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.80	T8	1	04/26/2022 10:00	WG1853301

Sample Narrative:

L1485076-08 WG1853301: 7.8 at 20.3C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	1270		10.0	1	04/25/2022 11:00	WG1853745

Sample Narrative:

L1485076-08 WG1853745: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	312		0.500	1	04/27/2022 19:07	WG1852954
Cadmium	ND		0.500	1	04/27/2022 19:07	WG1852954
Copper	16.3		2.00	1	04/27/2022 19:07	WG1852954
Lead	9.88		0.500	1	04/27/2022 19:07	WG1852954
Nickel	14.1		2.00	1	04/27/2022 19:07	WG1852954
Selenium	ND		2.00	1	04/27/2022 19:07	WG1852954
Silver	ND		1.00	1	04/27/2022 19:07	WG1852954
Zinc	34.8		5.00	1	04/27/2022 19:07	WG1852954

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

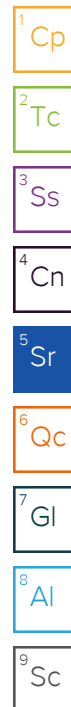
Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.482		0.200	1	04/28/2022 13:14	WG1855508

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	4.80		1.00	5	04/25/2022 00:42	WG1852959

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	243		10.0	100	04/25/2022 00:16	WG1853645
(S) a,a,a-Trifluorotoluene(FID)	100		77.0-120		04/25/2022 00:16	WG1853645



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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00800	8	04/24/2022 02:40	WG1853405
Toluene	0.0921		0.0400	8	04/25/2022 16:32	WG1853697
Ethylbenzene	0.0449		0.0200	8	04/24/2022 02:40	WG1853405
Xylenes, Total	4.28		0.0520	8	04/25/2022 16:32	WG1853697
1,2,4-Trimethylbenzene	2.31		0.0400	8	04/25/2022 16:32	WG1853697
1,3,5-Trimethylbenzene	4.38		0.0400	8	04/25/2022 16:32	WG1853697
(S) Toluene-d8	109		75.0-131		04/24/2022 02:40	WG1853405
(S) Toluene-d8	113		75.0-131		04/25/2022 16:32	WG1853697
(S) 4-Bromofluorobenzene	103		67.0-138		04/24/2022 02:40	WG1853405
(S) 4-Bromofluorobenzene	107		67.0-138		04/25/2022 16:32	WG1853697
(S) 1,2-Dichloroethane-d4	104		70.0-130		04/24/2022 02:40	WG1853405
(S) 1,2-Dichloroethane-d4	105		70.0-130		04/25/2022 16:32	WG1853697

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	146		4.00	1	04/28/2022 05:47	WG1855177
C28-C36 Motor Oil Range	7.30	B	4.00	1	04/28/2022 05:47	WG1855177
(S) o-Terphenyl	62.9		18.0-148		04/28/2022 05:47	WG1855177

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	0.0118		0.00600	1	04/27/2022 13:56	WG1854729
Anthracene	ND		0.00600	1	04/27/2022 13:56	WG1854729
Benzo(a)anthracene	ND		0.00600	1	04/27/2022 13:56	WG1854729
Benzo(b)fluoranthene	ND		0.00600	1	04/27/2022 13:56	WG1854729
Benzo(k)fluoranthene	ND		0.00600	1	04/27/2022 13:56	WG1854729
Benzo(a)pyrene	ND		0.00600	1	04/27/2022 13:56	WG1854729
Chrysene	ND		0.00600	1	04/27/2022 13:56	WG1854729
Dibenz(a,h)anthracene	ND		0.00600	1	04/27/2022 13:56	WG1854729
Fluoranthene	ND		0.00600	1	04/27/2022 13:56	WG1854729
Fluorene	0.0263		0.00600	1	04/27/2022 13:56	WG1854729
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	04/27/2022 13:56	WG1854729
1-Methylnaphthalene	0.210		0.0200	1	04/27/2022 13:56	WG1854729
2-Methylnaphthalene	0.587		0.0200	1	04/27/2022 13:56	WG1854729
Naphthalene	0.179		0.0200	1	04/27/2022 13:56	WG1854729
Pyrene	ND		0.00600	1	04/27/2022 13:56	WG1854729
(S) p-Terphenyl-d14	101		23.0-120		04/27/2022 13:56	WG1854729
(S) Nitrobenzene-d5	230	J1	14.0-149		04/27/2022 13:56	WG1854729
(S) 2-Fluorobiphenyl	75.9		34.0-125		04/27/2022 13:56	WG1854729

Sample Narrative:

L1485076-08 WG1854729: Surrogate failure due to matrix interference

Method Blank (MB)

(MB) R3785705-1 04/27/22 13:21

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

L1485076-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1485076-03 04/27/22 14:57 • (DUP) R3785705-7 04/27/22 15:02

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	ND	ND	1	2.56		20

L1485076-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1485076-12 04/27/22 15:43 • (DUP) R3785705-8 04/27/22 15:48

	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) R3785705-2 04/27/22 13:28

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	9.96	99.6	80.0-120	

L1485076-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1485076-01 04/27/22 14:25 • (MS) R3785705-3 04/27/22 14:31 • (MSD) R3785705-4 04/27/22 14:36

	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	16.1	18.0	79.0	88.1	1	75.0-125			10.6	20

L1485076-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1485076-01 04/27/22 14:25 • (MS) R3785705-5 04/27/22 14:41

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	639	ND	622	97.3	50	75.0-125	

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

L1485076-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1485076-06 04/26/22 10:00 • (DUP) R3785027-2 04/26/22 10:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	pH	su		%		%
pH	7.71	7.70	1	0.130		1

Sample Narrative:

OS: 7.71 at 19.9C

DUP: 7.7 at 20C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1485076-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1485076-11 04/26/22 10:00 • (DUP) R3785027-3 04/26/22 10:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	pH	su		%		%
pH	7.62	7.62	1	0.000		1

Sample Narrative:

OS: 7.62 at 20.3C

DUP: 7.62 at 20.3C

Laboratory Control Sample (LCS)

(LCS) R3785027-1 04/26/22 10:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	9.95	99.5	99.0-101	

Sample Narrative:

LCS: 9.95 at 20.1C

L1485077-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1485077-02 04/26/22 15:00 • (DUP) R3785194-2 04/26/22 15:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	pH	su		%		%
pH	7.99	8.01	1	0.250		1

Sample Narrative:

OS: 7.99 at 19.5C

DUP: 8.01 at 19.3C

L1485313-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1485313-04 04/26/22 15:00 • (DUP) R3785194-3 04/26/22 15:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	9.37	9.35	1	0.214		1

Sample Narrative:

OS: 9.37 at 20.2C

DUP: 9.35 at 20.2C

Laboratory Control Sample (LCS)

(LCS) R3785194-1 04/26/22 15:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	9.93	99.3	99.0-101	

Sample Narrative:

LCS: 9.93 at 18.6C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3784665-1 04/25/22 10:12

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

L1483860-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1483860-01 04/25/22 10:12 • (DUP) R3784665-3 04/25/22 10:12

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	686	670	1	2.36		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1485076-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1485076-02 04/25/22 10:12 • (DUP) R3784665-4 04/25/22 10:12

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	673	668	1	0.746		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3784665-2 04/25/22 10:12

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	282	105	85.0-115	

Sample Narrative:

LCS: at 25C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3784683-1 04/25/22 11:00

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

L1485055-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1485055-02 04/25/22 11:00 • (DUP) R3784683-3 04/25/22 11:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	4940	4930	1	0.203		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1485058-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1485058-02 04/25/22 11:00 • (DUP) R3784683-4 04/25/22 11:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	2810	2900	1	3.33		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3784683-2 04/25/22 11:00

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	275	102	85.0-115	

Sample Narrative:

LCS: at 25C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3785756-1 04/27/22 18:25

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

Laboratory Control Sample (LCS)

(LCS) R3785756-2 04/27/22 18:28

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	101	101	80.0-120	
Cadmium	100	95.6	95.6	80.0-120	
Copper	100	98.0	98.0	80.0-120	
Lead	100	96.4	96.4	80.0-120	
Nickel	100	97.5	97.5	80.0-120	
Selenium	100	96.3	96.3	80.0-120	
Silver	20.0	18.3	91.3	80.0-120	
Zinc	100	92.8	92.8	80.0-120	

L1485076-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1485076-03 04/27/22 18:31 • (MS) R3785756-5 04/27/22 18:39 • (MSD) R3785756-6 04/27/22 18:41

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	100	170	272	245	102	75.1	1	75.0-125			10.5	20
Cadmium	100	ND	100	102	99.9	102	1	75.0-125			1.91	20
Copper	100	12.5	113	112	101	99.5	1	75.0-125			0.863	20
Lead	100	5.58	107	108	101	103	1	75.0-125			1.57	20
Nickel	100	17.9	122	120	104	102	1	75.0-125			1.55	20
Selenium	100	ND	97.6	94.5	97.6	94.5	1	75.0-125			3.26	20
Silver	20.0	ND	19.4	19.7	96.9	98.5	1	75.0-125			1.66	20
Zinc	100	26.5	116	115	89.8	89.0	1	75.0-125			0.718	20

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3786108-1 04/28/22 12:16

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) R3786108-2 04/28/22 12:18 • (LCSD) R3786108-3 04/28/22 12:21

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	0.975	0.957	97.5	95.7	80.0-120			1.83	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3784630-1 04/24/22 23:52

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

Laboratory Control Sample (LCS)

(LCS) R3784630-2 04/24/22 23:55

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Arsenic	100	92.4	92.4	80.0-120	

L1485076-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1485076-03 04/24/22 23:59 • (MS) R3784630-5 04/25/22 00:09 • (MSD) R3784630-6 04/25/22 00:12

	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	%	%		%			%	%
Arsenic	100	4.32	96.3	97.7	91.9	93.3	5	75.0-125			1.46	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3784867-2 04/25/22 06:16

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)	94.8			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3784867-1 04/25/22 05:17

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	6.67	121	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			103	77.0-120	

L1485076-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1485076-03 04/25/22 06:36 • (MS) R3784867-3 04/25/22 14:36 • (MSD) R3784867-4 04/25/22 14:56

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.56	0.605	5.78	6.26	93.1	104	1.01	10.0-151			7.97	28
(S) a,a,a-Trifluorotoluene(FID)					101	103		77.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3785096-2 04/24/22 19:45

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	1.86	⬇	0.543	2.50
(S) a,a,a-Trifluorotoluene(FID)	99.8			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3785096-1 04/24/22 17:49

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	6.21	113	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			112	77.0-120	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3784970-3 04/25/22 19:25

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)	111			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3784970-2 04/25/22 18:42

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.94	89.8	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) R3785416-2 04/26/22 15:10

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)	97.4			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3785416-1 04/26/22 13:50

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.32	78.5	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			99.8	77.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3784556-3 04/23/22 19:52

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	112			75.0-131
(S) 4-Bromofluorobenzene	96.8			67.0-138
(S) 1,2-Dichloroethane-d4	108			70.0-130

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

(LCS) R3784556-1 04/23/22 18:36 • (LCSD) R3784556-2 04/23/22 18:55

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	0.115	0.114	92.0	91.2	70.0-123			0.873	20
Toluene	0.125	0.128	0.127	102	102	75.0-121			0.784	20
Ethylbenzene	0.125	0.127	0.129	102	103	74.0-126			1.56	20
Xylenes, Total	0.375	0.367	0.371	97.9	98.9	72.0-127			1.08	20
1,2,4-Trimethylbenzene	0.125	0.109	0.111	87.2	88.8	70.0-126			1.82	20
1,3,5-Trimethylbenzene	0.125	0.117	0.114	93.6	91.2	73.0-127			2.60	20
(S) Toluene-d8				111	108	75.0-131				
(S) 4-Bromofluorobenzene				96.6	95.8	67.0-138				
(S) 1,2-Dichloroethane-d4				107	107	70.0-130				

L1485076-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1485076-01 04/24/22 01:43 • (MS) R3784556-4 04/24/22 02:59 • (MSD) R3784556-5 04/24/22 03:18

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	2.48	0.931	2.93	2.93	80.6	80.6	20	10.0-149			0.000	37
Toluene	2.48	55.3	53.1	52.7	0.000	0.000	20	10.0-156	E V	E V	0.756	38
Ethylbenzene	2.48	12.6	13.9	14.5	52.4	76.6	20	10.0-160			4.23	38
Xylenes, Total	7.43	288	278	289	0.000	13.5	20	10.0-160	V		3.88	38
1,2,4-Trimethylbenzene	2.48	50.6	47.5	47.6	0.000	0.000	20	10.0-160	V	V	0.210	36
1,3,5-Trimethylbenzene	2.48	49.2	46.0	46.2	0.000	0.000	20	10.0-160	V	V	0.434	38
(S) Toluene-d8					112	111		75.0-131				
(S) 4-Bromofluorobenzene					123	132		67.0-138				
(S) 1,2-Dichloroethane-d4					105	105		70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3784937-3 04/25/22 11:39

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Toluene	U		0.00130	0.00500
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	112			75.0-131
(S) 4-Bromofluorobenzene	94.1			67.0-138
(S) 1,2-Dichloroethane-d4	103			70.0-130

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

(LCS) R3784937-1 04/25/22 10:22 • (LCSD) R3784937-2 04/25/22 10:42

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 %
Toluene	0.125	0.136	0.137	109	110	75.0-121			0.733	20
Xylenes, Total	0.375	0.412	0.404	110	108	72.0-127			1.96	20
1,2,4-Trimethylbenzene	0.125	0.113	0.125	90.4	100	70.0-126			10.1	20
1,3,5-Trimethylbenzene	0.125	0.114	0.129	91.2	103	73.0-127			12.3	20
(S) Toluene-d8				106	107	75.0-131				
(S) 4-Bromofluorobenzene				99.1	95.8	67.0-138				
(S) 1,2-Dichloroethane-d4				104	107	70.0-130				

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3785861-1 04/28/22 03:01

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	0.837	⬇	0.274	4.00
(S) o-Terphenyl	67.4			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3785861-2 04/28/22 03:19

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	33.4	66.8	50.0-150	
(S) o-Terphenyl			87.1	18.0-148	

L1485077-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1485077-01 04/28/22 07:08 • (MS) R3785861-3 04/28/22 07:21 • (MSD) R3785861-4 04/28/22 07:35

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	49.4	230	220	238	0.000	16.2	10	50.0-150	⬇	⬇	7.86	20
(S) o-Terphenyl					102	119		18.0-148				

Sample Narrative:

OS: Surrogate failure due to matrix interference

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3785928-1 04/27/22 09:38

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	88.7			14.0-149
(S) 2-Fluorobiphenyl	85.1			34.0-125

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3785928-2 04/27/22 09:57

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0668	83.5	50.0-120	
Anthracene	0.0800	0.0654	81.8	50.0-126	
Benzo(a)anthracene	0.0800	0.0674	84.3	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0720	90.0	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0707	88.4	49.0-125	
Benzo(a)pyrene	0.0800	0.0624	78.0	42.0-120	
Chrysene	0.0800	0.0710	88.8	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0702	87.8	47.0-125	
Fluoranthene	0.0800	0.0697	87.1	49.0-129	
Fluorene	0.0800	0.0692	86.5	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0680	85.0	46.0-125	
1-Methylnaphthalene	0.0800	0.0680	85.0	51.0-121	
2-Methylnaphthalene	0.0800	0.0643	80.4	50.0-120	
Naphthalene	0.0800	0.0693	86.6	50.0-120	
Pyrene	0.0800	0.0680	85.0	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R3785928-2 04/27/22 09:57

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
(S) p-Terphenyl-d14			103	23.0-120	
(S) Nitrobenzene-d5			93.8	14.0-149	
(S) 2-Fluorobiphenyl			89.7	34.0-125	

L1484853-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1484853-01 04/27/22 10:17 • (MS) R3785928-3 04/27/22 10:37 • (MSD) R3785928-4 04/27/22 10:57

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	0.0800	ND	0.0534	0.0547	66.8	68.4	1	14.0-127			2.41	27
Anthracene	0.0800	ND	0.0520	0.0558	65.0	69.8	1	10.0-145			7.05	30
Benzo(a)anthracene	0.0800	ND	0.0533	0.0594	66.6	74.3	1	10.0-139			10.8	30
Benzo(b)fluoranthene	0.0800	ND	0.0554	0.0587	69.3	73.4	1	10.0-140			5.78	36
Benzo(k)fluoranthene	0.0800	ND	0.0551	0.0588	68.9	73.5	1	10.0-137			6.50	31
Benzo(a)pyrene	0.0800	ND	0.0528	0.0576	66.0	72.0	1	10.0-141			8.70	31
Chrysene	0.0800	ND	0.0570	0.0610	71.3	76.3	1	10.0-145			6.78	30
Dibenz(a,h)anthracene	0.0800	ND	0.0547	0.0583	68.4	72.9	1	10.0-132			6.37	31
Fluoranthene	0.0800	ND	0.0553	0.0600	69.1	75.0	1	10.0-153			8.15	33
Fluorene	0.0800	ND	0.0546	0.0579	68.3	72.4	1	11.0-130			5.87	29
Indeno(1,2,3-cd)pyrene	0.0800	ND	0.0535	0.0581	66.9	72.6	1	10.0-137			8.24	32
1-Methylnaphthalene	0.0800	ND	0.0654	0.0718	68.9	76.9	1	10.0-142			9.33	28
2-Methylnaphthalene	0.0800	ND	0.0664	0.0766	62.3	75.0	1	10.0-137			14.3	28
Naphthalene	0.0800	ND	0.0708	0.0778	67.1	75.9	1	10.0-135			9.42	27
Pyrene	0.0800	ND	0.0522	0.0565	65.3	70.6	1	10.0-148			7.91	35
(S) p-Terphenyl-d14					88.7	88.8		23.0-120				
(S) Nitrobenzene-d5					86.2	82.6		14.0-149				
(S) 2-Fluorobiphenyl					79.7	76.4		34.0-125				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

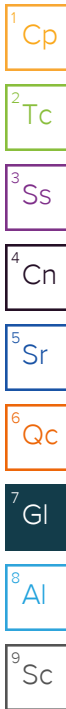
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

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

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



Caerus Oil & Gas LLC
143 Diamond Avenue
Parachute, CO 81635
970-285-9606

Billing Information:

Same as above

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 2



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



Report to:
bmiddleton@caerusoilandgas.com

Email To:
bmiddleton@caerusoilandgas.com

Project
Description: YCF 35-33-1

City/State
Collected: Rio Blanco, CO

Phone: (970) 668-4514
Fax:

Client Project #
YCF 35-33-1

Lab Project #
YCF 35-33-1

Collected by (print):
K. MORELAND

Site/Facility ID #
YCF 35-33-1

P.O. #
YCF 35-33-1

Collected by (signature):

Rush? (Lab MUST Be Notified)

Quote #

Immediately
Packed on Ice N ☐ Y ☒

☐ Same Day ☐ Five Day
☐ Next Day ☐ 5 Day (Rad Only)
☐ Two Day ☐ 10 Day (Rad Only)
☐ Three Day

Date Results Needed

Standard TAT

No.
of
Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TPH- GRO, DRO, ORO	BTEX	TABLE 915-1- PAH's	SAR, EC, pH, Boron	TABLE 915-1- Metals							
20220419-YCF 35-33-1 (PDC A)	GRAB	SS	1'	4/19/22	1045	3	X	X	X	X	X							-01
20220419-YCF 35-33-1 (PDC A) @ 2'			2'		1130													-02
20220419-YCF 35-33-1 (PDC B)			1'		1048													-03
20220419-YCF 35-33-1 (PDC B) @ 2'			2'		1135													-04
20220419-YCF 35-33-1 (PDC C)			1'		1100													-05
20220419-YCF 35-33-1 (PDC C) @ 2'			2'		1140													-06
20220419-YCF 35-33-1 (PDC D)			1'		1105													-07
20220419-YCF 35-33-1 (PDC D) @ 2'			2'		1150													-08
20220419-YCF 35-33-1 (PDC E)			1'		1110													
20220419-YCF 35-33-1 (PDC E) @ 2'			2'		1200													

* 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 #

pH Temp

Flow Other

Sample Receipt Checklist

COC Seal Present/Intact: ☒ Y ☐ N
COC Signed/Accurate: ☒ Y ☐ N
Bottles arrive intact: ☒ Y ☐ N
Correct bottles used: ☒ Y ☐ N
Sufficient volume sent: ☒ Y ☐ N
If Applicable
VOA Zero Headspace: ☐ Y ☐ N
Preservation Correct/Checked: ☐ Y ☐ N

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Trip Blank Received: Yes ☒ No
HCL / MeOH
TBR

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp: °C Bottles Received: 38

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date: 4/21/22 Time: 0930

Hold:

Condition:
NCF 10

[illegible]

Caerus Oil and Gas

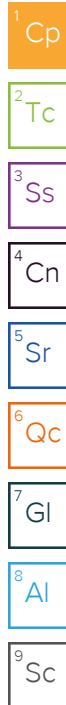
Sample Delivery Group: L1485076
Samples Received: 04/21/2022
Project Number: YCF 35-33-1
Description: YCF 35-33-1
Site: YCF 35-33-1
Report To: Brett Middleton
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:



Chris Ward
Project Manager

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



Pace Analytical National

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

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SAMPLE SUMMARY

20220419-YCF 35-33-1(BGN) L1485076-09 Solid

Collected by K. Moreland
Collected date/time 04/19/22 13:55
Received date/time 04/21/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1853665	1	04/27/22 22:53	04/27/22 22:53	CCE	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1853203	1	04/23/22 08:00	04/23/22 10:00	GI	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1853745	1	04/25/22 07:47	04/25/22 11:00	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1855508	1	04/27/22 21:46	04/28/22 13:17	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1853000	5	04/24/22 06:43	04/24/22 16:41	LD	Mt. Juliet, TN

20220419-YCF 35-33-1(BGE) L1485076-10 Solid

Collected by K. Moreland
Collected date/time 04/19/22 14:05
Received date/time 04/21/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1853665	1	04/27/22 23:01	04/27/22 23:01	CCE	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1853301	1	04/26/22 08:00	04/26/22 10:00	GI	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1853745	1	04/25/22 07:47	04/25/22 11:00	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1855508	1	04/27/22 21:46	04/28/22 13:26	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1853000	5	04/24/22 06:43	04/24/22 16:45	LD	Mt. Juliet, TN

20220419-YCF 35-33-1(BGS) L1485076-11 Solid

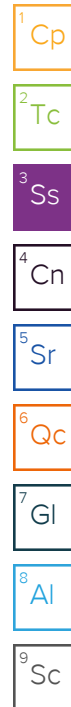
Collected by K. Moreland
Collected date/time 04/19/22 14:15
Received date/time 04/21/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1853665	1	04/27/22 23:04	04/27/22 23:04	CCE	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1853301	1	04/26/22 08:00	04/26/22 10:00	GI	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1853745	1	04/25/22 07:47	04/25/22 11:00	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1855508	1	04/27/22 21:46	04/28/22 13:28	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1853000	5	04/24/22 06:43	04/24/22 16:48	LD	Mt. Juliet, TN

20220419-YCF 35-33-1(BGW) L1485076-12 Solid

Collected by K. Moreland
Collected date/time 04/19/22 14:30
Received date/time 04/21/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1853665	1	04/27/22 23:07	04/27/22 23:07	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1853623	1	04/26/22 00:38	04/27/22 15:43	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1853301	1	04/26/22 08:00	04/26/22 10:00	GI	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1853745	1	04/25/22 07:47	04/25/22 11:00	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1852954	1	04/24/22 08:37	04/27/22 19:10	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1855508	1	04/27/22 21:46	04/28/22 13:31	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1852959	5	04/24/22 08:27	04/25/22 00:46	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1853596	1	04/23/22 16:30	04/25/22 08:14	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1853405	1	04/23/22 16:30	04/23/22 23:11	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1855177	1	04/27/22 18:26	04/28/22 06:01	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1854729	1	04/27/22 03:33	04/27/22 14:16	AMG	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.



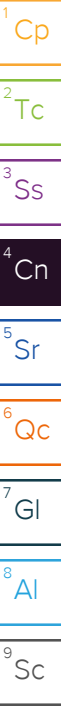
Chris Ward
Project Manager

Report Revision History

Level II Report - Version 1: 04/29/22 10:27
Level II Report - Version 2: 05/02/22 12:29

Project Narrative

Rerun to split report for Background samples and correct sample IDs



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.226		1	04/27/2022 22:53	WG1853665

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.06	T8	1	04/23/2022 10:00	WG1853203

Sample Narrative:

L1485076-09 WG1853203: 8.06 at 20.9C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	287		umhos/cm	1	04/25/2022 11:00	WG1853745

Sample Narrative:

L1485076-09 WG1853745: at 25C

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.236		mg/l	1	04/28/2022 13:17	WG1855508

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	4.13		mg/kg	5	04/24/2022 16:41	WG1853000

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	0.225		1	04/27/2022 23:01	WG1853665

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.85	T8	1	04/26/2022 10:00	WG1853301

Sample Narrative:

L1485076-10 WG1853301: 7.85 at 20.5C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
Specific Conductance	302		10.0	1	04/25/2022 11:00	WG1853745

Sample Narrative:

L1485076-10 WG1853745: at 25C

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	mg/l		mg/l			
Hot Water Sol. Boron	0.369		0.200	1	04/28/2022 13:26	WG1855508

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	mg/kg		mg/kg			
Arsenic	4.15		1.00	5	04/24/2022 16:45	WG1853000

¹Cp²Tc³Ss⁴Cn⁵Sr⁶Qc⁷Gl⁸Al⁹Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.139		1	04/27/2022 23:04	WG1853665

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.62	T8	1	04/26/2022 10:00	WG1853301

Sample Narrative:

L1485076-11 WG1853301: 7.62 at 20.3C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	278		10.0	1	04/25/2022 11:00	WG1853745

Sample Narrative:

L1485076-11 WG1853745: at 25C

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.260		0.200	1	04/28/2022 13:28	WG1855508

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	3.85		1.00	5	04/24/2022 16:48	WG1853000

¹Cp²Tc³Ss⁴Cn⁵Sr⁶Qc⁷Gl⁸Al⁹Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.0826		1	04/27/2022 23:07	WG1853665

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	04/27/2022 15:43	WG1853623

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.67	T8	1	04/26/2022 10:00	WG1853301

Sample Narrative:

L1485076-12 WG1853301: 7.67 at 20.5C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	294		10.0	1	04/25/2022 11:00	WG1853745

Sample Narrative:

L1485076-12 WG1853745: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	341		0.500	1	04/27/2022 19:10	WG1852954
Cadmium	ND		0.500	1	04/27/2022 19:10	WG1852954
Copper	10.2		2.00	1	04/27/2022 19:10	WG1852954
Lead	7.72		0.500	1	04/27/2022 19:10	WG1852954
Nickel	11.6		2.00	1	04/27/2022 19:10	WG1852954
Selenium	ND		2.00	1	04/27/2022 19:10	WG1852954
Silver	ND		1.00	1	04/27/2022 19:10	WG1852954
Zinc	29.7		5.00	1	04/27/2022 19:10	WG1852954

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.249		0.200	1	04/28/2022 13:31	WG1855508

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	3.33		1.00	5	04/25/2022 00:46	WG1852959

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.725		0.100	1	04/25/2022 08:14	WG1853596
(S) a,a,a-Trifluorotoluene(FID)	90.7		77.0-120		04/25/2022 08:14	WG1853596

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00128		0.00100	1	04/23/2022 23:11	WG1853405
Toluene	0.0553		0.00500	1	04/23/2022 23:11	WG1853405
Ethylbenzene	0.0128		0.00250	1	04/23/2022 23:11	WG1853405
Xylenes, Total	0.242		0.00650	1	04/23/2022 23:11	WG1853405
1,2,4-Trimethylbenzene	0.0140		0.00500	1	04/23/2022 23:11	WG1853405
1,3,5-Trimethylbenzene	0.0148		0.00500	1	04/23/2022 23:11	WG1853405
(S) Toluene-d8	109		75.0-131		04/23/2022 23:11	WG1853405
(S) 4-Bromofluorobenzene	97.9		67.0-138		04/23/2022 23:11	WG1853405
(S) 1,2-Dichloroethane-d4	105		70.0-130		04/23/2022 23:11	WG1853405

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	6.20		4.00	1	04/28/2022 06:01	WG1855177
C28-C36 Motor Oil Range	20.5		4.00	1	04/28/2022 06:01	WG1855177
(S) o-Terphenyl	63.2		18.0-148		04/28/2022 06:01	WG1855177

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	04/27/2022 14:16	WG1854729
Anthracene	ND		0.00600	1	04/27/2022 14:16	WG1854729
Benzo(a)anthracene	ND		0.00600	1	04/27/2022 14:16	WG1854729
Benzo(b)fluoranthene	ND		0.00600	1	04/27/2022 14:16	WG1854729
Benzo(k)fluoranthene	ND		0.00600	1	04/27/2022 14:16	WG1854729
Benzo(a)pyrene	ND		0.00600	1	04/27/2022 14:16	WG1854729
Chrysene	ND		0.00600	1	04/27/2022 14:16	WG1854729
Dibenz(a,h)anthracene	ND		0.00600	1	04/27/2022 14:16	WG1854729
Fluoranthene	ND		0.00600	1	04/27/2022 14:16	WG1854729
Fluorene	ND		0.00600	1	04/27/2022 14:16	WG1854729
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	04/27/2022 14:16	WG1854729
1-Methylnaphthalene	ND		0.0200	1	04/27/2022 14:16	WG1854729
2-Methylnaphthalene	ND		0.0200	1	04/27/2022 14:16	WG1854729
Naphthalene	ND		0.0200	1	04/27/2022 14:16	WG1854729
Pyrene	ND		0.00600	1	04/27/2022 14:16	WG1854729
(S) p-Terphenyl-d14	104		23.0-120		04/27/2022 14:16	WG1854729
(S) Nitrobenzene-d5	87.6		14.0-149		04/27/2022 14:16	WG1854729
(S) 2-Fluorobiphenyl	83.9		34.0-125		04/27/2022 14:16	WG1854729

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3785705-1 04/27/22 13:21

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

L1485076-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1485076-03 04/27/22 14:57 • (DUP) R3785705-7 04/27/22 15:02

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	ND	ND	1	2.56		20

L1485076-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1485076-12 04/27/22 15:43 • (DUP) R3785705-8 04/27/22 15:48

	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) R3785705-2 04/27/22 13:28

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	9.96	99.6	80.0-120	

L1485076-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1485076-01 04/27/22 14:25 • (MS) R3785705-3 04/27/22 14:31 • (MSD) R3785705-4 04/27/22 14:36

	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	16.1	18.0	79.0	88.1	1	75.0-125			10.6	20

L1485076-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1485076-01 04/27/22 14:25 • (MS) R3785705-5 04/27/22 14:41

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	639	ND	622	97.3	50	75.0-125	

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

L1484902-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1484902-07 04/23/22 10:00 • (DUP) R3784299-2 04/23/22 10:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.87	7.88	1	0.127		1

Sample Narrative:

OS: 7.87 at 21.4C

DUP: 7.88 at 21.4C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1484990-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1484990-03 04/23/22 10:00 • (DUP) R3784299-3 04/23/22 10:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.40	7.40	1	0.000		1

Sample Narrative:

OS: 7.4 at 20.7C

DUP: 7.4 at 20.7C

Laboratory Control Sample (LCS)

(LCS) R3784299-1 04/23/22 10:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	9.93	99.3	99.0-101	

Sample Narrative:

LCS: 9.93 at 20.8C

L1485076-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1485076-06 04/26/22 10:00 • (DUP) R3785027-2 04/26/22 10:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	pH	su		%		%
pH	7.71	7.70	1	0.130		1

Sample Narrative:

OS: 7.71 at 19.9C

DUP: 7.7 at 20C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1485076-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1485076-11 04/26/22 10:00 • (DUP) R3785027-3 04/26/22 10:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	pH	su		%		%
pH	7.62	7.62	1	0.000		1

Sample Narrative:

OS: 7.62 at 20.3C

DUP: 7.62 at 20.3C

Laboratory Control Sample (LCS)

(LCS) R3785027-1 04/26/22 10:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	9.95	99.5	99.0-101	

Sample Narrative:

LCS: 9.95 at 20.1C

Method Blank (MB)

(MB) R3784683-1 04/25/22 11:00

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

L1485055-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1485055-02 04/25/22 11:00 • (DUP) R3784683-3 04/25/22 11:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	4940	4930	1	0.203		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1485058-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1485058-02 04/25/22 11:00 • (DUP) R3784683-4 04/25/22 11:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	2810	2900	1	3.33		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3784683-2 04/25/22 11:00

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	275	102	85.0-115	

Sample Narrative:

LCS: at 25C



Method Blank (MB)

(MB) R3785756-1 04/27/22 18:25

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

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3785756-2 04/27/22 18:28

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	101	101	80.0-120	
Cadmium	100	95.6	95.6	80.0-120	
Copper	100	98.0	98.0	80.0-120	
Lead	100	96.4	96.4	80.0-120	
Nickel	100	97.5	97.5	80.0-120	
Selenium	100	96.3	96.3	80.0-120	
Silver	20.0	18.3	91.3	80.0-120	
Zinc	100	92.8	92.8	80.0-120	

L1485076-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1485076-03 04/27/22 18:31 • (MS) R3785756-5 04/27/22 18:39 • (MSD) R3785756-6 04/27/22 18:41

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	100	170	272	245	102	75.1	1	75.0-125			10.5	20
Cadmium	100	ND	100	102	99.9	102	1	75.0-125			1.91	20
Copper	100	12.5	113	112	101	99.5	1	75.0-125			0.863	20
Lead	100	5.58	107	108	101	103	1	75.0-125			1.57	20
Nickel	100	17.9	122	120	104	102	1	75.0-125			1.55	20
Selenium	100	ND	97.6	94.5	97.6	94.5	1	75.0-125			3.26	20
Silver	20.0	ND	19.4	19.7	96.9	98.5	1	75.0-125			1.66	20
Zinc	100	26.5	116	115	89.8	89.0	1	75.0-125			0.718	20

Method Blank (MB)

(MB) R3786108-1 04/28/22 12:16

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) R3786108-2 04/28/22 12:18 • (LCSD) R3786108-3 04/28/22 12:21

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	0.975	0.957	97.5	95.7	80.0-120			1.83	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3784630-1 04/24/22 23:52

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

Laboratory Control Sample (LCS)

(LCS) R3784630-2 04/24/22 23:55

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	92.4	92.4	80.0-120	

L1485076-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1485076-03 04/24/22 23:59 • (MS) R3784630-5 04/25/22 00:09 • (MSD) R3784630-6 04/25/22 00:12

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	4.32	96.3	97.7	91.9	93.3	5	75.0-125			1.46	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3784531-1 04/24/22 16:18

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

Laboratory Control Sample (LCS)

(LCS) R3784531-2 04/24/22 16:22

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	94.6	94.6	80.0-120	

L1485173-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1485173-03 04/24/22 16:25 • (MS) R3784531-5 04/24/22 16:35 • (MSD) R3784531-6 04/24/22 16:38

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	99.8	17.6	106	110	88.5	91.9	5	75.0-125			3.15	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3784867-2 04/25/22 06:16

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)	94.8			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3784867-1 04/25/22 05:17

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	6.67	121	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			103	77.0-120	

L1485076-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1485076-03 04/25/22 06:36 • (MS) R3784867-3 04/25/22 14:36 • (MSD) R3784867-4 04/25/22 14:56

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.56	0.605	5.78	6.26	93.1	104	1.01	10.0-151			7.97	28
(S) a,a,a-Trifluorotoluene(FID)					101	103		77.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3784556-3 04/23/22 19:52

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	112			75.0-131
(S) 4-Bromofluorobenzene	96.8			67.0-138
(S) 1,2-Dichloroethane-d4	108			70.0-130

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

(LCS) R3784556-1 04/23/22 18:36 • (LCSD) R3784556-2 04/23/22 18:55

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	0.115	0.114	92.0	91.2	70.0-123			0.873	20
Toluene	0.125	0.128	0.127	102	102	75.0-121			0.784	20
Ethylbenzene	0.125	0.127	0.129	102	103	74.0-126			1.56	20
Xylenes, Total	0.375	0.367	0.371	97.9	98.9	72.0-127			1.08	20
1,2,4-Trimethylbenzene	0.125	0.109	0.111	87.2	88.8	70.0-126			1.82	20
1,3,5-Trimethylbenzene	0.125	0.117	0.114	93.6	91.2	73.0-127			2.60	20
(S) Toluene-d8				111	108	75.0-131				
(S) 4-Bromofluorobenzene				96.6	95.8	67.0-138				
(S) 1,2-Dichloroethane-d4				107	107	70.0-130				

L1485076-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1485076-01 04/24/22 01:43 • (MS) R3784556-4 04/24/22 02:59 • (MSD) R3784556-5 04/24/22 03:18

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	2.48	0.931	2.93	2.93	80.6	80.6	20	10.0-149			0.000	37
Toluene	2.48	55.3	53.1	52.7	0.000	0.000	20	10.0-156	E V	E V	0.756	38
Ethylbenzene	2.48	12.6	13.9	14.5	52.4	76.6	20	10.0-160			4.23	38
Xylenes, Total	7.43	288	278	289	0.000	13.5	20	10.0-160	V		3.88	38
1,2,4-Trimethylbenzene	2.48	50.6	47.5	47.6	0.000	0.000	20	10.0-160	V	V	0.210	36
1,3,5-Trimethylbenzene	2.48	49.2	46.0	46.2	0.000	0.000	20	10.0-160	V	V	0.434	38
(S) Toluene-d8					112	111		75.0-131				
(S) 4-Bromofluorobenzene					123	132		67.0-138				
(S) 1,2-Dichloroethane-d4					105	105		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) R3785861-1 04/28/22 03:01

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	0.837	⬇	0.274	4.00
(S) o-Terphenyl	67.4			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3785861-2 04/28/22 03:19

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	33.4	66.8	50.0-150	
(S) o-Terphenyl			87.1	18.0-148	

L1485077-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1485077-01 04/28/22 07:08 • (MS) R3785861-3 04/28/22 07:21 • (MSD) R3785861-4 04/28/22 07:35

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	49.4	230	220	238	0.000	16.2	10	50.0-150	⬇	⬇	7.86	20
(S) o-Terphenyl					102	119		18.0-148				

Sample Narrative:

OS: Surrogate failure due to matrix interference

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3785928-1 04/27/22 09:38

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	88.7			14.0-149
(S) 2-Fluorobiphenyl	85.1			34.0-125

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3785928-2 04/27/22 09:57

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0668	83.5	50.0-120	
Anthracene	0.0800	0.0654	81.8	50.0-126	
Benzo(a)anthracene	0.0800	0.0674	84.3	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0720	90.0	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0707	88.4	49.0-125	
Benzo(a)pyrene	0.0800	0.0624	78.0	42.0-120	
Chrysene	0.0800	0.0710	88.8	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0702	87.8	47.0-125	
Fluoranthene	0.0800	0.0697	87.1	49.0-129	
Fluorene	0.0800	0.0692	86.5	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0680	85.0	46.0-125	
1-Methylnaphthalene	0.0800	0.0680	85.0	51.0-121	
2-Methylnaphthalene	0.0800	0.0643	80.4	50.0-120	
Naphthalene	0.0800	0.0693	86.6	50.0-120	
Pyrene	0.0800	0.0680	85.0	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R3785928-2 04/27/22 09:57

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
(S) p-Terphenyl-d14			103	23.0-120	
(S) Nitrobenzene-d5			93.8	14.0-149	
(S) 2-Fluorobiphenyl			89.7	34.0-125	

L1484853-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1484853-01 04/27/22 10:17 • (MS) R3785928-3 04/27/22 10:37 • (MSD) R3785928-4 04/27/22 10:57

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	0.0534	0.0547	66.8	68.4	1	14.0-127			2.41	27
Anthracene	0.0800	ND	0.0520	0.0558	65.0	69.8	1	10.0-145			7.05	30
Benzo(a)anthracene	0.0800	ND	0.0533	0.0594	66.6	74.3	1	10.0-139			10.8	30
Benzo(b)fluoranthene	0.0800	ND	0.0554	0.0587	69.3	73.4	1	10.0-140			5.78	36
Benzo(k)fluoranthene	0.0800	ND	0.0551	0.0588	68.9	73.5	1	10.0-137			6.50	31
Benzo(a)pyrene	0.0800	ND	0.0528	0.0576	66.0	72.0	1	10.0-141			8.70	31
Chrysene	0.0800	ND	0.0570	0.0610	71.3	76.3	1	10.0-145			6.78	30
Dibenz(a,h)anthracene	0.0800	ND	0.0547	0.0583	68.4	72.9	1	10.0-132			6.37	31
Fluoranthene	0.0800	ND	0.0553	0.0600	69.1	75.0	1	10.0-153			8.15	33
Fluorene	0.0800	ND	0.0546	0.0579	68.3	72.4	1	11.0-130			5.87	29
Indeno(1,2,3-cd)pyrene	0.0800	ND	0.0535	0.0581	66.9	72.6	1	10.0-137			8.24	32
1-Methylnaphthalene	0.0800	ND	0.0654	0.0718	68.9	76.9	1	10.0-142			9.33	28
2-Methylnaphthalene	0.0800	ND	0.0664	0.0766	62.3	75.0	1	10.0-137			14.3	28
Naphthalene	0.0800	ND	0.0708	0.0778	67.1	75.9	1	10.0-135			9.42	27
Pyrene	0.0800	ND	0.0522	0.0565	65.3	70.6	1	10.0-148			7.91	35
(S) p-Terphenyl-d14					88.7	88.8		23.0-120				
(S) Nitrobenzene-d5					86.2	82.6		14.0-149				
(S) 2-Fluorobiphenyl					79.7	76.4		34.0-125				

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

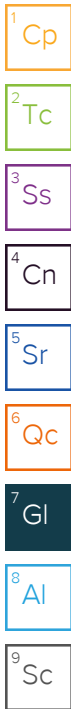
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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.
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
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.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

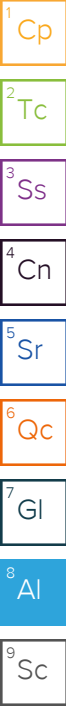
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

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

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



Caerus Oil & Gas LLC
143 Diamond Avenue
Parachute, CO 81635
970-285-9606

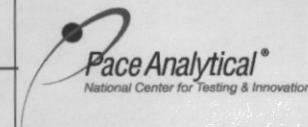
Billing Information:

Same as above

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 2



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



Report to:
bmiddleton@caerusoilandgas.com

Email To:
bmiddleton@caerusoilandgas.com

Project
Description: YCF 35-33-1

City/State
Collected: Rio Blanco, CO

Phone: (970) 468-4514
Fax:

Client Project #
YCF 35-33-1

Lab Project #
YCF 35-33-1

Collected by (print):
K. MORELAND

Site/Facility ID #
YCF 35-33-1

P.O. #
YCF 35-33-1

Collected by (signature):

Rush? (Lab MUST Be Notified)

Quote #

Immediately
Packed on Ice N ☐ Y ☒

☐ Same Day ☐ Five Day
☐ Next Day ☐ 5 Day (Rad Only)
☐ Two Day ☐ 10 Day (Rad Only)
☐ Three Day

Date Results Needed

Standard TAT

No.
of
Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TPH- GRO, DRO, ORO	BTEX	TABLE 915-1- PAH's	SAR, EC, pH, Boron	TABLE 915-1- Metals							
20220419-YCF 35-33-1 (PDC A)	GRAB	SS	1'	4/19/22	1045	3	X	X	X	X	X							-01
20220419-YCF 35-33-1 (PDC A) @ 2'			2'		1130													-02
20220419-YCF 35-33-1 (PDC B)			1'		1048													-03
20220419-YCF 35-33-1 (PDC B) @ 2'			2'		1135													-04
20220419-YCF 35-33-1 (PDC C)			1'		1100													-05
20220419-YCF 35-33-1 (PDC C) @ 2'			2'		1140													-06
20220419-YCF 35-33-1 (PDC D)			1'		1105													-07
20220419-YCF 35-33-1 (PDC D) @ 2'			2'		1150													-08
20220419-YCF 35-33-1 (PDC E)			1'		1110													
20220419-YCF 35-33-1 (PDC E) @ 2'			2'		1200													

* 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 #

pH Temp

Flow Other

Sample Receipt Checklist

COC Seal Present/Intact: ☒ Y ☐ N
COC Signed/Accurate: ☒ Y ☐ N
Bottles arrive intact: ☒ Y ☐ N
Correct bottles used: ☒ Y ☐ N
Sufficient volume sent: ☒ Y ☐ N
If Applicable
VOA Zero Headspace: ☐ Y ☐ N
Preservation Correct/Checked: ☐ Y ☐ N

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Trip Blank Received: Yes ☒ No
HCL / MeOH
TBR

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp: °C Bottles Received: 38

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date: 4/21/22 Time: 0930

Hold:

Condition:

NCF 10

Caerus Oil & Gas LLC
143 Diamond Avenue
Parachute, CO 81635
970-285-9606

Billing Information:

Same as above

Report to:
bmiddleton@caerusoilandgas.com

Project Description: **YCF 35-33-1**

Phone: (970)-418-4514	Client Project #
Fax:	YCF 35-33-1

Collected by (print): K. MORRIS	Site/Facility ID # YCF 35-33-1
------------------------------------	-----------------------------------

Collected by (signature): K. M. ...

Immediately
Packed on Ice N ☐ Y ☒

Rush? (Lab MUST Be)
☐ Same Day ☐ Five Days
☐ Next Day ☐ 5 Days
☐ Two Day ☐ 10 Days
☐ Three Day

Email To: bmiddleton@caerusoilandgas.com

City/State
Collected: **Rio Blanco, CO**

	Lab Project # YCF 35-33-1
--	-------------------------------------

P.O. #	YCF 35-33-1
--------	-------------

Notified)	Quote #
Day	
(Rad Only)	Date Results Needed
ay (Rad Only)	Standard TAT

[illegible]

Chain of Custody Page 2 of 2



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L#	485076
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Table #

Acctnum:
Template:

Prelogin:

TSR:
PB:

Shipped Via:	
Remarks	Sample # (lab only)

[illegible]

* Matrix:

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

Remarks:		pH _____ Temp _____
		Flow _____ Other _____
Samples returned via:		
<input type="checkbox"/> UPS	<input type="checkbox"/> FedEx	<input type="checkbox"/> Courier
Tracking #		

<u>Sample Receipt Checklist</u>			
COC Seal Present/Intact:	<input checked="" type="checkbox"/> NP	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N
COC Signed/Accurate:		<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N
Bottles arrive intact:		<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N
Correct bottles used:		<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N
Sufficient volume sent:		<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N
<u>If Applicable</u>			
VOA Zero Headspace:		<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N

Relinquished by : (Signature)

[Signature]

Relinquished by : (Signature)

[Signature]

Relinquished by : (Signature)

Date:	Time:
4/20/12	1230
Date:	Time:
4/20/12	1500
Date:	Time:

Received by: (Signature)

Received by: (Signature)

Received for lab by: (Signature)

Trip Blank Received: Yes/No
 HCL/MeOH
 TBR
 Temp: °C
 Bottles Received:
 Date: Time:

Preservation Correct/Checked: <input type="checkbox"/> Y <input type="checkbox"/> N	
If preservation required by Login: Date/Time	
Hold:	Condition: NCF / (OK)