



VIA ELECTRONIC MAIL –

January 4, 2022

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

**Subject: Dry Gas Release Assessment
SGV Federal Dry Gas Release
South Grand Valley
Garfield County, Colorado**

Dear Mr. Janicek:

WSP USA Inc. (WSP), on behalf of Caerus Oil and Gas LLC (Caerus), has completed soil screening and initial characterization confirmation soil sampling associated with the South Grand Valley (SGV) Federal Pipeline Release (Site). The initial characterization investigation and confirmation soil samples were collected pursuant condition of approvals (COA) listed in the Colorado Oil and Gas Conservation Commission (COGCC) Spill/Release Report (Initial/w Supplemental) Form 19 Document Number 402899262. The Site is located in Caerus' SGV area of operation in Garfield County, Colorado (Figure 1).

SOIL SAMPLING ACTIVITIES – SGV FEDERAL DRY GAS RELEASE

On December 14, 2021, WSP personnel completed initial soil screening and collected confirmation samples from, and around the point of release (POR) associated with the November 18, 2021 dry gas release within the right-of-way (ROW) of the SGV Federal pipeline. The confirmation soil sampling was conducted by a WSP geologist who inspected the soil for the presence or absence of petroleum hydrocarbon odor/staining. Using a spade shovel, the geologist screened the length of the previously excavated pipeline ROW for hydrocarbon impacts on 10-foot lateral intervals. The areas within the excavation which exhibited the highest degree of impact based on visual and olfactory observations were field screened using a photoionization detector (PID) to monitor for the presence or absence of volatile organic vapors in the soil headspace. The screening depths within the excavation were 7 feet below ground surface (bgs). In order to determine the POR, the section of pipeline under investigation was isolated and was then pressurized with compressed air to identify the POR. The POR was located along the northern edge of the open ROW excavation at a latitude and longitude of 39.377994, -108.056034. Based on PID field screening values, and onsite observations, one soil sample was collected immediately below the SGV Federal pipeline POR at 7 feet bgs (20211214-SGVF-(POR)@7') and three point of compliance (POC) samples (20211214-SGVF-(POC N1)@7', 20211214-SGVF-(POC M1)@7', and 20211214-SGVF-(POCS1)@7') were collected from the north, middle, and southern areas of the open excavation. At least six inches of soil was removed from the base of the excavation prior to collecting each of the confirmation soil samples to ensure fresh representative samples were collected. All confirmation soil samples were 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 Protection of Groundwater Soil Screening Level Concentrations (PGSSLC) milligrams per kilogram (mg/kg) Risk Based (R) and Maximum Concentration Level (MCL) Based (M). The soil screening results are summarized in the enclosed Table 1. A photolog of the investigative soil sampling and field screened areas associated with the SGV Federal Release is included in Enclosure A. Figure 2 illustrates the ROW excavation extent, POR, and POC confirmation soil sample locations.

WSP USA
820 MEGAN AVENUE, UNIT B
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wsp.com



ANALYTICAL RESULTS – SGV FEDERAL DRY GAS RELEASE

Laboratory analytical results of all confirmation soil samples collected from the pipeline excavation indicate exceedances of COGCC Table 915-1 PGSSLC (M) for arsenic, barium, benzene, toluene. Arsenic exceedances range from 2.92 mg/kg in soil sample 20211214-SGVF-(POR)@7' to 4.02 mg/kg in soil sample 20211214-SGVF-(POCS1)@7'. Barium exceedances range from 180 mg/kg in soil sample 20211214-SGVF-(POC M1)@7' to 601 mg/kg in soil sample 20211214-SGVF-(POR)@7'. Benzene concentrations ranged from 0.0478 mg/kg in soil sample 20211214-SGVF-(POC N1)@7' to 8.44 mg/kg in soil sample 20211214-SGVF-(POR)@7'. Toluene concentrations ranged from 0.728 mg/kg in soil sample 20211214-SGVF-(POC N1)@7' to 56.7 mg/kg in soil sample 20211214-SGVF-(POR)@7'. Additionally, all confirmation soil samples indicate exceedances COGCC Table 915-1 PGSSLC (R) for 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene. Concentrations of 1,2,4-trimethylbenzene ranged from 2.18 mg/kg in soil sample 20211214-SGVF-(POC N1)@7' to 48.3 mg/kg in soil sample 20211214-SGVF-(POC M1)@7'. Concentrations of 1,3,5-trimethylbenzene ranged from 1.75 mg/kg in soil sample 20211214-SGVF-(POC N1)@7' to 34.1 mg/kg in soil sample 20211214-SGVF-(POR)@7'. Concentrations of 1-methylnaphthalene ranged from 0.480 mg/kg in sample 20211214-SGVF-(POC N1)@7' to 21.8 mg/kg in soil sample 20211214-SGVF-(POC M1)@7'. Concentrations of 2-methylnaphthalene ranged from 0.527 mg/kg in soil sample 20211214-SGVF-(POC N1)@7' to 52.6 mg/kg in soil sample 20211214-SGVF-(POC M1)@7'. Naphthalene concentrations ranged from 0.0611 mg/kg in soil sample 20211214-SGVF-(POC N1)@7' to 16.3 mg/kg in soil sample 20211214-SGVF-(POC M1)@7'. The POR confirmation soil sample 20211214-SGVF-(POR)@7' and the POC soil sample 20211214-SGVF-(POC M1)@7' exceeded COGCC Table 915-1 PGSSLC (M) for ethylbenzene and total xylenes. Ethylbenzene concentrations were 14.7 mg/kg and 4.09 mg/kg, respectively. Total xylene concentrations were 142 mg/kg and 64.8 mg/kg, respectively. Confirmation soil sample 20211214-SGVF-(POC M1)@7' exceeded COGCC Table 915-1 PGSSLC (R) for fluorene with a concentration of 1.80 mg/kg. The POR confirmation soil sample 20211214-SGVF-(POR)@7' indicated an exceedance of COGCC Table 915-1 for boron with 2.04 milligram/l (mg/l). All confirmation soil samples indicated exceedances of COGCC Table 915-1 Cleanup Concentrations (CC) for sodium absorption ratio (SAR) and total petroleum hydrocarbon (TPH). SAR exceedances ranged from 12.4 in soil sample 20211214-SGVF-(POC M1)@7' to 33.80 in soil sample 20211214-SGVF-(POC N1)@7'. TPH exceedances ranged from 653 mg/kg in soil sample 20211214-SGVF-(POC N1)@7' to 8,103 mg/kg in soil sample 20211214-SGVF-(POC M1)@7'. Confirmation soil samples 20211214-SGVF-(POC N1)@7', 20211214-SGVF-(POC M1)@7', and 20211214-SGVF-(POCS1)@7' exceeded the COGCC Table 915-1 CC for electrical conductivity (EC) with concentrations ranging from 4.540 millimhos per centimeter (mmhos/cm) in soil sample 20211214-SGVF-(POC M1)@7' to 5.200 mmhos/cm in soil sample 20211214-SGVF-(POC N1)@7'.

All other analytes were either below the laboratory detection limit or within the COGCC Table 915-1 PGSSLCs. The soil analytical results are summarized in the enclosed Table 1. The laboratory analytical report is provided in Enclosure B.

CONCLUSIONS – SGV FEDERAL DRY GAS RELEASE

Based on the analytical data provided from the initial assessment sampling, there are remaining COGCC Table 915-1 exceedances of arsenic, barium, boron, SAR, EC, TPH, benzene, toluene, 1,2,4- trimethylbenzene, 1,3,5 trimethylbenzene, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene, ethylbenzene, total xylenes, fluorene associated with the recent pipeline dry gas release. However, exceedances of arsenic are documented within the pipeline excavation ROW but are within background concentrations documented in background soil samples located at the adjacent pad, SGV 1F (COGCC Facility ID: 334367). The geographic proximity of the two locations is depicted on the attached Figure 3 along with the associated background sample locations.

WSP recommends that Caerus continue with excavation and source removal of impacted soils immediately beneath the POR, and to the north and south directions within the ROW corridor. Additional excavation and source removal should extend beyond the current excavation base (6.5 feet bgs) to remove vertical impacts from the dry gas release. Lateral excavation in all cardinal directions will be based on observations when removing the source vertically from the pipeline ROW. Following the excavation and source removal activities, additional confirmation soils samples will be collected along the ROW excavation base and sidewalls to confirm contaminants have been removed. WSP



recommends that Caerus request the COGGC Director to analyze all future soil samples under a reduced analytical suite of barium, boron, SAR, EC, TPH, benzene, toluene, ethylbenzene, total xylenes, 1,2,4- trimethylbenzene, 1,3,5 trimethylbenzene, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene, and fluorene.

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,

A handwritten signature in blue ink, appearing to read 'D. Held'.

Dustin Held
Sr. Consultant, Environmental Geologist

A handwritten signature in blue ink, appearing to read 'Parker Coit'.

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

Encl.

FIGURES



LEGEND

 SITE LOCATION

IMAGE COURTESY OF ESRI/USGS

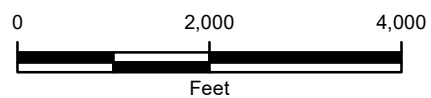


FIGURE 1
SITE LOCATION MAP
SGV FEDERAL
NWSE SEC 1-T8S-R96W
GARFIELD COUNTY, COLORADO
CAERUS OIL AND GAS LLC



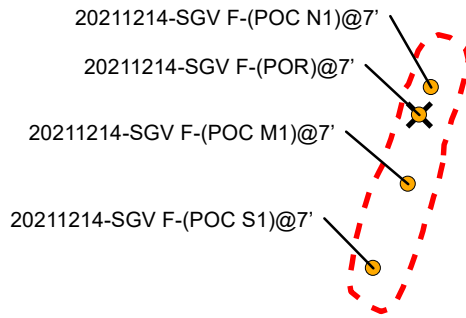


IMAGE COURTESY OF ESRI (MAXAR 8/30/2018)

LEGEND



RELEASE LOCATION



SOIL SAMPLE



EXCAVATION EXTENT (12/14/2021)

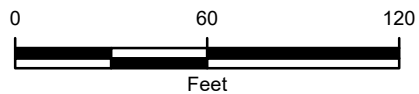
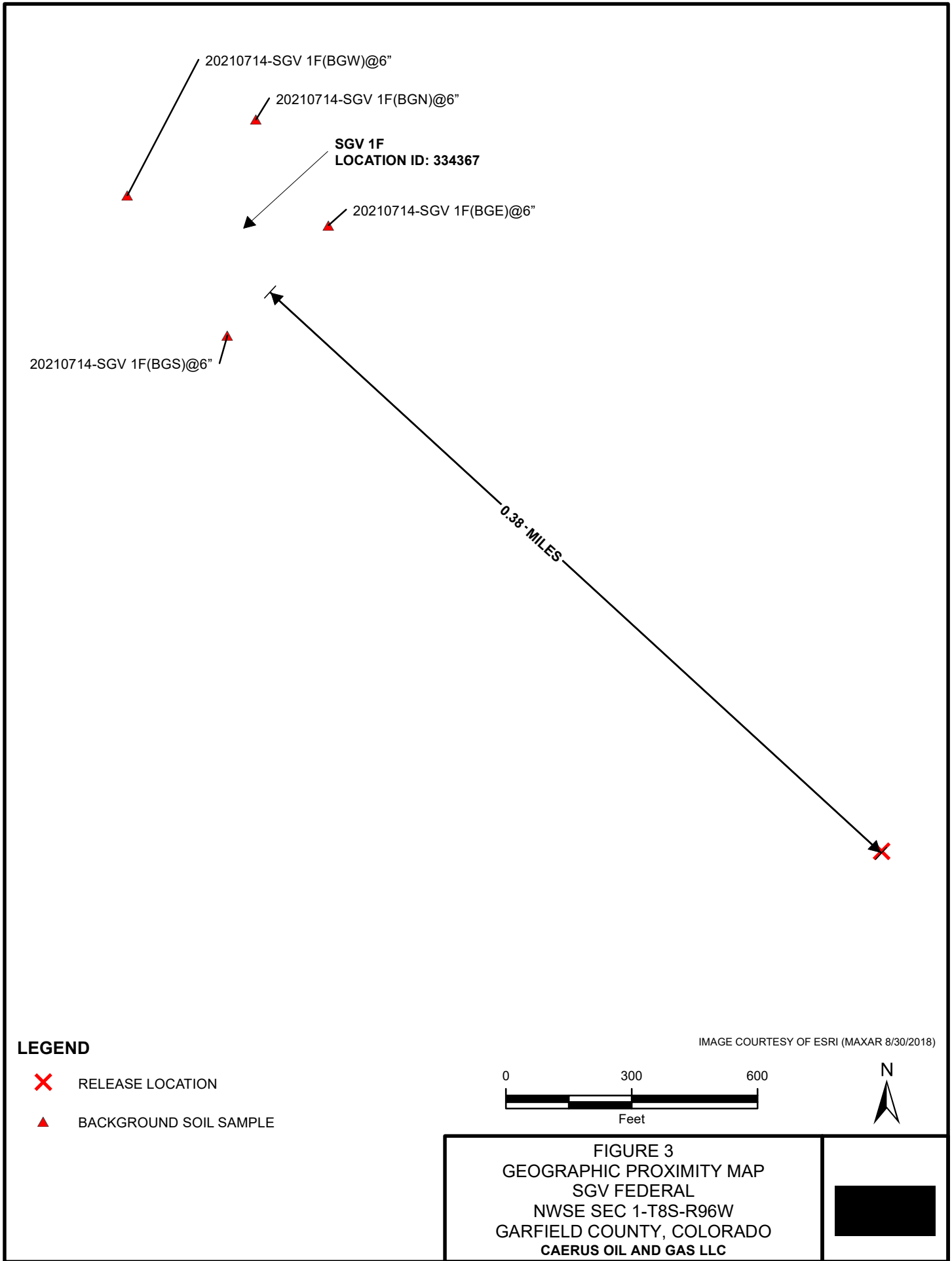


FIGURE 2
SITE MAP
SGV FEDERAL
NWSE SEC 1-T8S-R96W
GARFIELD COUNTY, COLORADO
CAERUS OIL AND GAS LLC





TABLE

TABLE 1

SOIL ANALYTICAL RESULTS
SGV FEDERAL DRY GAS RELEASE
GARFIELD COUNTY, 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			
				20211214-SGVF-(POR)@7'	20211214-SGVF-(POC N1)@7'	20211214-SGVF-(POC M1)@7'	20211214-SGVF-(POC S1)@7'
Sample Date				12/14/2021	12/14/2021	12/14/2021	12/14/2021
Sample Depth (feet)				7	7	7	7
Sample Type				Confirmation	Confirmation	Confirmation	Confirmation
Arsenic	0.68	0.29 (M)	mg/kg	2.92	3.55	3.65	4.02
Barium	15,000	82 (M)	mg/kg	601	238	180	279
Boron	2	2	mg/l	2.04	1.97	1.04	1.66
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	8.56	11.8	10.7	10.7
Lead	400	14 (M)	mg/kg	6.53	7.43	7.78	7.45
Nickel	1,500	26 (R)	mg/kg	11.3	19.0	12.6	12.4
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	20.4	26.7	29.9	28.1
EC	<4	<4	mmhos/cm	3.430	5.200	4.540	5.070
pH	6 - 8.3	6 - 8.3	SU	7.83	7.96	7.69	7.70
SAR	<6	<6	unitless	26.8	33.8	12.4	26.5
TPH-GRO			mg/kg	2,750	161	2,280	490
TPH-DRO			mg/kg	181	383	5,150	1,660
TPH-ORO			mg/kg	23.9	109	673	403
TPH	500	500	mg/kg	2,954.9	653	8,103	2,553
Benzene	1.2	0.0026 (M)	mg/kg	8.44	0.0478	0.448	0.236
Toluene	490	0.69 (M)	mg/kg	56.7	0.728	14.6	1.24
Ethylbenzene	5.8	0.78 (M)	mg/kg	14.7	0.212	4.09	0.494
Total Xylenes	58	9.9 (M)	mg/kg	142	5.89	64.8	8.61
1,2,4-trimethylbenzene	30	0.0081 (R)	mg/kg	42.3	2.18	48.3	4.97
1,3,5-trimethylbenzene	27	0.0087 (R)	mg/kg	34.1	1.75	33.1	3.73
Acenaphthene	1,800	5.8 (R)	mg/kg	0.206	0.0180	0.668	ND
Anthracene	360	0.55 (R)	mg/kg	ND	ND	ND	0.114
Benzo(A)anthracene	1.1	0.011 (R)	mg/kg	ND	ND	ND	ND
Benzo(B)fluoranthene	1.1	0.3 (R)	mg/kg	0.00749	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	0.0138	ND	0.0405	0.00912
Dibenzo(A,H)anthracene	0.11	0.096 (R)	mg/kg	ND	ND	ND	ND
Fluoranthene	240	8.9 (R)	mg/kg	0.0210	ND	0.0844	0.0171
Fluorene	240	0.54 (R)	mg/kg	0.501	0.0599	1.80	0.276
Indeno(1,2,3,c-d)pyrene	1.1	0.98 (R)	mg/kg	ND	ND	ND	ND
1-methylnaphthalene	18	0.006 (R)	mg/kg	6.71	0.480	21.8	3.21
2-methylnaphthalene	24	0.019 (R)	mg/kg	15.5	0.527	52.6	8.53
Naphthalene	2	0.0038 (R)	mg/kg	2.45	0.0611	16.3	1.70
Pyrene	180	1.3 (R)	mg/kg	0.0135	ND	0.0398	0.0105

NOTES:
BOLD - indicates result exceeds the COGCC protection of groundwater soil screening level concentrations
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)
POR - point of release

TABLE 1

SOIL ANALYTICAL RESULTS

SGV FEDERAL DRY GAS RELEASE

GARFIELD COUNTY, COLORADO

CAERUS OIL AND GAS LLC

PARAMETER	COGCC RESIDENTIAL SOIL SCREENING LEVEL CONCENTRATIONS	COGCC PROTECTION OF GROUNDWATER SOIL SCREENING LEVEL CONCENTRATIONS	BACKGROUND SOIL SAMPLES			
			20210714-SGV 1F (BGN) @ 6"	20210714-SGV 1F (BGS) @ 6"	20210714-SGV 1F (BGE) @ 6"	20210714-SGV 1F (BGW) @ 6"
Sample Date			7/14/2021	7/14/2021	7/14/2021	7/14/2021
Sample Depth (feet)			0.5	0.5	0.5	0.5
Sample Type			Background	Background	Background	Background
Arsenic	0.68	0.29 (M)	3.67	5.01	5.23	5.03
Barium	15,000	82 (M)	189	196	234	198
Boron	2	2	0.485	0.425	0.375	1.04
Cadmium	71	0.38 (M)	0.344	0.350	0.286	0.354
Chromium (VI)	0.3	0.00067 (R)	ND	ND	ND	ND
Copper	3,100	46 (M)	13.3	17.3	13.9	14.7
Lead	400	14 (M)	11.2	12.5	7.60	9.93
Nickel	1,500	26 (R)	16.0	19.9	15.9	21.4
Selenium	390	0.26 (M)	0.833	1.19	3.17	2.02
Silver	390	0.8 (R)	ND	ND	ND	ND
Zinc	23,000	370 (R)	38.7	44.8	30.4	38.5
EC	<4	<4	0.401	0.188	0.244	0.548
pH	6 - 8.3	6 - 8.3	7.22	8.37	8.31	8.01
SAR	<6	<6	0.0665	0.0370	0.0514	0.224
TPH-GRO			NA	NA	NA	NA
TPH-DRO			NA	NA	NA	NA
TPH-ORO			NA	NA	NA	NA
TPH	500	500	NA	NA	NA	NA
Benzene	1.2	0.0026 (M)	ND	0.000470	ND	0.000525
Toluene	490	0.69 (M)	0.0270	0.00213	0.00329	0.00280
Ethylbenzene	5.8	0.78 (M)	ND	ND	0.000742	ND
Total Xylenes	58	9.9 (M)	0.127	0.00379	0.00577	0.00518
1,2,4-trimethylbenzene	30	0.0081 (R)	0.0292	ND	ND	ND
1,3,5-trimethylbenzene	27	0.0087 (R)	ND	ND	ND	ND
Acenaphthene	1,800	5.8 (R)	ND	ND	ND	ND
Anthracene	360	0.55 (R)	ND	ND	ND	ND
Benzo(A)anthracene	1.1	0.011 (R)	0.00327	ND	ND	ND
Benzo(B)fluoranthene	1.1	0.3 (R)	ND	ND	ND	ND
Benzo(K)fluoranthene	11	2.9 (R)	ND	ND	ND	ND
Benzo(A)pyrene	0.11	0.24 (M)	ND	ND	ND	ND
Chrysene	110	9 (R)	ND	ND	ND	ND
Dibenzo(A,H)anthracene	0.11	0.096 (R)	ND	ND	ND	ND
Fluoranthene	240	8.9 (R)	ND	ND	ND	ND
Fluorene	240	0.54 (R)	ND	ND	ND	ND
Indeno(1,2,3,c-d)pyrene	1.1	0.98 (R)	ND	ND	ND	ND
1-methylnaphthalene	18	0.006 (R)	ND	ND	ND	ND
2-methylnaphthalene	24	0.019 (R)	ND	ND	ND	ND
Naphthalene	2	0.0038 (R)	ND	ND	ND	ND
Pyrene	180	1.3 (R)	ND	ND	ND	ND

NOTES:

BOLD - indicates result exceeds the COGCC protection of groundwater soil screening level concentrations

COGCC - Colorado Oil and Gas Conservation Commission

EC- electrical conductivity

mg/l - milligrams per liter

mg/kg - milligrams per kilogram

nmhos/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)

POR - point of release

ENCLOSURE A – SOIL SCREENING PHOTOLOG

PHOTOGRAPHIC LOG		
Caerus Oil and Gas LLC	SGV Federal Dry Gas Release	31403501.019




Photo No.	Date	
1	December 14, 2021	
SGV Federal Dry Gas Pipeline point of release (POR) daylighting, excavation overview. View south.		

Photo No.	Date	
2	December 14, 2021	
View of soil directly beneath POR. View north		



PHOTOGRAPHIC LOG		
Caerus Oil and Gas LLC	SGV Federal Dry Gas Release	31403501.019

Photo No.	Date	
3	December 14, 2021	
View of POR hole in pipeline (release coordinates longitude and latitude of 39.377994, -108.056034). View east		 A photograph showing a close-up of a green-painted metal pipeline. The surface is heavily corroded, with large areas of rust and peeling paint. A small, dark, irregular hole is visible in the center of the frame. A yellow measuring tape is visible on the left side of the pipe, and a person's arm is partially visible on the far left.

ENCLOSURE B – LABORATORY ANALYTICAL RESULTS

Caerus Oil and Gas

Sample Delivery Group: L1443286
Samples Received: 12/16/2021
Project Number: SGV F
Description: SGV Federal Dry Gas Release
Site: SGV F
Report To: Brett Middleton
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:



Kelly Mercer
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 National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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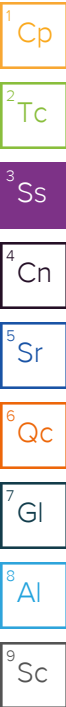


SAMPLE SUMMARY

20211214-SGVF-(POR)@7' L1443286-01 Solid

Collected by K. Moreland
Collected date/time 12/14/21 14:00
Received date/time 12/16/21 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1791873	1	12/22/21 19:17	12/22/21 19:17	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1793093	1	12/21/21 10:16	12/23/21 16:21	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1791954	1	12/20/21 10:00	12/20/21 11:23	PSN	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1791834	1	12/19/21 02:43	12/19/21 07:12	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1792189	1	12/20/21 17:22	12/22/21 09:35	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1791870	1	12/20/21 06:27	12/21/21 14:41	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1792191	5	12/20/21 17:45	12/20/21 21:18	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1792448	1000	12/17/21 16:48	12/20/21 20:51	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1791551	20	12/17/21 16:48	12/18/21 04:12	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1793599	100	12/17/21 16:48	12/23/21 03:06	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1794016	1	12/24/21 04:33	12/24/21 20:17	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1794001	1	12/24/21 02:44	12/24/21 16:45	ADF	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1794001	10	12/24/21 02:44	12/27/21 11:28	AMG	Mt. Juliet, TN



20211214-SGV F-(POC N1)@7' L1443286-02 Solid

Collected by K. Moreland
Collected date/time 12/14/21 14:20
Received date/time 12/16/21 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1791873	1	12/22/21 19:20	12/22/21 19:20	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1793093	1	12/21/21 10:16	12/23/21 16:26	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1791948	1	12/20/21 11:00	12/20/21 12:35	PSN	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1791834	1	12/19/21 02:43	12/19/21 07:12	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1792189	1	12/20/21 17:22	12/22/21 09:38	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1791870	1	12/20/21 06:27	12/21/21 14:44	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1792191	5	12/20/21 17:45	12/20/21 21:22	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1791624	100	12/17/21 16:48	12/18/21 19:03	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1791551	8	12/17/21 16:48	12/18/21 04:31	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1793599	8	12/17/21 16:48	12/23/21 03:25	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1794016	5	12/24/21 04:33	12/26/21 17:27	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1794001	1	12/24/21 02:44	12/24/21 13:24	ADF	Mt. Juliet, TN

20211214-SGV F-(POC M1)@7' L1443286-03 Solid

Collected by K. Moreland
Collected date/time 12/14/21 14:10
Received date/time 12/16/21 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1791873	1	12/22/21 19:23	12/22/21 19:23	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1793093	1	12/21/21 10:16	12/23/21 16:36	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1791948	1	12/20/21 11:00	12/20/21 12:35	PSN	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1791834	1	12/19/21 02:43	12/19/21 07:12	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1792189	1	12/20/21 17:22	12/22/21 09:41	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1791870	1	12/20/21 06:27	12/21/21 14:47	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1792191	5	12/20/21 17:45	12/20/21 21:25	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1791624	250	12/17/21 16:48	12/18/21 19:27	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1791551	20	12/17/21 16:48	12/18/21 04:50	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1794016	100	12/24/21 04:33	12/26/21 17:40	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1794001	1	12/24/21 02:44	12/24/21 14:24	ADF	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1794001	10	12/24/21 02:44	12/27/21 11:11	AMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1794001	50	12/24/21 02:44	12/27/21 15:15	AMG	Mt. Juliet, TN

SAMPLE SUMMARY

20211214-SGV F-(POC S1)@7' L1443286-04 Solid

Collected by
K. Moreland

Collected date/time
12/14/21 12:50

Received date/time
12/16/21 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1791873	1	12/22/21 19:25	12/22/21 19:25	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1793093	1	12/21/21 10:16	12/23/21 16:42	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1791948	1	12/20/21 11:00	12/20/21 12:35	PSN	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1791834	1	12/19/21 02:43	12/19/21 07:12	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1792189	1	12/20/21 17:22	12/22/21 09:44	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1791870	1	12/20/21 06:27	12/21/21 14:55	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1792191	5	12/20/21 17:45	12/20/21 21:28	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1791624	200	12/17/21 16:48	12/18/21 19:50	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1791551	20	12/17/21 16:48	12/18/21 05:09	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1793599	20	12/17/21 16:48	12/23/21 03:45	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1794016	20	12/24/21 04:33	12/24/21 22:01	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1794001	1	12/24/21 02:44	12/24/21 17:05	ADF	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1794001	10	12/24/21 02:44	12/27/21 11:46	AMG	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

CASE NARRATIVE

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



Kelly Mercer
Project Manager



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	26.8		1	12/22/2021 19:17	WG1791873

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	12/23/2021 16:21	WG1793093

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.83	T8	1	12/20/2021 11:23	WG1791954

Sample Narrative:

L1443286-01 WG1791954: 7.83 at 17.4C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	3430		10.0	1	12/19/2021 07:12	WG1791834

Sample Narrative:

L1443286-01 WG1791834: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	601		0.500	1	12/22/2021 09:35	WG1792189
Cadmium	ND		0.500	1	12/22/2021 09:35	WG1792189
Copper	8.56		2.00	1	12/22/2021 09:35	WG1792189
Lead	6.53		0.500	1	12/22/2021 09:35	WG1792189
Nickel	11.3		2.00	1	12/22/2021 09:35	WG1792189
Selenium	ND		2.00	1	12/22/2021 09:35	WG1792189
Silver	ND		1.00	1	12/22/2021 09:35	WG1792189
Zinc	20.4		5.00	1	12/22/2021 09:35	WG1792189

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

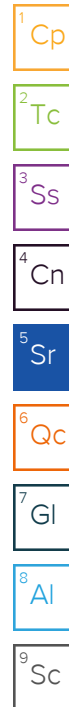
Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	2.04		0.200	1	12/21/2021 14:41	WG1791870

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	2.92		1.00	5	12/20/2021 21:18	WG1792191

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	2750		100	1000	12/20/2021 20:51	WG1792448
(S) a,a,a-Trifluorotoluene(FID)	90.5		77.0-120		12/20/2021 20:51	WG1792448



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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	8.44		0.0200	20	12/18/2021 04:12	WG1791551
Toluene	56.7		0.500	100	12/23/2021 03:06	WG1793599
Ethylbenzene	14.7		0.0500	20	12/18/2021 04:12	WG1791551
Xylenes, Total	142		0.650	100	12/23/2021 03:06	WG1793599
1,2,4-Trimethylbenzene	42.3		0.100	20	12/18/2021 04:12	WG1791551
1,3,5-Trimethylbenzene	34.1		0.100	20	12/18/2021 04:12	WG1791551
(S) Toluene-d8	98.3		75.0-131		12/18/2021 04:12	WG1791551
(S) Toluene-d8	96.3		75.0-131		12/23/2021 03:06	WG1793599
(S) 4-Bromofluorobenzene	115		67.0-138		12/18/2021 04:12	WG1791551
(S) 4-Bromofluorobenzene	105		67.0-138		12/23/2021 03:06	WG1793599
(S) 1,2-Dichloroethane-d4	98.3		70.0-130		12/18/2021 04:12	WG1791551
(S) 1,2-Dichloroethane-d4	103		70.0-130		12/23/2021 03:06	WG1793599

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	181		4.00	1	12/24/2021 20:17	WG1794016
C28-C36 Motor Oil Range	23.9		4.00	1	12/24/2021 20:17	WG1794016
(S) o-Terphenyl	76.2		18.0-148		12/24/2021 20:17	WG1794016

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	12/24/2021 16:45	WG1794001
Acenaphthene	0.206		0.00600	1	12/24/2021 16:45	WG1794001
Acenaphthylene	ND		0.00600	1	12/24/2021 16:45	WG1794001
Benzo(a)anthracene	ND		0.00600	1	12/24/2021 16:45	WG1794001
Benzo(a)pyrene	ND		0.00600	1	12/24/2021 16:45	WG1794001
Benzo(b)fluoranthene	0.00749		0.00600	1	12/24/2021 16:45	WG1794001
Benzo(g,h,i)perylene	ND		0.00600	1	12/24/2021 16:45	WG1794001
Benzo(k)fluoranthene	ND		0.00600	1	12/24/2021 16:45	WG1794001
Chrysene	0.0138		0.00600	1	12/24/2021 16:45	WG1794001
Dibenz(a,h)anthracene	ND		0.00600	1	12/24/2021 16:45	WG1794001
Fluoranthene	0.0210		0.00600	1	12/24/2021 16:45	WG1794001
Fluorene	0.501		0.00600	1	12/24/2021 16:45	WG1794001
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	12/24/2021 16:45	WG1794001
Naphthalene	2.45		0.0200	1	12/24/2021 16:45	WG1794001
Phenanthrene	0.357		0.00600	1	12/24/2021 16:45	WG1794001
Pyrene	0.0135		0.00600	1	12/24/2021 16:45	WG1794001
1-Methylnaphthalene	6.71		0.200	10	12/27/2021 11:28	WG1794001
2-Methylnaphthalene	15.5		0.200	10	12/27/2021 11:28	WG1794001
2-Chloronaphthalene	ND		0.0200	1	12/24/2021 16:45	WG1794001
(S) p-Terphenyl-d14	60.8		23.0-120		12/24/2021 16:45	WG1794001
(S) p-Terphenyl-d14	74.5		23.0-120		12/27/2021 11:28	WG1794001
(S) Nitrobenzene-d5	1870	J1	14.0-149		12/24/2021 16:45	WG1794001
(S) Nitrobenzene-d5	2220	J1	14.0-149		12/27/2021 11:28	WG1794001
(S) 2-Fluorobiphenyl	81.0		34.0-125		12/24/2021 16:45	WG1794001
(S) 2-Fluorobiphenyl	57.1		34.0-125		12/27/2021 11:28	WG1794001

Sample Narrative:

L1443286-01 WG1794001: Surrogate failure due to matrix interference

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	33.8		1	12/22/2021 19:20	WG1791873

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	12/23/2021 16:26	WG1793093

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.96	T8	1	12/20/2021 12:35	WG1791948

Sample Narrative:

L1443286-02 WG1791948: 7.96 at 18.6C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	5200		10.0	1	12/19/2021 07:12	WG1791834

Sample Narrative:

L1443286-02 WG1791834: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	238		0.500	1	12/22/2021 09:38	WG1792189
Cadmium	ND		0.500	1	12/22/2021 09:38	WG1792189
Copper	11.8		2.00	1	12/22/2021 09:38	WG1792189
Lead	7.43		0.500	1	12/22/2021 09:38	WG1792189
Nickel	19.0		2.00	1	12/22/2021 09:38	WG1792189
Selenium	ND		2.00	1	12/22/2021 09:38	WG1792189
Silver	ND		1.00	1	12/22/2021 09:38	WG1792189
Zinc	26.7		5.00	1	12/22/2021 09:38	WG1792189

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

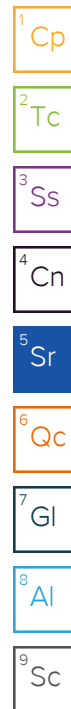
Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	1.97		0.200	1	12/21/2021 14:44	WG1791870

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	3.55		1.00	5	12/20/2021 21:22	WG1792191

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	161		10.0	100	12/18/2021 19:03	WG1791624
(S) a,a,a-Trifluorotoluene(FID)	93.2		77.0-120		12/18/2021 19:03	WG1791624



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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.0478		0.00800	8	12/23/2021 03:25	WG1793599
Toluene	0.728		0.0400	8	12/23/2021 03:25	WG1793599
Ethylbenzene	0.212		0.0200	8	12/18/2021 04:31	WG1791551
Xylenes, Total	5.89		0.0520	8	12/18/2021 04:31	WG1791551
1,2,4-Trimethylbenzene	2.18		0.0400	8	12/18/2021 04:31	WG1791551
1,3,5-Trimethylbenzene	1.75		0.0400	8	12/18/2021 04:31	WG1791551
(S) Toluene-d8	95.4		75.0-131		12/18/2021 04:31	WG1791551
(S) Toluene-d8	94.8		75.0-131		12/23/2021 03:25	WG1793599
(S) 4-Bromofluorobenzene	111		67.0-138		12/18/2021 04:31	WG1791551
(S) 4-Bromofluorobenzene	115		67.0-138		12/23/2021 03:25	WG1793599
(S) 1,2-Dichloroethane-d4	102		70.0-130		12/18/2021 04:31	WG1791551
(S) 1,2-Dichloroethane-d4	102		70.0-130		12/23/2021 03:25	WG1793599

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	383		20.0	5	12/26/2021 17:27	WG1794016
C28-C36 Motor Oil Range	109		20.0	5	12/26/2021 17:27	WG1794016
(S) o-Terphenyl	59.0		18.0-148		12/26/2021 17:27	WG1794016

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	12/24/2021 13:24	WG1794001
Acenaphthene	0.0180		0.00600	1	12/24/2021 13:24	WG1794001
Acenaphthylene	ND		0.00600	1	12/24/2021 13:24	WG1794001
Benzo(a)anthracene	ND		0.00600	1	12/24/2021 13:24	WG1794001
Benzo(a)pyrene	ND		0.00600	1	12/24/2021 13:24	WG1794001
Benzo(b)fluoranthene	ND		0.00600	1	12/24/2021 13:24	WG1794001
Benzo(g,h,i)perylene	ND		0.00600	1	12/24/2021 13:24	WG1794001
Benzo(k)fluoranthene	ND		0.00600	1	12/24/2021 13:24	WG1794001
Chrysene	ND		0.00600	1	12/24/2021 13:24	WG1794001
Dibenz(a,h)anthracene	ND		0.00600	1	12/24/2021 13:24	WG1794001
Fluoranthene	ND		0.00600	1	12/24/2021 13:24	WG1794001
Fluorene	0.0599		0.00600	1	12/24/2021 13:24	WG1794001
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	12/24/2021 13:24	WG1794001
Naphthalene	0.0611		0.0200	1	12/24/2021 13:24	WG1794001
Phenanthrene	0.0518		0.00600	1	12/24/2021 13:24	WG1794001
Pyrene	ND		0.00600	1	12/24/2021 13:24	WG1794001
1-Methylnaphthalene	0.480	V	0.0200	1	12/24/2021 13:24	WG1794001
2-Methylnaphthalene	0.527	J3 V	0.0200	1	12/24/2021 13:24	WG1794001
2-Chloronaphthalene	ND		0.0200	1	12/24/2021 13:24	WG1794001
(S) p-Terphenyl-d14	77.5		23.0-120		12/24/2021 13:24	WG1794001
(S) Nitrobenzene-d5	427	J1	14.0-149		12/24/2021 13:24	WG1794001
(S) 2-Fluorobiphenyl	73.7		34.0-125		12/24/2021 13:24	WG1794001

Sample Narrative:

L1443286-02 WG1794001: Surrogate failure due to matrix interference

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	12.4		1	12/22/2021 19:23	WG1791873

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	12/23/2021 16:36	WG1793093

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.69	T8	1	12/20/2021 12:35	WG1791948

Sample Narrative:

L1443286-03 WG1791948: 7.69 at 19.6C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	4540		10.0	1	12/19/2021 07:12	WG1791834

Sample Narrative:

L1443286-03 WG1791834: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	180		0.500	1	12/22/2021 09:41	WG1792189
Cadmium	ND		0.500	1	12/22/2021 09:41	WG1792189
Copper	10.7		2.00	1	12/22/2021 09:41	WG1792189
Lead	7.78		0.500	1	12/22/2021 09:41	WG1792189
Nickel	12.6		2.00	1	12/22/2021 09:41	WG1792189
Selenium	ND		2.00	1	12/22/2021 09:41	WG1792189
Silver	ND		1.00	1	12/22/2021 09:41	WG1792189
Zinc	29.9		5.00	1	12/22/2021 09:41	WG1792189

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

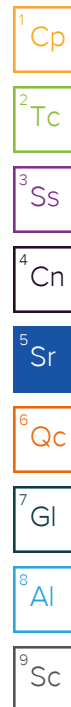
Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	1.04		0.200	1	12/21/2021 14:47	WG1791870

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	3.65		1.00	5	12/20/2021 21:25	WG1792191

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	2280		25.0	250	12/18/2021 19:27	WG1791624
(S) a,a,a-Trifluorotoluene(FID)	91.4		77.0-120		12/18/2021 19:27	WG1791624



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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.448		0.0200	20	12/18/2021 04:50	WG1791551
Toluene	14.6		0.100	20	12/18/2021 04:50	WG1791551
Ethylbenzene	4.09		0.0500	20	12/18/2021 04:50	WG1791551
Xylenes, Total	64.8		0.130	20	12/18/2021 04:50	WG1791551
1,2,4-Trimethylbenzene	48.3		0.100	20	12/18/2021 04:50	WG1791551
1,3,5-Trimethylbenzene	33.1		0.100	20	12/18/2021 04:50	WG1791551
(S) Toluene-d8	100		75.0-131		12/18/2021 04:50	WG1791551
(S) 4-Bromofluorobenzene	133		67.0-138		12/18/2021 04:50	WG1791551
(S) 1,2-Dichloroethane-d4	102		70.0-130		12/18/2021 04:50	WG1791551

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	5150		400	100	12/26/2021 17:40	WG1794016
C28-C36 Motor Oil Range	673		400	100	12/26/2021 17:40	WG1794016
(S) o-Terphenyl	0.000	J7	18.0-148		12/26/2021 17:40	WG1794016

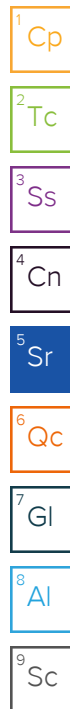
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	12/24/2021 14:24	WG1794001
Acenaphthene	0.668		0.00600	1	12/24/2021 14:24	WG1794001
Acenaphthylene	ND		0.00600	1	12/24/2021 14:24	WG1794001
Benzo(a)anthracene	ND		0.00600	1	12/24/2021 14:24	WG1794001
Benzo(a)pyrene	ND		0.0600	10	12/27/2021 11:11	WG1794001
Benzo(b)fluoranthene	ND		0.0600	10	12/27/2021 11:11	WG1794001
Benzo(g,h,i)perylene	ND		0.0600	10	12/27/2021 11:11	WG1794001
Benzo(k)fluoranthene	ND		0.0600	10	12/27/2021 11:11	WG1794001
Chrysene	0.0405		0.00600	1	12/24/2021 14:24	WG1794001
Dibenz(a,h)anthracene	ND		0.0600	10	12/27/2021 11:11	WG1794001
Fluoranthene	0.0844		0.00600	1	12/24/2021 14:24	WG1794001
Fluorene	1.80		0.00600	1	12/24/2021 14:24	WG1794001
Indeno(1,2,3-cd)pyrene	ND		0.0600	10	12/27/2021 11:11	WG1794001
Naphthalene	16.3		0.200	10	12/27/2021 11:11	WG1794001
Phenanthrene	0.972		0.00600	1	12/24/2021 14:24	WG1794001
Pyrene	0.0398		0.00600	1	12/24/2021 14:24	WG1794001
1-Methylnaphthalene	21.8		0.200	10	12/27/2021 11:11	WG1794001
2-Methylnaphthalene	52.6		1.00	50	12/27/2021 15:15	WG1794001
2-Chloronaphthalene	ND		0.0200	1	12/24/2021 14:24	WG1794001
(S) p-Terphenyl-d14	84.1	J7	23.0-120		12/27/2021 15:15	WG1794001
(S) p-Terphenyl-d14	70.3		23.0-120		12/24/2021 14:24	WG1794001
(S) p-Terphenyl-d14	88.7		23.0-120		12/27/2021 11:11	WG1794001
(S) Nitrobenzene-d5	0.000	J2	14.0-149		12/24/2021 14:24	WG1794001
(S) Nitrobenzene-d5	8920	J7	14.0-149		12/27/2021 15:15	WG1794001
(S) Nitrobenzene-d5	9250	J1	14.0-149		12/27/2021 11:11	WG1794001
(S) 2-Fluorobiphenyl	58.9	J7	34.0-125		12/27/2021 15:15	WG1794001
(S) 2-Fluorobiphenyl	208	J1	34.0-125		12/24/2021 14:24	WG1794001
(S) 2-Fluorobiphenyl	57.9		34.0-125		12/27/2021 11:11	WG1794001

Sample Narrative:

L1443286-03 WG1794001: Surrogate failure due to matrix interference

L1443286-03 WG1794001: IS/SURR failed on lower dilution.



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	26.5		1	12/22/2021 19:25	WG1791873

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	12/23/2021 16:42	WG1793093

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.70	T8	1	12/20/2021 12:35	WG1791948

Sample Narrative:

L1443286-04 WG1791948: 7.7 at 19.2C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	5070		10.0	1	12/19/2021 07:12	WG1791834

Sample Narrative:

L1443286-04 WG1791834: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	279		0.500	1	12/22/2021 09:44	WG1792189
Cadmium	ND		0.500	1	12/22/2021 09:44	WG1792189
Copper	10.7		2.00	1	12/22/2021 09:44	WG1792189
Lead	7.45		0.500	1	12/22/2021 09:44	WG1792189
Nickel	12.4		2.00	1	12/22/2021 09:44	WG1792189
Selenium	ND		2.00	1	12/22/2021 09:44	WG1792189
Silver	ND		1.00	1	12/22/2021 09:44	WG1792189
Zinc	28.1		5.00	1	12/22/2021 09:44	WG1792189

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	1.66		0.200	1	12/21/2021 14:55	WG1791870

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	4.02		1.00	5	12/20/2021 21:28	WG1792191

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	490		20.0	200	12/18/2021 19:50	WG1791624
(S) a,a,a-Trifluorotoluene(FID)	88.6		77.0-120		12/18/2021 19:50	WG1791624



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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.236		0.0200	20	12/23/2021 03:45	WG1793599
Toluene	1.24		0.100	20	12/18/2021 05:09	WG1791551
Ethylbenzene	0.494		0.0500	20	12/18/2021 05:09	WG1791551
Xylenes, Total	8.61		0.130	20	12/18/2021 05:09	WG1791551
1,2,4-Trimethylbenzene	4.97		0.100	20	12/18/2021 05:09	WG1791551
1,3,5-Trimethylbenzene	3.73		0.100	20	12/18/2021 05:09	WG1791551
(S) Toluene-d8	95.4		75.0-131		12/18/2021 05:09	WG1791551
(S) Toluene-d8	95.6		75.0-131		12/23/2021 03:45	WG1793599
(S) 4-Bromofluorobenzene	105		67.0-138		12/18/2021 05:09	WG1791551
(S) 4-Bromofluorobenzene	113		67.0-138		12/23/2021 03:45	WG1793599
(S) 1,2-Dichloroethane-d4	97.2		70.0-130		12/18/2021 05:09	WG1791551
(S) 1,2-Dichloroethane-d4	101		70.0-130		12/23/2021 03:45	WG1793599

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	1660		80.0	20	12/24/2021 22:01	WG1794016
C28-C36 Motor Oil Range	403		80.0	20	12/24/2021 22:01	WG1794016
(S) o-Terphenyl	0.000	J7	18.0-148		12/24/2021 22:01	WG1794016

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	12/24/2021 17:05	WG1794001
Acenaphthene	0.114		0.00600	1	12/24/2021 17:05	WG1794001
Acenaphthylene	ND		0.00600	1	12/24/2021 17:05	WG1794001
Benzo(a)anthracene	ND		0.00600	1	12/24/2021 17:05	WG1794001
Benzo(a)pyrene	ND		0.00600	1	12/24/2021 17:05	WG1794001
Benzo(b)fluoranthene	ND		0.00600	1	12/24/2021 17:05	WG1794001
Benzo(g,h,i)perylene	ND		0.00600	1	12/24/2021 17:05	WG1794001
Benzo(k)fluoranthene	ND		0.00600	1	12/24/2021 17:05	WG1794001
Chrysene	0.00912		0.00600	1	12/24/2021 17:05	WG1794001
Dibenz(a,h)anthracene	ND		0.00600	1	12/24/2021 17:05	WG1794001
Fluoranthene	0.0171		0.00600	1	12/24/2021 17:05	WG1794001
Fluorene	0.276		0.00600	1	12/24/2021 17:05	WG1794001
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	12/24/2021 17:05	WG1794001
Naphthalene	1.70		0.0200	1	12/24/2021 17:05	WG1794001
Phenanthrene	0.219		0.00600	1	12/24/2021 17:05	WG1794001
Pyrene	0.0105		0.00600	1	12/24/2021 17:05	WG1794001
1-Methylnaphthalene	3.21		0.0200	1	12/24/2021 17:05	WG1794001
2-Methylnaphthalene	8.53		0.200	10	12/27/2021 11:46	WG1794001
2-Chloronaphthalene	ND		0.0200	1	12/24/2021 17:05	WG1794001
(S) p-Terphenyl-d14	93.3		23.0-120		12/27/2021 11:46	WG1794001
(S) p-Terphenyl-d14	75.5		23.0-120		12/24/2021 17:05	WG1794001
(S) Nitrobenzene-d5	932	J1	14.0-149		12/24/2021 17:05	WG1794001
(S) Nitrobenzene-d5	1260	J1	14.0-149		12/27/2021 11:46	WG1794001
(S) 2-Fluorobiphenyl	71.7		34.0-125		12/27/2021 11:46	WG1794001
(S) 2-Fluorobiphenyl	87.6		34.0-125		12/24/2021 17:05	WG1794001

Sample Narrative:

L1443286-04 WG1794001: Surrogate failure due to matrix interference

Method Blank (MB)

(MB) R3744531-1 12/23/21 14:56

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

L1443286-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1443286-02 12/23/21 16:26 • (DUP) R3744531-4 12/23/21 16:31

	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) R3744531-2 12/23/21 15:03

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	10.6	106	80.0-120	

L1443338-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1443338-01 12/23/21 17:02 • (MS) R3744531-5 12/23/21 17:08 • (MSD) R3744531-6 12/23/21 17:13

	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	20.3	23.2	97.0	112	1	75.0-125			13.5	20

L1443338-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1443338-01 12/23/21 17:02 • (MS) R3744531-7 12/23/21 17:18

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	833	ND	888	107	50	75.0-125	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1443137-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1443137-01 12/20/21 12:35 • (DUP) R3742691-2 12/20/21 12:35

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.83	7.78	1	0.641		1

Sample Narrative:

OS: 7.83 at 19.1C

DUP: 7.78 at 18.6C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1443142-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1443142-06 12/20/21 12:35 • (DUP) R3742691-3 12/20/21 12:35

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.32	8.37	1	0.599		1

Sample Narrative:

OS: 8.32 at 18.9C

DUP: 8.37 at 18.9C

Laboratory Control Sample (LCS)

(LCS) R3742691-1 12/20/21 12:35

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

Sample Narrative:

LCS: 9.98 at 18.6C

L1443291-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1443291-02 12/20/21 11:23 • (DUP) R3742656-3 12/20/21 11:23

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	pH	su		%		%
pH	7.46	7.51	1	0.668		1

Sample Narrative:

OS: 7.46 at 17.5C

DUP: 7.51 at 17.5C

Laboratory Control Sample (LCS)

(LCS) R3742656-1 12/20/21 11:23

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

Sample Narrative:

LCS: 10 at 17.3C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3742328-1 12/19/21 07:12

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

L1442533-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1442533-02 12/19/21 07:12 • (DUP) R3742328-3 12/19/21 07:12

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	1010	1030	1	1.96		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1444048-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1444048-01 12/19/21 07:12 • (DUP) R3742328-4 12/19/21 07:12

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	4100	3990	1	2.72		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3742328-2 12/19/21 07:12

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	265	98.8	85.0-115	

Sample Narrative:

LCS: at 25C



Method Blank (MB)

(MB) R3743968-1 12/22/21 09:01

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) R3743968-2 12/22/21 09:03

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	93.8	93.8	80.0-120	
Cadmium	100	86.6	86.6	80.0-120	
Copper	100	92.4	92.4	80.0-120	
Lead	100	89.8	89.8	80.0-120	
Nickel	100	90.2	90.2	80.0-120	
Selenium	100	89.2	89.2	80.0-120	
Silver	20.0	17.0	85.2	80.0-120	
Zinc	100	87.2	87.2	80.0-120	

L1442533-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1442533-03 12/22/21 09:06 • (MS) R3743968-5 12/22/21 09:14 • (MSD) R3743968-6 12/22/21 09:16

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	350	435	415	84.6	64.6	1	75.0-125		J6	4.70	20
Cadmium	100	ND	105	104	104	104	1	75.0-125			0.620	20
Copper	100	12.4	117	117	105	104	1	75.0-125			0.334	20
Lead	100	5.53	114	116	109	110	1	75.0-125			1.18	20
Nickel	100	13.1	119	120	106	106	1	75.0-125			0.198	20
Selenium	100	ND	101	99.6	101	99.6	1	75.0-125			1.04	20
Silver	20.0	ND	20.9	20.9	104	105	1	75.0-125			0.387	20
Zinc	100	22.2	119	117	96.4	94.5	1	75.0-125			1.59	20

Method Blank (MB)

(MB) R3743438-1 12/21/21 13:23

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

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

(LCS) R3743438-2 12/21/21 13:25 • (LCSD) R3743438-3 12/21/21 13:28

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	0.960	0.960	96.0	96.0	80.0-120			0.0286	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3742910-1 12/20/21 20:30

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) R3742910-2 12/20/21 20:34

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	84.7	84.7	80.0-120	

L1442533-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1442533-03 12/20/21 20:37 • (MS) R3742910-5 12/20/21 20:47 • (MSD) R3742910-6 12/20/21 20:50

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	1.96	100	98.7	98.1	96.8	5	75.0-125			1.34	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3742784-3 12/18/21 11:51

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0280	⬇	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	95.0			77.0-120

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

(LCS) R3742784-1 12/18/21 10:41 • (LCSD) R3742784-2 12/18/21 11:04

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	4.17	4.66	75.8	84.7	72.0-127			11.1	20
(S) a,a,a-Trifluorotoluene(FID)				95.7	95.9	77.0-120				

L1443156-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1443156-04 12/18/21 14:01 • (MS) R3742784-4 12/18/21 20:13 • (MSD) R3742784-5 12/18/21 20:37

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	92.4	125	146	179	22.7	58.4	25	10.0-151			20.3	28
(S) a,a,a-Trifluorotoluene(FID)					100	102		77.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3743151-2 12/20/21 18:29

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.583	⬇	0.543	2.50
(S) a,a,a-Trifluorotoluene(FID)	98.7			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3743151-1 12/20/21 16:49

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.11	92.9	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			104	77.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3743754-3 12/17/21 22:38

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	0.000775	⬇	0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	98.8			75.0-131
(S) 4-Bromofluorobenzene	97.4			67.0-138
(S) 1,2-Dichloroethane-d4	100			70.0-130

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

(LCS) R3743754-1 12/17/21 21:22 • (LCSD) R3743754-2 12/17/21 21:41

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	0.131	0.126	105	101	70.0-123			3.89	20
Ethylbenzene	0.125	0.126	0.129	101	103	74.0-126			2.35	20
Toluene	0.125	0.116	0.121	92.8	96.8	75.0-121			4.22	20
1,2,4-Trimethylbenzene	0.125	0.129	0.130	103	104	70.0-126			0.772	20
1,3,5-Trimethylbenzene	0.125	0.127	0.130	102	104	73.0-127			2.33	20
Xylenes, Total	0.375	0.389	0.388	104	103	72.0-127			0.257	20
(S) Toluene-d8				93.0	95.4	75.0-131				
(S) 4-Bromofluorobenzene				106	102	67.0-138				
(S) 1,2-Dichloroethane-d4				109	104	70.0-130				

L1443286-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1443286-04 12/18/21 05:09 • (MS) R3743754-4 12/18/21 05:28 • (MSD) R3743754-5 12/18/21 05:47

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	2.48	0.0346	2.10	2.08	83.3	82.5	20	10.0-149			0.957	37
Ethylbenzene	2.48	0.494	2.86	2.85	95.4	95.0	20	10.0-160			0.350	38
Toluene	2.48	1.24	3.73	3.89	100	107	20	10.0-156			4.20	38
1,2,4-Trimethylbenzene	2.48	4.97	7.85	7.97	116	121	20	10.0-160			1.52	36
1,3,5-Trimethylbenzene	2.48	3.73	6.33	6.47	105	110	20	10.0-160			2.19	38
Xylenes, Total	7.43	8.61	17.6	18.6	121	134	20	10.0-160			5.52	38
(S) Toluene-d8					96.9	97.8		75.0-131				
(S) 4-Bromofluorobenzene					106	106		67.0-138				
(S) 1,2-Dichloroethane-d4					99.6	97.4		70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3744125-3 12/22/21 21:23

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
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	92.5			75.0-131
(S) 4-Bromofluorobenzene	109			67.0-138
(S) 1,2-Dichloroethane-d4	99.3			70.0-130

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

(LCS) R3744125-1 12/22/21 20:26 • (LCSD) R3744125-2 12/22/21 20:45

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	0.118	0.134	94.4	107	70.0-123			12.7	20
Toluene	0.125	0.105	0.123	84.0	98.4	75.0-121			15.8	20
Xylenes, Total	0.375	0.366	0.393	97.6	105	72.0-127			7.11	20
(S) Toluene-d8				91.9	95.4	75.0-131				
(S) 4-Bromofluorobenzene				113	106	67.0-138				
(S) 1,2-Dichloroethane-d4				105	101	70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3744797-1 12/24/21 19:51

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
(S) o-Terphenyl	86.3			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3744797-2 12/24/21 20:04

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	51.2	102	50.0-150	
(S) o-Terphenyl			120	18.0-148	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3744842-2 12/24/21 10:03

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) Nitrobenzene-d5	92.3			14.0-149
(S) 2-Fluorobiphenyl	94.5			34.0-125
(S) p-Terphenyl-d14	106			23.0-120

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3744842-1 12/24/21 09:43

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0620	77.5	50.0-126	
Acenaphthene	0.0800	0.0663	82.9	50.0-120	
Acenaphthylene	0.0800	0.0652	81.5	50.0-120	
Benzo(a)anthracene	0.0800	0.0617	77.1	45.0-120	
Benzo(a)pyrene	0.0800	0.0664	83.0	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0686	85.8	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0661	82.6	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0662	82.8	49.0-125	
Chrysene	0.0800	0.0655	81.9	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0646	80.7	47.0-125	
Fluoranthene	0.0800	0.0655	81.9	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R37444842-1 12/24/21 09:43

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0651	81.4	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0681	85.1	46.0-125	
Naphthalene	0.0800	0.0657	82.1	50.0-120	
Phenanthrene	0.0800	0.0659	82.4	47.0-120	
Pyrene	0.0800	0.0705	88.1	43.0-123	
1-Methylnaphthalene	0.0800	0.0647	80.9	51.0-121	
2-Methylnaphthalene	0.0800	0.0684	85.5	50.0-120	
2-Chloronaphthalene	0.0800	0.0676	84.5	50.0-120	
(S) Nitrobenzene-d5			88.8	14.0-149	
(S) 2-Fluorobiphenyl			92.0	34.0-125	
(S) p-Terphenyl-d14			98.0	23.0-120	

L1443286-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1443286-02 12/24/21 13:24 • (MS) R37444842-3 12/24/21 13:44 • (MSD) R37444842-4 12/24/21 14:04

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0772	ND	0.0531	0.0540	68.8	70.3	1	10.0-145			1.68	30
Acenaphthene	0.0772	0.0180	0.0692	0.0747	60.1	67.6	1	14.0-127			7.64	27
Acenaphthylene	0.0772	ND	0.0555	0.0585	71.9	76.2	1	21.0-124			5.26	25
Benzo(a)anthracene	0.0772	ND	0.0583	0.0611	75.5	79.6	1	10.0-139			4.69	30
Benzo(a)pyrene	0.0772	ND	0.0578	0.0598	74.9	77.9	1	10.0-141			3.40	31
Benzo(b)fluoranthene	0.0772	ND	0.0519	0.0538	67.2	70.1	1	10.0-140			3.60	36
Benzo(g,h,i)perylene	0.0772	ND	0.0472	0.0481	61.1	62.6	1	10.0-140			1.89	33
Benzo(k)fluoranthene	0.0772	ND	0.0506	0.0518	65.5	67.4	1	10.0-137			2.34	31
Chrysene	0.0772	ND	0.0573	0.0588	74.2	76.6	1	10.0-145			2.58	30
Dibenz(a,h)anthracene	0.0772	ND	0.0501	0.0512	64.9	66.7	1	10.0-132			2.17	31
Fluoranthene	0.0772	ND	0.0618	0.0646	75.3	79.3	1	10.0-153			4.43	33
Fluorene	0.0772	0.0599	0.109	0.123	63.6	82.2	1	11.0-130			12.1	29
Indeno(1,2,3-cd)pyrene	0.0772	ND	0.0549	0.0567	71.1	73.8	1	10.0-137			3.23	32
Naphthalene	0.0772	0.0611	0.0814	0.0971	26.3	46.9	1	10.0-135			17.6	27
Phenanthrene	0.0772	0.0518	0.104	0.117	67.6	84.9	1	10.0-144			11.8	31
Pyrene	0.0772	ND	0.0570	0.0587	67.2	69.7	1	10.0-148			2.94	35
1-Methylnaphthalene	0.0772	0.480	0.512	0.606	41.5	164	1	10.0-142		V	16.8	28
2-Methylnaphthalene	0.0772	0.527	0.462	0.642	0.000	150	1	10.0-137	V	J3 V	32.6	28
2-Chloronaphthalene	0.0772	ND	0.0492	0.0505	63.7	65.8	1	29.0-120			2.61	24
(S) Nitrobenzene-d5					394	484		14.0-149	J1	J1		
(S) 2-Fluorobiphenyl					70.8	72.8		34.0-125				
(S) p-Terphenyl-d14					75.0	75.8		23.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1443286-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1443286-02 12/24/21 13:24 • (MS) R3744842-3 12/24/21 13:44 • (MSD) R3744842-4 12/24/21 14:04

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%

Sample Narrative:
OS: Surrogate failure due to matrix interference

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

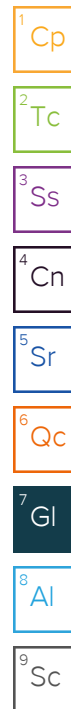
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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
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.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

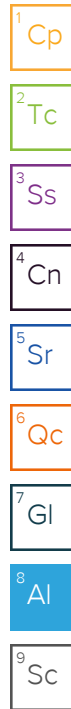
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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.



Condition:
NCF / OK

July 26, 2021

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Caerus Oil and Gas

Sample Delivery Group: L1378722
Samples Received: 07/15/2021
Project Number: SGV 1F
Description: SGV 1F Release
Site: SGV 1F
Report To: Blair Rollins
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 National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	20
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Sc: Sample Chain of Custody	24



SAMPLE SUMMARY

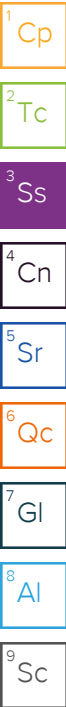
20210714-SGV 1F (BGN) @ 6" L1378722-01 Solid

Collected by
DH

Collected date/time
07/14/21 10:35

Received date/time
07/15/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1707577	1	07/24/21 18:34	07/24/21 18:34	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1707673	1	07/20/21 10:55	07/21/21 14:57	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1707432	1	07/19/21 14:47	07/19/21 17:42	KAB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1706094	1	07/19/21 05:26	07/20/21 05:14	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1706953	1	07/19/21 06:43	07/20/21 21:59	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1707906	1	07/22/21 16:11	07/24/21 19:55	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1706954	5	07/19/21 06:38	07/19/21 22:08	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1709934	8	07/15/21 17:33	07/22/21 17:57	JHH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1708557	1	07/20/21 15:57	07/21/21 01:16	BJP	Mt. Juliet, TN



20210714-SGV 1F (BGS) @ 6" L1378722-02 Solid

Collected by
DH

Collected date/time
07/14/21 10:15

Received date/time
07/15/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1707577	1	07/24/21 18:37	07/24/21 18:37	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1707673	1	07/20/21 10:55	07/21/21 15:02	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1707432	1	07/19/21 14:47	07/19/21 17:42	KAB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1706094	1	07/19/21 05:26	07/20/21 05:14	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1706953	1	07/19/21 06:43	07/20/21 22:02	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1707906	1	07/22/21 16:11	07/24/21 19:58	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1706954	5	07/19/21 06:38	07/19/21 22:11	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1709934	1	07/15/21 17:33	07/22/21 18:16	JHH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1708557	1	07/20/21 15:57	07/21/21 01:36	BJP	Mt. Juliet, TN

20210714-SGV 1F (BGE) @ 6" L1378722-03 Solid

Collected by
DH

Collected date/time
07/14/21 10:25

Received date/time
07/15/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1707577	1	07/24/21 18:40	07/24/21 18:40	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1707673	1	07/20/21 10:55	07/21/21 15:07	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1707432	1	07/19/21 14:47	07/19/21 17:42	KAB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1706094	1	07/19/21 05:26	07/20/21 05:14	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1706953	1	07/19/21 06:43	07/20/21 22:10	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1707906	1	07/22/21 16:11	07/24/21 20:01	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1706954	5	07/19/21 06:38	07/19/21 22:14	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1709934	1	07/15/21 17:33	07/22/21 18:35	JHH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1708557	1	07/20/21 15:57	07/21/21 01:56	BJP	Mt. Juliet, TN

20210714-SGV 1F (BGW) @ 6" L1378722-04 Solid

Collected by
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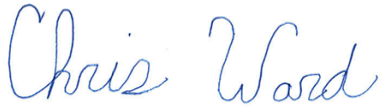
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Received date/time
07/15/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1707577	1	07/24/21 18:43	07/24/21 18:43	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1707673	1	07/20/21 10:55	07/21/21 15:12	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1707432	1	07/19/21 14:47	07/19/21 17:42	KAB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1706094	1	07/19/21 05:26	07/20/21 05:14	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1706953	1	07/19/21 06:43	07/20/21 22:13	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1707906	1	07/22/21 16:11	07/24/21 20:04	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1706954	5	07/19/21 06:38	07/19/21 22:17	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1709934	1	07/15/21 17:33	07/22/21 18:55	JHH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1708557	1	07/20/21 15:57	07/21/21 02:15	BJP	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

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Calculated Results

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte					
Sodium Adsorption Ratio	0.0665		1	07/24/2021 18:34	WG1707577

Wet Chemistry by Method 7199

	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Analyte							
Hexavalent Chromium	U		0.255	1.00	1	07/21/2021 14:57	WG1707673

Wet Chemistry by Method 9045D

	Result su	Qualifier	Dilution	Analysis date / time	Batch
Analyte					
pH	7.22	T8	1	07/19/2021 17:42	WG1707432

Sample Narrative:
L1378722-01 WG1707432: 7.22 at 22.4C

Wet Chemistry by Method 9050AMod

	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Analyte						
Specific Conductance	401		10.0	1	07/20/2021 05:14	WG1706094

Metals (ICP) by Method 6010B

	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Analyte							
Barium	189		0.0852	0.500	1	07/20/2021 21:59	WG1706953
Cadmium	0.344	J	0.0471	0.500	1	07/20/2021 21:59	WG1706953
Copper	13.3		0.400	2.00	1	07/20/2021 21:59	WG1706953
Lead	11.2		0.208	0.500	1	07/20/2021 21:59	WG1706953
Nickel	16.0		0.132	2.00	1	07/20/2021 21:59	WG1706953
Selenium	0.833	J	0.764	2.00	1	07/20/2021 21:59	WG1706953
Silver	U		0.127	1.00	1	07/20/2021 21:59	WG1706953
Zinc	38.7		0.832	5.00	1	07/20/2021 21:59	WG1706953

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

	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Analyte							
Hot Water Sol. Boron	0.485		0.0167	0.200	1	07/24/2021 19:55	WG1707906

Metals (ICPMS) by Method 6020

	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Analyte							
Arsenic	3.67		0.100	1.00	5	07/19/2021 22:08	WG1706954

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

	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Analyte							
Benzene	U		0.00374	0.00800	8	07/22/2021 17:57	WG1709934
Toluene	0.0270	J	0.0104	0.0400	8	07/22/2021 17:57	WG1709934
Ethylbenzene	U		0.00590	0.0200	8	07/22/2021 17:57	WG1709934
Xylenes, Total	0.127		0.00704	0.0520	8	07/22/2021 17:57	WG1709934
1,2,4-Trimethylbenzene	0.0292	J	0.0126	0.0400	8	07/22/2021 17:57	WG1709934
1,3,5-Trimethylbenzene	U		0.0160	0.0400	8	07/22/2021 17:57	WG1709934
(S) Toluene-d8	108			75.0-131		07/22/2021 17:57	WG1709934

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) 4-Bromofluorobenzene	96.5			67.0-138		07/22/2021 17:57	WG1709934
(S) 1,2-Dichloroethane-d4	78.8			70.0-130		07/22/2021 17:57	WG1709934

Sample Narrative:

L1378722-01 WG1709934: Lowest possible dilution due to sample foaming.

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	07/21/2021 01:16	WG1708557
Acenaphthene	U		0.00209	0.00600	1	07/21/2021 01:16	WG1708557
Acenaphthylene	U		0.00216	0.00600	1	07/21/2021 01:16	WG1708557
Benzo(a)anthracene	0.00327	J	0.00173	0.00600	1	07/21/2021 01:16	WG1708557
Benzo(a)pyrene	U		0.00179	0.00600	1	07/21/2021 01:16	WG1708557
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/21/2021 01:16	WG1708557
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	07/21/2021 01:16	WG1708557
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/21/2021 01:16	WG1708557
Chrysene	U		0.00232	0.00600	1	07/21/2021 01:16	WG1708557
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/21/2021 01:16	WG1708557
Fluoranthene	U		0.00227	0.00600	1	07/21/2021 01:16	WG1708557
Fluorene	U		0.00205	0.00600	1	07/21/2021 01:16	WG1708557
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/21/2021 01:16	WG1708557
Naphthalene	U		0.00408	0.0200	1	07/21/2021 01:16	WG1708557
Phenanthrene	U		0.00231	0.00600	1	07/21/2021 01:16	WG1708557
Pyrene	U		0.00200	0.00600	1	07/21/2021 01:16	WG1708557
1-Methylnaphthalene	U		0.00449	0.0200	1	07/21/2021 01:16	WG1708557
2-Methylnaphthalene	U		0.00427	0.0200	1	07/21/2021 01:16	WG1708557
2-Chloronaphthalene	U		0.00466	0.0200	1	07/21/2021 01:16	WG1708557
(S) p-Terphenyl-d14	59.2			23.0-120		07/21/2021 01:16	WG1708557
(S) Nitrobenzene-d5	49.5			14.0-149		07/21/2021 01:16	WG1708557
(S) 2-Fluorobiphenyl	55.8			34.0-125		07/21/2021 01:16	WG1708557

¹Cp²Tc³Ss⁴Cn⁵Sr⁶Qc⁷Gl⁸Al⁹Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.0370		1	07/24/2021 18:37	WG1707577

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	07/21/2021 15:02	WG1707673

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.37	T8	1	07/19/2021 17:42	WG1707432

Sample Narrative:

L1378722-02 WG1707432: 8.37 at 22.4C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	188		10.0	1	07/20/2021 05:14	WG1706094

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	196		0.0852	0.500	1	07/20/2021 22:02	WG1706953
Cadmium	0.350	J	0.0471	0.500	1	07/20/2021 22:02	WG1706953
Copper	17.3		0.400	2.00	1	07/20/2021 22:02	WG1706953
Lead	12.5		0.208	0.500	1	07/20/2021 22:02	WG1706953
Nickel	19.9		0.132	2.00	1	07/20/2021 22:02	WG1706953
Selenium	1.19	J	0.764	2.00	1	07/20/2021 22:02	WG1706953
Silver	U		0.127	1.00	1	07/20/2021 22:02	WG1706953
Zinc	44.8		0.832	5.00	1	07/20/2021 22:02	WG1706953

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

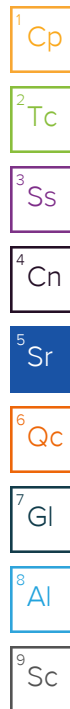
Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.425		0.0167	0.200	1	07/24/2021 19:58	WG1707906

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.01		0.100	1.00	5	07/19/2021 22:11	WG1706954

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.000470	J	0.000467	0.00100	1	07/22/2021 18:16	WG1709934
Toluene	0.00213	J	0.00130	0.00500	1	07/22/2021 18:16	WG1709934
Ethylbenzene	U		0.000737	0.00250	1	07/22/2021 18:16	WG1709934
Xylenes, Total	0.00379	J	0.000880	0.00650	1	07/22/2021 18:16	WG1709934
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/22/2021 18:16	WG1709934
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/22/2021 18:16	WG1709934
(S) Toluene-d8	109			75.0-131		07/22/2021 18:16	WG1709934



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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) 4-Bromofluorobenzene	99.5			67.0-138		07/22/2021 18:16	WG1709934
(S) 1,2-Dichloroethane-d4	79.1			70.0-130		07/22/2021 18:16	WG1709934

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	07/21/2021 01:36	WG1708557
Acenaphthene	U		0.00209	0.00600	1	07/21/2021 01:36	WG1708557
Acenaphthylene	U		0.00216	0.00600	1	07/21/2021 01:36	WG1708557
Benzo(a)anthracene	U		0.00173	0.00600	1	07/21/2021 01:36	WG1708557
Benzo(a)pyrene	U		0.00179	0.00600	1	07/21/2021 01:36	WG1708557
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/21/2021 01:36	WG1708557
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	07/21/2021 01:36	WG1708557
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/21/2021 01:36	WG1708557
Chrysene	U		0.00232	0.00600	1	07/21/2021 01:36	WG1708557
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/21/2021 01:36	WG1708557
Fluoranthene	U		0.00227	0.00600	1	07/21/2021 01:36	WG1708557
Fluorene	U		0.00205	0.00600	1	07/21/2021 01:36	WG1708557
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/21/2021 01:36	WG1708557
Naphthalene	U		0.00408	0.0200	1	07/21/2021 01:36	WG1708557
Phenanthrene	U		0.00231	0.00600	1	07/21/2021 01:36	WG1708557
Pyrene	U		0.00200	0.00600	1	07/21/2021 01:36	WG1708557
1-Methylnaphthalene	U		0.00449	0.0200	1	07/21/2021 01:36	WG1708557
2-Methylnaphthalene	U		0.00427	0.0200	1	07/21/2021 01:36	WG1708557
2-Chloronaphthalene	U		0.00466	0.0200	1	07/21/2021 01:36	WG1708557
(S) p-Terphenyl-d14	73.1			23.0-120		07/21/2021 01:36	WG1708557
(S) Nitrobenzene-d5	60.8			14.0-149		07/21/2021 01:36	WG1708557
(S) 2-Fluorobiphenyl	62.6			34.0-125		07/21/2021 01:36	WG1708557

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	0.0514		1	07/24/2021 18:40	WG1707577

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	07/21/2021 15:07	WG1707673

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.31	T8	1	07/19/2021 17:42	WG1707432

Sample Narrative:

L1378722-03 WG1707432: 8.31 at 22.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	244		10.0	1	07/20/2021 05:14	WG1706094

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	234		0.0852	0.500	1	07/20/2021 22:10	WG1706953
Cadmium	0.286	J	0.0471	0.500	1	07/20/2021 22:10	WG1706953
Copper	13.9		0.400	2.00	1	07/20/2021 22:10	WG1706953
Lead	7.60		0.208	0.500	1	07/20/2021 22:10	WG1706953
Nickel	15.9		0.132	2.00	1	07/20/2021 22:10	WG1706953
Selenium	3.17		0.764	2.00	1	07/20/2021 22:10	WG1706953
Silver	U		0.127	1.00	1	07/20/2021 22:10	WG1706953
Zinc	30.4		0.832	5.00	1	07/20/2021 22:10	WG1706953

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

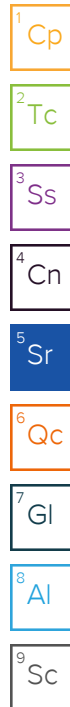
Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.375		0.0167	0.200	1	07/24/2021 20:01	WG1707906

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.23		0.100	1.00	5	07/19/2021 22:14	WG1706954

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	07/22/2021 18:35	WG1709934
Toluene	0.00329	J	0.00130	0.00500	1	07/22/2021 18:35	WG1709934
Ethylbenzene	0.000742	J	0.000737	0.00250	1	07/22/2021 18:35	WG1709934
Xylenes, Total	0.00577	J	0.000880	0.00650	1	07/22/2021 18:35	WG1709934
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/22/2021 18:35	WG1709934
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/22/2021 18:35	WG1709934
(S) Toluene-d8	106			75.0-131		07/22/2021 18:35	WG1709934



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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) 4-Bromofluorobenzene	96.9			67.0-138		07/22/2021 18:35	WG1709934
(S) 1,2-Dichloroethane-d4	79.4			70.0-130		07/22/2021 18:35	WG1709934

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	07/21/2021 01:56	WG1708557
Acenaphthene	U		0.00209	0.00600	1	07/21/2021 01:56	WG1708557
Acenaphthylene	U		0.00216	0.00600	1	07/21/2021 01:56	WG1708557
Benzo(a)anthracene	U		0.00173	0.00600	1	07/21/2021 01:56	WG1708557
Benzo(a)pyrene	U		0.00179	0.00600	1	07/21/2021 01:56	WG1708557
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/21/2021 01:56	WG1708557
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	07/21/2021 01:56	WG1708557
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/21/2021 01:56	WG1708557
Chrysene	U		0.00232	0.00600	1	07/21/2021 01:56	WG1708557
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/21/2021 01:56	WG1708557
Fluoranthene	U		0.00227	0.00600	1	07/21/2021 01:56	WG1708557
Fluorene	U		0.00205	0.00600	1	07/21/2021 01:56	WG1708557
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/21/2021 01:56	WG1708557
Naphthalene	U		0.00408	0.0200	1	07/21/2021 01:56	WG1708557
Phenanthrene	U		0.00231	0.00600	1	07/21/2021 01:56	WG1708557
Pyrene	U		0.00200	0.00600	1	07/21/2021 01:56	WG1708557
1-Methylnaphthalene	U		0.00449	0.0200	1	07/21/2021 01:56	WG1708557
2-Methylnaphthalene	U		0.00427	0.0200	1	07/21/2021 01:56	WG1708557
2-Chloronaphthalene	U		0.00466	0.0200	1	07/21/2021 01:56	WG1708557
(S) p-Terphenyl-d14	68.3			23.0-120		07/21/2021 01:56	WG1708557
(S) Nitrobenzene-d5	60.2			14.0-149		07/21/2021 01:56	WG1708557
(S) 2-Fluorobiphenyl	63.0			34.0-125		07/21/2021 01:56	WG1708557

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.224		1	07/24/2021 18:43	WG1707577

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	07/21/2021 15:12	WG1707673

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.01	T8	1	07/19/2021 17:42	WG1707432

Sample Narrative:

L1378722-04 WG1707432: 8.01 at 22.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	548		10.0	1	07/20/2021 05:14	WG1706094

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	198		0.0852	0.500	1	07/20/2021 22:13	WG1706953
Cadmium	0.354	J	0.0471	0.500	1	07/20/2021 22:13	WG1706953
Copper	14.7		0.400	2.00	1	07/20/2021 22:13	WG1706953
Lead	9.93		0.208	0.500	1	07/20/2021 22:13	WG1706953
Nickel	21.4		0.132	2.00	1	07/20/2021 22:13	WG1706953
Selenium	2.02		0.764	2.00	1	07/20/2021 22:13	WG1706953
Silver	U		0.127	1.00	1	07/20/2021 22:13	WG1706953
Zinc	38.5		0.832	5.00	1	07/20/2021 22:13	WG1706953

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	1.04		0.0167	0.200	1	07/24/2021 20:04	WG1707906

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.03		0.100	1.00	5	07/19/2021 22:17	WG1706954

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.000525	J	0.000467	0.00100	1	07/22/2021 18:55	WG1709934
Toluene	0.00280	J	0.00130	0.00500	1	07/22/2021 18:55	WG1709934
Ethylbenzene	U		0.000737	0.00250	1	07/22/2021 18:55	WG1709934
Xylenes, Total	0.00518	J	0.000880	0.00650	1	07/22/2021 18:55	WG1709934
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/22/2021 18:55	WG1709934
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/22/2021 18:55	WG1709934
(S) Toluene-d8	109			75.0-131		07/22/2021 18:55	WG1709934



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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) 4-Bromofluorobenzene	97.4			67.0-138		07/22/2021 18:55	WG1709934
(S) 1,2-Dichloroethane-d4	73.1			70.0-130		07/22/2021 18:55	WG1709934

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	07/21/2021 02:15	WG1708557
Acenaphthene	U		0.00209	0.00600	1	07/21/2021 02:15	WG1708557
Acenaphthylene	U		0.00216	0.00600	1	07/21/2021 02:15	WG1708557
Benzo(a)anthracene	U		0.00173	0.00600	1	07/21/2021 02:15	WG1708557
Benzo(a)pyrene	U		0.00179	0.00600	1	07/21/2021 02:15	WG1708557
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/21/2021 02:15	WG1708557
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	07/21/2021 02:15	WG1708557
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/21/2021 02:15	WG1708557
Chrysene	U		0.00232	0.00600	1	07/21/2021 02:15	WG1708557
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/21/2021 02:15	WG1708557
Fluoranthene	U		0.00227	0.00600	1	07/21/2021 02:15	WG1708557
Fluorene	U		0.00205	0.00600	1	07/21/2021 02:15	WG1708557
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/21/2021 02:15	WG1708557
Naphthalene	U		0.00408	0.0200	1	07/21/2021 02:15	WG1708557
Phenanthrene	U		0.00231	0.00600	1	07/21/2021 02:15	WG1708557
Pyrene	U		0.00200	0.00600	1	07/21/2021 02:15	WG1708557
1-Methylnaphthalene	U		0.00449	0.0200	1	07/21/2021 02:15	WG1708557
2-Methylnaphthalene	U		0.00427	0.0200	1	07/21/2021 02:15	WG1708557
2-Chloronaphthalene	U		0.00466	0.0200	1	07/21/2021 02:15	WG1708557
(S) p-Terphenyl-d14	71.6			23.0-120		07/21/2021 02:15	WG1708557
(S) Nitrobenzene-d5	56.6			14.0-149		07/21/2021 02:15	WG1708557
(S) 2-Fluorobiphenyl	62.2			34.0-125		07/21/2021 02:15	WG1708557

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Method Blank (MB)

(MB) R3682220-1 07/21/21 11:46

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

L1379292-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1379292-05 07/21/21 13:56 • (DUP) R3682220-7 07/21/21 14:01

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	0.365	0.388	1	6.30	⌵	20

L1378535-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1378535-01 07/21/21 14:44 • (DUP) R3682220-8 07/21/21 14:51

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

Laboratory Control Sample (LCS)

(LCS) R3682220-2 07/21/21 11:51

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	10.8	108	80.0-120	

L1378829-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1378829-04 07/21/21 12:22 • (MS) R3682220-3 07/21/21 12:28 • (MSD) R3682220-4 07/21/21 12:33

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Hexavalent Chromium	20.0	U	22.1	22.0	110	110	1	75.0-125			0.446	20

L1378829-04 Original Sample (OS) • Matrix Spike (MS)

(OS) L1378829-04 07/21/21 12:22 • (MS) R3682220-5 07/21/21 12:48

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	646	U	661	102	50	75.0-125	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1378439-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1378439-03 07/19/21 17:42 • (DUP) R3681261-2 07/19/21 17:42

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	7.88	7.92	1	0.506		1

Sample Narrative:

OS: 7.88 at 22.6C

DUP: 7.92 at 22.7C



L1378744-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1378744-01 07/19/21 17:42 • (DUP) R3681261-3 07/19/21 17:42

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	10.2	10.2	1	0.0977		1

Sample Narrative:

OS: 10.24 at 22.5C

DUP: 10.23 at 22.5C

Laboratory Control Sample (LCS)

(LCS) R3681261-1 07/19/21 17:42

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

Sample Narrative:

LCS: 10.05 at 22.6C

Method Blank (MB)

(MB) R3681329-1 07/20/21 05:14

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

L1378090-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1378090-04 07/20/21 05:14 • (DUP) R3681329-3 07/20/21 05:14

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	19.5	18.9	1	3.02		20

L1378722-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1378722-03 07/20/21 05:14 • (DUP) R3681329-4 07/20/21 05:14

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	244	257	1	5.03		20

Laboratory Control Sample (LCS)

(LCS) R3681329-2 07/20/21 05:14

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	899	912	101	85.0-115	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3681881-1 07/20/21 21:38

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	0.328	J	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) R3681881-2 07/20/21 21:41

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	104	104	80.0-120	
Cadmium	100	99.3	99.3	80.0-120	
Copper	100	100	100	80.0-120	
Lead	100	98.4	98.4	80.0-120	
Nickel	100	101	101	80.0-120	
Selenium	100	104	104	80.0-120	
Silver	20.0	17.9	89.5	80.0-120	
Zinc	100	98.7	98.7	80.0-120	

L1377958-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1377958-01 07/20/21 21:44 • (MS) R3681881-5 07/20/21 21:51 • (MSD) R3681881-6 07/20/21 21:53

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	69.5	193	207	124	137	1	75.0-125		J5	6.78	20
Cadmium	100	U	106	102	106	102	1	75.0-125			3.29	20
Copper	100	18.4	136	132	117	114	1	75.0-125			2.75	20
Lead	100	U	105	102	105	102	1	75.0-125			3.29	20
Nickel	100	5.82	119	122	113	116	1	75.0-125			2.42	20
Selenium	100	1.26	112	109	111	107	1	75.0-125			2.84	20
Silver	20.0	U	18.4	17.9	91.8	89.7	1	75.0-125			2.32	20
Zinc	100	5.29	112	107	107	102	1	75.0-125			4.47	20

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3683616-1 07/24/21 19:47

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

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

(LCS) R3683616-2 07/24/21 19:50 • (LCSD) R3683616-3 07/24/21 19:53

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	0.950	0.949	95.0	94.9	80.0-120			0.141	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3681310-1 07/19/21 20:47

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) R3681310-2 07/19/21 20:50

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	89.7	89.7	80.0-120	

L1377958-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1377958-01 07/19/21 20:53 • (MS) R3681310-5 07/19/21 21:03 • (MSD) R3681310-6 07/19/21 21:06

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	3.88	96.8	96.2	93.0	92.3	5	75.0-125			0.685	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3683664-2 07/22/21 10:32

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	107			75.0-131
(S) 4-Bromofluorobenzene	96.6			67.0-138
(S) 1,2-Dichloroethane-d4	86.2			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3683664-1 07/22/21 09:35

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.139	111	70.0-123	
Ethylbenzene	0.125	0.142	114	74.0-126	
Toluene	0.125	0.140	112	75.0-121	
1,2,4-Trimethylbenzene	0.125	0.125	100	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.130	104	73.0-127	
Xylenes, Total	0.375	0.430	115	72.0-127	
(S) Toluene-d8			102	75.0-131	
(S) 4-Bromofluorobenzene			98.6	67.0-138	
(S) 1,2-Dichloroethane-d4			100	70.0-130	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3682210-2 07/20/21 20:58

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) Nitrobenzene-d5	67.6			14.0-149
(S) 2-Fluorobiphenyl	74.5			34.0-125
(S) p-Terphenyl-d14	87.8			23.0-120

Laboratory Control Sample (LCS)

(LCS) R3682210-1 07/20/21 20:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0588	73.5	50.0-126	
Acenaphthene	0.0800	0.0585	73.1	50.0-120	
Acenaphthylene	0.0800	0.0627	78.4	50.0-120	
Benzo(a)anthracene	0.0800	0.0574	71.8	45.0-120	
Benzo(a)pyrene	0.0800	0.0507	63.4	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0611	76.4	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0563	70.4	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0585	73.1	49.0-125	
Chrysene	0.0800	0.0591	73.9	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0573	71.6	47.0-125	
Fluoranthene	0.0800	0.0586	73.3	49.0-129	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS)

(LCS) R3682210-1 07/20/21 20:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0613	76.6	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0551	68.9	46.0-125	
Naphthalene	0.0800	0.0576	72.0	50.0-120	
Phenanthrene	0.0800	0.0584	73.0	47.0-120	
Pyrene	0.0800	0.0592	74.0	43.0-123	
1-Methylnaphthalene	0.0800	0.0604	75.5	51.0-121	
2-Methylnaphthalene	0.0800	0.0582	72.8	50.0-120	
2-Chloronaphthalene	0.0800	0.0594	74.3	50.0-120	
(S) Nitrobenzene-d5			71.2	14.0-149	
(S) 2-Fluorobiphenyl			77.9	34.0-125	
(S) p-Terphenyl-d14			90.0	23.0-120	

L1378702-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1378702-13 07/21/21 03:35 • (MS) R3682210-3 07/21/21 03:54 • (MSD) R3682210-4 07/21/21 04:14

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0756	U	0.0571	0.0553	75.5	72.4	1	10.0-145			3.20	30
Acenaphthene	0.0756	U	0.0532	0.0513	70.4	67.1	1	14.0-127			3.64	27
Acenaphthylene	0.0756	U	0.0591	0.0577	78.2	75.5	1	21.0-124			2.40	25
Benzo(a)anthracene	0.0756	0.00516	0.0602	0.0606	72.8	72.6	1	10.0-139			0.662	30
Benzo(a)pyrene	0.0756	0.00883	0.0540	0.0550	59.7	60.4	1	10.0-141			1.83	31
Benzo(b)fluoranthene	0.0756	0.0109	0.0481	0.0524	49.2	54.3	1	10.0-140			8.56	36
Benzo(g,h,i)perylene	0.0756	0.0173	0.0479	0.0491	40.5	41.6	1	10.0-140			2.47	33
Benzo(k)fluoranthene	0.0756	U	0.0482	0.0471	63.8	61.6	1	10.0-137			2.31	31
Chrysene	0.0756	0.0153	0.0540	0.0554	51.2	52.5	1	10.0-145			2.56	30
Dibenz(a,h)anthracene	0.0756	0.00313	0.0464	0.0448	57.2	54.5	1	10.0-132			3.51	31
Fluoranthene	0.0756	0.00807	0.0568	0.0594	64.5	67.2	1	10.0-153			4.48	33
Fluorene	0.0756	U	0.0559	0.0537	73.9	70.3	1	11.0-130			4.01	29
Indeno(1,2,3-cd)pyrene	0.0756	0.00829	0.0490	0.0494	53.8	53.8	1	10.0-137			0.813	32
Naphthalene	0.0756	U	0.0526	0.0510	69.6	66.8	1	10.0-135			3.09	27
Phenanthrene	0.0756	0.00244	0.0532	0.0525	67.1	65.5	1	10.0-144			1.32	31
Pyrene	0.0756	0.0137	0.0550	0.0589	54.6	59.2	1	10.0-148			6.85	35
1-Methylnaphthalene	0.0756	U	0.0567	0.0546	75.0	71.5	1	10.0-142			3.77	28
2-Methylnaphthalene	0.0756	U	0.0542	0.0525	71.7	68.7	1	10.0-137			3.19	28
2-Chloronaphthalene	0.0756	U	0.0516	0.0502	68.3	65.7	1	29.0-120			2.75	24
(S) Nitrobenzene-d5					71.6	68.5		14.0-149				
(S) 2-Fluorobiphenyl					70.8	67.6		34.0-125				
(S) p-Terphenyl-d14					79.6	76.8		23.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

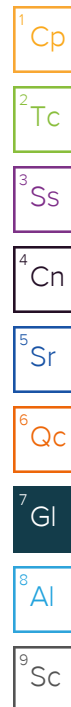
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location.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

Abbreviations and Definitions

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

Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
T8	Sample(s) received past/too close to holding time expiration.



ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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

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

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

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



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

Billing Information:

Same as above

Report to:
bmiddleton@caerusoilandgas.com

Email To:
bmiddleton@caerusoilandgas.com

Project Description: ~~Historic Release~~ SGV IF Release

City/State: Parachute, CO
Collected: ~~Parachute, CO~~

Phone:
Fax:
Client Project # SGV IF

Lab Project # SGV IF

Collected by (print):
Site/Facility ID # SGV IF

P.O. # SGV IF

Collected by (signature):
Immediately Packed on Ice N ☐ Y ☒
Rush? (Lab MUST Be Notified)
Same Day ☐ Five Day ☐
Next Day ☐ 5 Day (Rad Only) ☐
Two Day ☐ 10 Day (Rad Only) ☐
Three Day ☐
Date Results Needed
Standard TAT

Quote #

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

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
20210714-SGV IF (B&N) CG"	Grab	SS		7/14/21	1035	3
20210714-SGV IF (B&S) CG"	↓	↓		↓	1015	↓
20210714-SGV IF (B&E) CG"	↓	↓		↓	1025	↓
20210714-SGV IF (B&W) CG"	↓	↓		↓	1045	↓

TPH - GRO, DRO, ORO

BTEX

TABLE 915-1 - PAH's

SAR, EC, pH, Boron

TABLE 915-1 - Metals

Analysis / Container / Preservative

Chain of Custody Page 1 of 1



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



L # 4378122
D054

Acctnum:

Template:

Prelogin:

TSR:

PB:

Shipped Via:

Remarks Sample # (lab only)

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

Remarks:

Samples returned via:
UPS ☐ FedEx ☐ Courier ☐

Tracking # 501612321897

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: 7/14/21

Time: 1400

Received by: (Signature)

Trip Blank Received: Yes ☐ No ☒
HCL / MeOH
TBR

Relinquished by: (Signature)

Date: 7/14/21

Time: 1700

Received by: (Signature)

Temp: 2.8°C Bottles Received: 2.8/0=2.8 12

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date: 7/15/21

Time: 9:30

Received for lab by: (Signature)

Date: 7/15/21 Time: 9:30

Hold:

Condition:
NCF / OK