VIA ELECTRONIC MAIL –

March 18, 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) completed subsequent soil screening and confirmation soil sampling, and delineation soil screening and site assessment soil sampling associated with the South Grand Valley (SGV) Federal Pipeline Release (Site). These activities were completed based on the initial confirmation soil samples results associated with dry gas release of the SGV Federal Pipeline which was completed on December 14, 2021. This document serves as a report of work completed (ROWC) which details all investigative assessment activities since January 4, 2022. All initial investigative activities can be referenced under Colorado Oil and Gas Conservation Commission (COGCC) Initial Site Investigation and Remediation Work Plan Document Number 402915028. 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 January 4, 2022, WSP personnel completed subsequent soil screening and collected confirmation samples from the northern section of the open pipeline right-of-way (ROW) of the SGV Federal Pipeline. These samples were collected to further define hydrocarbon impacts observed during the initial sampling event completed on December 14, 2021. The subsequent 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 expanded northern 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). Based on PID field screening values, and on-site observations, two confirmation soil samples were collected immediately below the SGV Federal Pipeline north of previously collected confirmation soil sample 20211214-SGV F-(POC N1)@7' within 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 analytical results are summarized in Table 1. Figure 2 illustrates the ROW excavation extent, and POC N2 and POC N3 confirmation soil sample locations.

ASSESSMENT ACTIVITIES – SGV FEDERAL DRY GAS RELEASE

On February 23, 24, 25, and 28, 2022, a WSP geologist and Colorado Drilling and Sampling (CD&S) completed the advancement of seven soil borings at the Site. Confirmation soil samples were collected from each of the borings in order to define the extent of hydrocarbon impacts previously observed from the point of release (POR) within the ROW of the Site. Prior to drilling activities, the proposed borings located immediately adjacent to the pipeline (SB-POR, SB-N, and SB-S) were cleared of the pipeline using a hydro-vacuum (hydro-vac) truck operated by Western Slope Field Services, Inc. (WCO). These three hydro-vac potholes were advanced to total depths ranging from 9 feet to 10 feet bgs. All seven soil borings were advanced by CD&S using a track mounted drill rig equipped with overburden drilling excentric (ODEX) technology. The location of the soil borings area as follows: one immediately adjacent to the POR location, one each to the north and south of the open excavation area along the pipeline, and two each to the east and west of the POR location. The boreholes ranged in depth from 25 feet bgs to 26.5 feet bgs.

All drilling oversight, soil sampling, and screening activities were conducted by a WSP geologist who screened each borehole at five-foot intervals and inspected for the presence or absence of petroleum hydrocarbons odor and/or staining. Soil was characterized utilizing the United Soil Classification System by visually inspecting the soil samples and field screening the soil head space using a PID to monitor for the presence or absence of volatile organic compounds. Soil samples were collected when split spoon recovery was sufficient for laboratory submittal and when impacts were observed. Samples were collected from the first two 5-foot intervals starting from the bottom of the pothole and the boring terminus for the three potholed borings along the pipeline (SB-POR, SB-N, and SB-S) and at each 10-foot interval starting from the surface to the boring terminus for the remaining four borings (SB-NE, SB-SE, SB-SW, and SB-NW). A total of three soil samples were submitted from each boring. All soil samples were collected in clean laboratory-prepared containers and submitted to Pace for analysis of a reduced analytical suite previously approved by the Director which included barium, boron, sodium absorption ration (SAR), electrical conductivity (EC), total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene, and total xylenes (BTEX), 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1-methylnapthene, 2-methylnapthlene, naphthalene, and fluorene. The approved analyte list was evaluated under the COGCC Table 915-1 PGSSLC mg/kg R and MCL Based M. The soil boring analytical results are summarized in Table 2. The soil boring logs are included in Enclosure A and laboratory analytical reports are provided in Enclosure B. The soil boring locations are depicted on Figure 3.

ANALYTICAL RESULTS – SGV FEDERAL DRY GAS RELEASE

Laboratory analytical results of the subsequent confirmation soil samples collected on January 4, 2022, within the northern ROW extent indicate that the two soil samples collected (20220104-SGVF-(POC-N2)@ 7'and 20220104-SGVF-(POC-N3)@ 7') exceeded the COGCC Table 915-1 PGSSLC (M) for arsenic, and barium and exceeded the COGCC Table 915-1 PGSSLC (R) for 1,3,5-trimethylbenzene. The R and M exceedances are summarized below:

- Arsenic concentrations representative of the two samples listed above were observed at 9.73 mg/kg and 7.98 mg/kg, respectively.
- Barium concentrations representative of the two samples listed above were observed at 208 mg/kg and 305 mg/kg, respectively.
- 1,2,4-trimethylbenzene concentrations were exceeded by soil sample 20220104-SGVF-(POC-N2)@ 7' with a concentration of 0.0246 mg/kg.
- 1,3,5-trimethylbenzene concentrations representative the two samples listed above were observed at 0.0474 mg/kg and 0.00913 mg/kg, respectively.

The two confirmation soil samples exceeded the COGCC Table 915-1 Clean-up Concentration (CC) for pH with values of 9.09 and 8.48, respectively. The laboratory analytical results are included in Enclosure B and summarized in Table 1.

Laboratory analytical results of the assessment soil samples collected on February 23, 24, 25, and 28, 2022, indicate that all 21 samples exceeded the COGCC Table 915-1 PGSSLC (M) for barium. Barium concentrations ranged from

109 mg/kg in soil sample 20220225-SGV FED(SB-S)@10-11.5' bgs to 306 mg/kg in soil sample 20220228-SGV FED(SB-SW)@23.5-25' bgs. All other M and R exceedances are listed as follows:

- 1,2,4-trimethylbenzene values were exceeded by soil samples 20220223-SGV FED(SB-POR)@15.5-17.5', 20220223-SGV FED(SB-POR)@25-26.5', 20220224-SGV FED(SB-NE)@3.5-5.5', 20220224-SGV FED(SB-SE)@25-26.5', 20220225-SGV FED(SB-SW)@3.5-5.5', 20220228-SGV FED(SB-SW)@23.5-25', 20220228-SGV FED(SB-NW)@3.5-5.5', and 20220228-SGV FED(SB-NW)@23.5-25' with values ranging from 0.00911 mg/kg to 0.0432 mg/kg.
- 1,3,5-trimethylbenzene values were exceeded by soil samples 20220224-SGV FED(SB-NE)@3.5-5.5', 20220225-SGV FED(SB-SW)@3.5-5.5', 20220228-SGV FED(SB-SW)@23.5-25', and 20220228-SGV FED(SB-NW)@3.5-5.5' with values ranging from 0.00111 mg/kg to 0.126 mg/kg.
- 1-methylnaphthalene value was exceeded by soil sample 20220223-SGV FED(SB-POR)@9-10.5' with a value of 0.0231 mg/kg.
- 2-methylnaphthalene values were exceeded by soil samples 20220223-SGV FED(SB-POR)@9-10.5', 20220223-SGV FED(SB-POR)@15.5-17.5', and 20220225-SGV FED(SB-SW)@3.5-5.5' with values ranging from 0.0205 mg/kg to 0.0501 mg/kg.

Two of the 21 soil boring samples exceeded the COGCC Table 915-1 CC for SAR with values ranging from 6.14 in soil sample 20220224-SGV FED(SB-N)@10-12' to 7.45 in soil sample 20220223-SGV FED(SB-POR)@9-10.5'.

All other analytes were either below the laboratory detection limit or within the COGCC Table 915-1 PGSSLCs. The soil boring analytical results are summarized in Table 2. The laboratory analytical report is provided in Enclosure B.

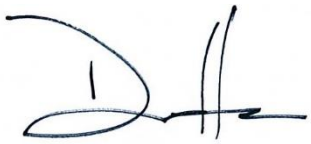
CONCLUSIONS – SGV FEDERAL DRY GAS RELEASE

Based on the summary of analytical data from the recent site assessment detailed above, WSP recommends that Caerus address the removal of the delineated shallow hydrocarbon impacted soils immediately beneath the POR, and to the north and south directions within the ROW corridor through hydro-vac excavation activities. Additional hydro-vac excavation and source removal should extend beyond the current excavation base (6.5 feet bgs) to approximately 10 feet bgs to remove vertical soil impacts from the dry gas release. Lateral hydro-vac excavation in all cardinal directions will be based on field observations along with previous site assessment data when removing the source vertically from the pipeline ROW. Following the hydro-vac excavation and source removal activities, additional confirmation soils samples will be collected from the ROW excavation base and sidewalls to confirm contaminants have been removed. An estimated 340 cubic yards of hydrocarbon impacted soil will be excavated via hydro-vac. All excavated material will be transported for offsite disposal to GreenLeaf Environmental Services, LLC. The proposed remediation area is depicted on the enclosed Figure 4.

Prior to the continuation of the any source removal activities, Caerus should request that the Director’s condition of approval (COA), listed in the COGCC Initial Site Investigation and Remediation Workplan Document Number 402915028, concerning assessing potential pathway to groundwater be reviewed and a determination to continue this project using Residential Soil Screening Level Concentrations be taken into consideration. This request is based on information provided in the COGCC Supplemental Form 27 Site Investigation Work Plan “Operator Comment” section of Document Number 402985269. Furthermore, Caerus should request a further reduced analyte suite to include TPH, BTEX, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1-methylnapthalene, 2-methylnapthalene, and SAR via COGCC Supplemental Form 27 Site Investigation Work Plan under COGCC Document Number 402985269.

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

Kind regards,



Dustin Held
Sr. Consultant, Environmental Geologist

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

Encl.

FIGURES

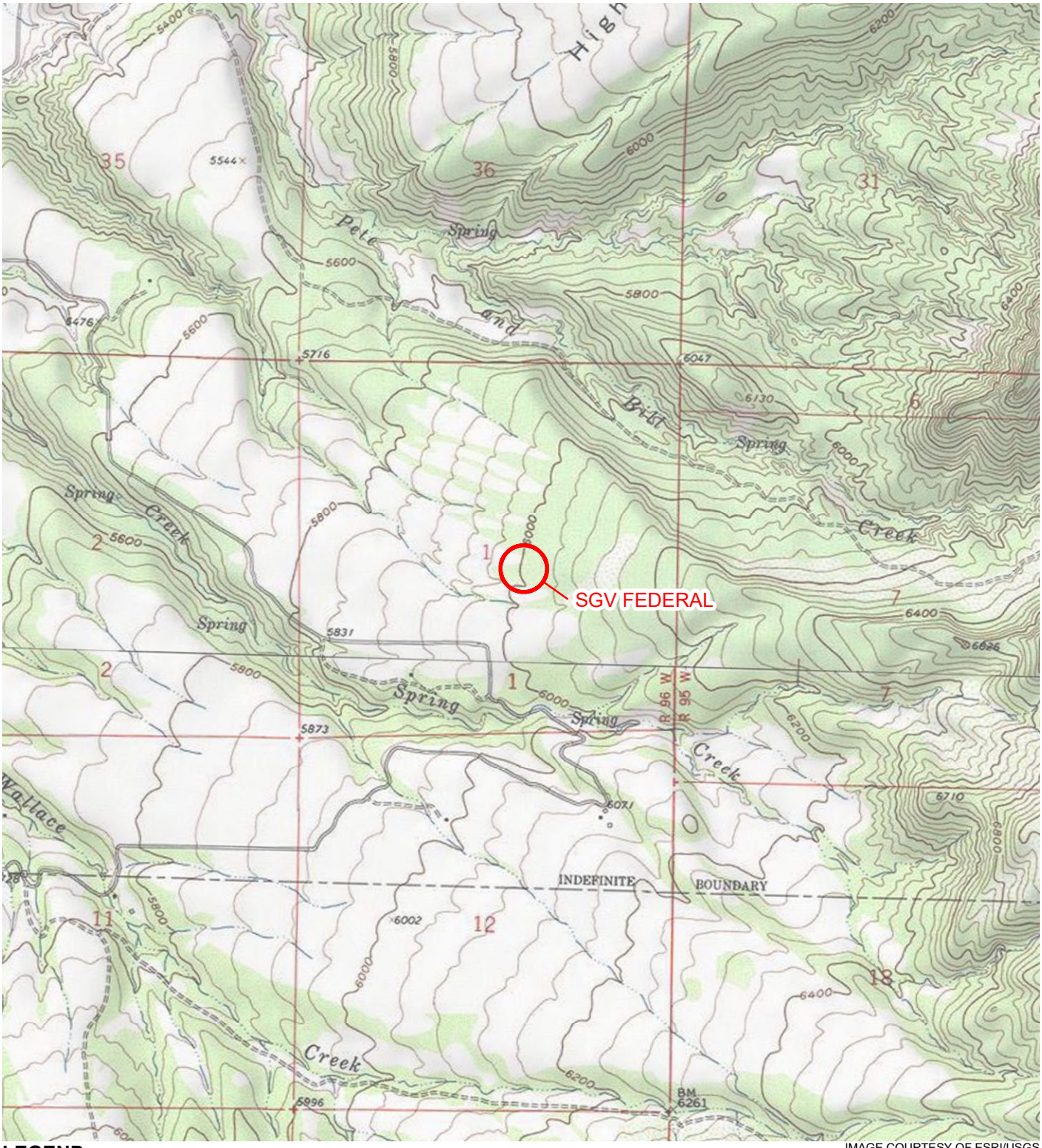


IMAGE COURTESY OF ESRI/USGS

LEGEND

SITE LOCATION

0 2,000 4,000

Feet

N

COLORADO

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

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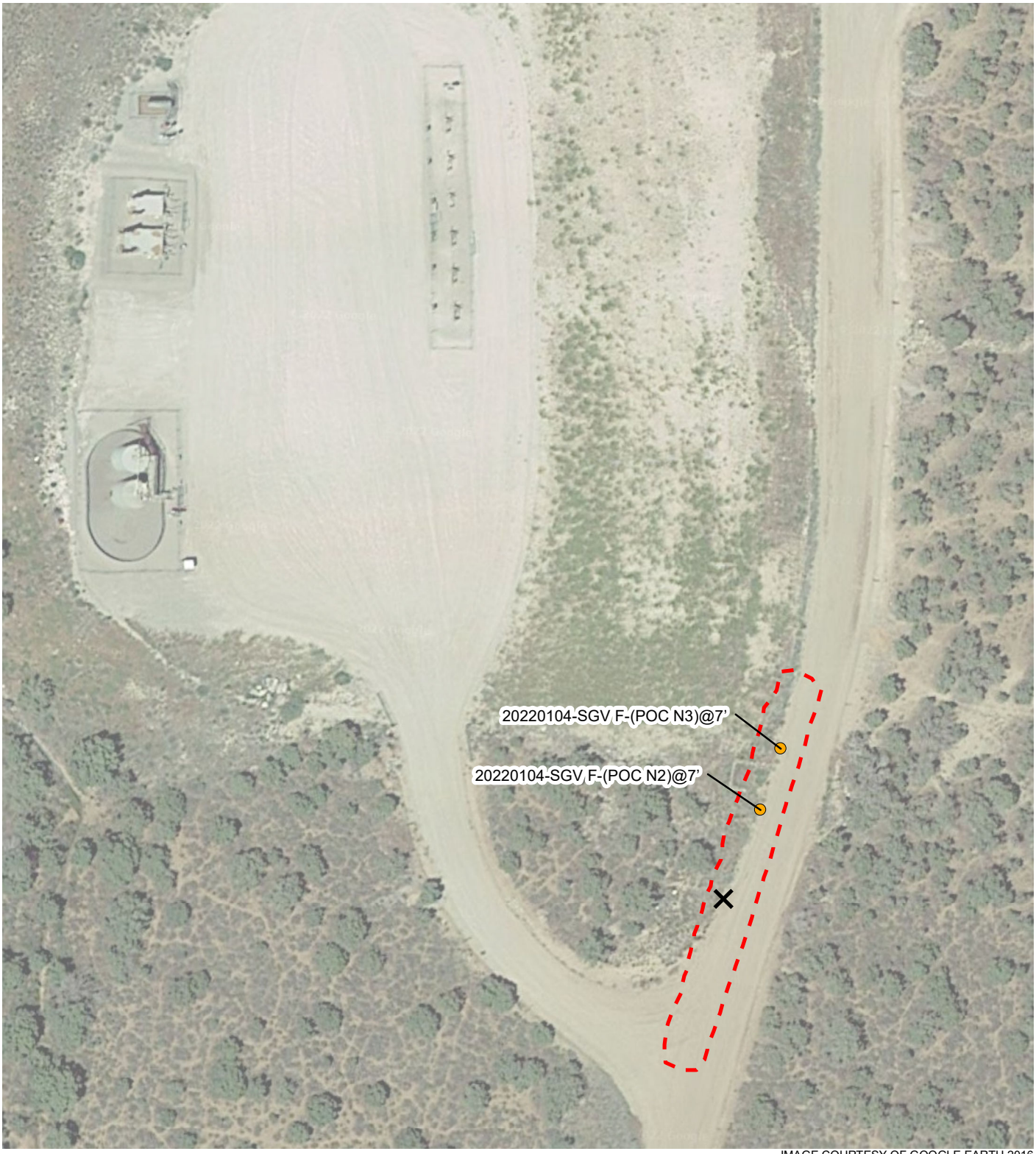

IMAGE COURTESY OF GOOGLE EARTH 2016

LEGEND

- RELEASE LOCATION
- SOIL SAMPLE
- EXCAVATION EXTENT (01/04/2022)

0 60 120

Feet

N

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

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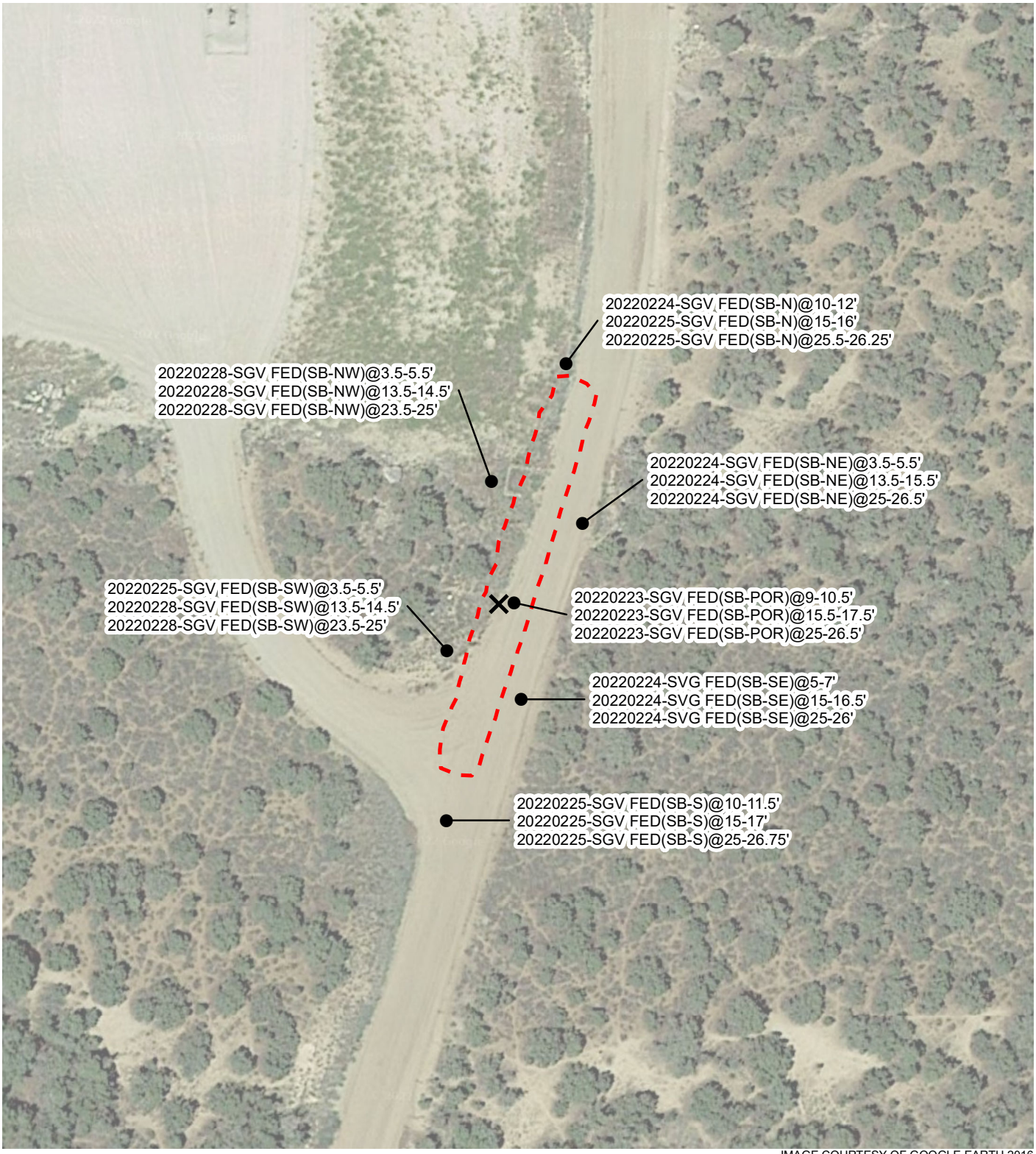

IMAGE COURTESY OF GOOGLE EARTH 2016

LEGEND

- RELEASE LOCATION
- SOIL BORING
- EXCAVATION EXTENT (01/04/2022)

0 60 120

Feet

N

FIGURE 3
SOIL BORING LOCATION MAP
SGV FEDERAL
NWSE SEC 1-T8S-R96W
GARFIELD COUNTY, COLORADO
CAERUS OIL AND GAS LLC

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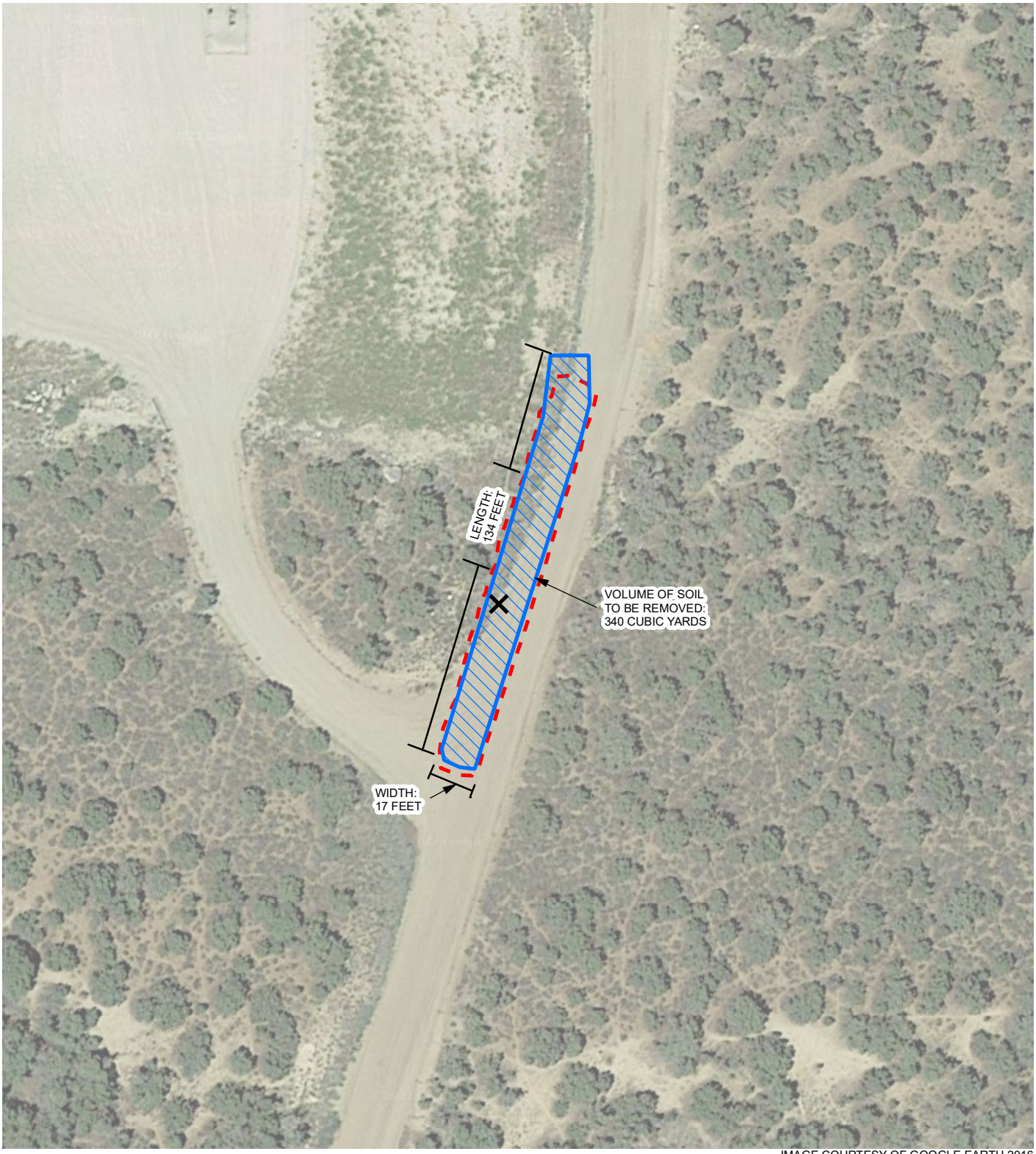

IMAGE COURTESY OF GOOGLE EARTH 2016

LEGEND

- RELEASE LOCATION
- EXCAVATION EXTENT (01/04/2022)
- PROPOSED REMEDIATION AREA

0 60 120

Feet

N

FIGURE 4
PROPOSED REMEDIATION AREA MAP
SGV FEDERAL
NWSE SEC 1-T8S-R96W
GARFIELD COUNTY, COLORADO
CAERUS OIL AND GAS LLC

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TABLES

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'	20220104-SVGF-(POC N2)@7'	20220104-SVGF-(ROC N3)@7'
Sample Date				12/14/2021	12/14/2021	12/14/2021	12/14/2021	1/4/2022	1/4/2022
Sample Depth (feet)				7	7	7	7	7	7
Sample Type				Confirmation	Confirmation	Confirmation	Confirmation	Confirmation	Confirmation
Arsenic	0.68	0.29 (M)	mg/kg	**2.92**	**3.55**	**3.65**	**4.02**	**9.73**	**7.98**
Barium	15,000	82 (M)	mg/kg	**601**	**238**	**180**	**279**	**208**	**305**
Boron	2	2	mg/l	**2.04**	1.97	1.04	1.66	0.329	0.350
Cadmium	71	0.38 (M)	mg/kg	ND	ND	ND	ND	ND	ND
Chromium (VI)	0.3	0.00067 (R)	mg/kg	ND	ND	ND	ND	ND	ND
Copper	3,100	46 (M)	mg/kg	8.56	11.8	10.7	10.7	14.1	16.3
Lead	400	14 (M)	mg/kg	6.53	7.43	7.78	7.45	8.00	11.8
Nickel	1,500	26 (R)	mg/kg	11.3	19.0	12.6	12.4	21.0	21.4
Selenium	390	0.26 (M)	mg/kg	ND	ND	ND	ND	ND	ND
Silver	390	0.8 (R)	mg/kg	ND	ND	ND	ND	ND	ND
Zinc	23,000	370 (R)	mg/kg	20.4	26.7	29.9	28.1	26.7	41.3
EC	<4	<4	mmhos/cm	3.430	**5.200**	**4.540**	**5.070**	0.548	0.350
pH	6 - 8.3	6 - 8.3	SU	7.83	7.96	7.69	7.70	**9.09**	**8.48**
SAR	<6	<6	unitless	**26.8**	**33.8**	**12.4**	**26.5**	3.08	0.479
TPH-GRO			mg/kg	2,750	161	2,280	490	0.161	ND
TPH-DRO			mg/kg	181	383	5,150	1,660	10.2	ND
TPH-ORO			mg/kg	23.9	109	673	403	ND	ND
TPH	500	500	mg/kg	**2,954.9**	**653**	**8,103**	**2,553**	10.361	ND
Benzene	1.2	0.0026 (M)	mg/kg	**8.44**	**0.0478**	**0.448**	**0.236**	ND	ND
Toluene	490	0.69 (M)	mg/kg	**56.7**	**0.728**	**14.6**	**1.24**	ND	ND
Ethylbenzene	5.8	0.78 (M)	mg/kg	**14.7**	0.212	**4.09**	0.494	ND	ND
Total Xylenes	58	9.9 (M)	mg/kg	**142**	5.89	**64.8**	8.61	ND	ND
1,2,4-trimethylbenzene	30	0.0081 (R)	mg/kg	**42.3**	**2.18**	**48.3**	**4.97**	**0.0246**	ND
1,3,5-trimethylbenzene	27	0.0087 (R)	mg/kg	**34.1**	**1.75**	**33.1**	**3.73**	**0.0474**	**0.00913**
Acenaphthene	1,800	5.8 (R)	mg/kg	0.206	0.0180	0.668	ND	ND	ND
Anthracene	360	0.55 (R)	mg/kg	ND	ND	ND	0.114	ND	ND
Benzo(A)anthracene	1.1	0.011 (R)	mg/kg	ND	ND	ND	ND	ND	ND
Benzo(B)fluoranthene	1.1	0.3 (R)	mg/kg	0.00749	ND	ND	ND	ND	ND
Benzo(K)fluoranthene	11	2.9 (R)	mg/kg	ND	ND	ND	ND	ND	ND
Benzo(A)pyrene	0.11	0.24 (M)	mg/kg	ND	ND	ND	ND	ND	ND
Chrysene	110	9 (R)	mg/kg	0.0138	ND	0.0405	0.00912	ND	ND
Dibenzo(A,H)anthracene	0.11	0.096 (R)	mg/kg	ND	ND	ND	ND	ND	ND
Fluoranthene	240	8.9 (R)	mg/kg	0.0210	ND	0.0844	0.0171	ND	ND
Fluorene	240	0.54 (R)	mg/kg	0.501	0.0599	**1.80**	0.276	ND	ND
Indeno(1,2,3,c-d)pyrene	1.1	0.98 (R)	mg/kg	ND	ND	ND	ND	ND	ND
1-methylnaphthalene	18	0.006 (R)	mg/kg	**6.71**	**0.480**	**21.8**	**3.21**	ND	ND
2-methylnaphthalene	24	0.019 (R)	mg/kg	**15.5**	**0.527**	**52.6**	**8.53**	ND	ND
Naphthalene	2	0.0038 (R)	mg/kg	**2.45**	**0.0611**	**16.3**	**1.70**	ND	ND
Pyrene	180	1.3 (R)	mg/kg	0.0135	ND	0.0398	0.0105	ND	ND

NOTES:
BOLD - indicates result exceeds the COGCC protection of groundwater soil screening level concentration
COGCC - Colorado Oil and Gas Conservation Commission
EC- electrical conductivity
mg/l - milligrams per liter
mg/kg - milligrams per kilogram
mmhos/cm - millimhos per centimeter
SAR - sodium adsorption ratio
SU - standard unit
TPH-ORO - total petroleum hydrcarbons- oil range orgainc
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 2

SOIL BORING 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						
				20220223-SGV FED(SB-POR)@9-10.5'	20220223-SGV FED(SB-POR)@15.5-17.5'	20220223-SGV FED(SB-POR)@25-26.5'	20220224-SGV FED(SB-NE)@3.5-5.5'	20220224-SGV FED(SB-NE)@13.5-15.5'	20220224-SGV FED(SB-NE)@25-26.5'	20220224-SGV FED(SB-SE)@5-7'
Sample Date				2/23/2022	2/23/2022	2/23/2022	2/24/2022	2/24/2022	2/24/2022	2/24/2022
Sample Depth Range (feet)				9-10.5	15.5-17.5	25-26.5	3.5-5.5	13.5-15.5	25-26.5	5-7
Sample Type				Confirmation	Confirmation	Confirmation	Confirmation	Confirmation	Confirmation	Confirmation
Arsenic	0.68	0.29 (M)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Barium	15,000	82 (M)	mg/kg	**282**	**243**	**188**	**245**	**261**	**259**	**222**
Boron	2	2	mg/l	0.534	ND	ND	0.571	ND	ND	0.912
Cadmium	71	0.38 (M)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	0.3	0.00067 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Copper	3,100	46 (M)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Lead	400	14 (M)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Nickel	1,500	26 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Selenium	390	0.26 (M)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Silver	390	0.8 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Zinc	23,000	370 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
EC	<4	<4	mmhos/cm	3.550	0.187	0.156	0.965	0.536	0.144	1.520
pH	6 - 8.3	6 - 8.3	SU	NA	NA	NA	NA	NA	NA	NA
SAR	<6	<6	unitless	**7.45**	1.12	0.387	0.615	0.232	0.576	4.16
TPH-GRO			mg/kg	ND	0.535	0.273	0.219	0.161	0.245	ND
TPH-DRO			mg/kg	ND	4.05	5.38	4.12	ND	ND	16.9
TPH-ORO			mg/kg	ND	ND	5.24	5.24	5.79	ND	12.5
TPH	500	500	mg/kg	ND	4.585	10.893	9.579	5.951	0.245	29.4
Benzene	1.2	0.0026 (M)	mg/kg	ND	ND	ND	0.00158	ND	ND	ND
Toluene	490	0.69 (M)	mg/kg	ND	ND	0.00565	0.0118	ND	ND	ND
Ethylbenzene	5.8	0.78 (M)	mg/kg	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	58	9.9 (M)	mg/kg	ND	0.0198	0.0256	0.0604	ND	0.0146	ND
1,2,4-trimethylbenzene	30	0.0081 (R)	mg/kg	ND	**0.00925**	**0.00980**	**0.0149**	ND	0.00633	ND
1,3,5-trimethylbenzene	27	0.0087 (R)	mg/kg	0.00797	0.00675	0.00723	**0.0111**	ND	ND	ND
Acenaphthene	1,800	5.8 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Anthracene	360	0.55 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Benzo(A)anthracene	1.1	0.011 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Benzo(B)fluoranthene	1.1	0.3 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Benzo(K)fluoranthene	11	2.9 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Benzo(A)pyrene	0.11	0.24 (M)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Chrysene	110	9 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Dibenzo(A,H)anthracene	0.11	0.096 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	240	8.9 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Fluorene	240	0.54 (R)	mg/kg	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3,c-d)pyrene	1.1	0.98 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
1-methylnaphthalene	18	0.006 (R)	mg/kg	**0.0231**	ND	ND	ND	ND	ND	ND
2-methylnaphthalene	24	0.019 (R)	mg/kg	**0.0501**	**0.0205**	ND	ND	ND	ND	ND
Naphthalene	2	0.0038 (R)	mg/kg	ND	ND	ND	ND	ND	ND	ND
Pyrene	180	1.3 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA

NOTES:
BOLD - indicates result exceeds the COGCC protection of groundwater soil screening level concentration
COGCC - Colorado Oil and Gas Conservation Commission
EC- electrical conductivity
mg/l - milligrams per liter
mg/kg - milligrams per kilogram
mmhos/cm - millimhos per centimeter
SAR - sodium adsorption ratio
SU - standard unit
TPH-ORO - total petroleum hydrcarbons- oil range orgainc
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 2

SOIL BORING 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						
				20220224-SGV FED(SB-SE)@15-16.5'	20220224-SGV FED(SB-SE)@25-26.5'	20220224-SGV FED(SB-N)@10-12'	20220224-SGV FED(SB-N)@15-16'	20220225-SGV FED(SB-N)@25.5-26.25'	20220225-SGV FED(SB-S)@10-11.5'	20220225-SGV FED(SB-S)@15-17'
Sample Date				2/24/2022	2/24/2022	2/24/2022	2/24/2022	2/25/2022	2/25/2022	2/25/2022
Sample Depth Range (feet)				15-16.5	25-26.5	10-12	15-16	25.5-26.25	10-11.5	15-17
Sample Type				Confirmation	Confirmation	Confirmation	Confirmation	Confirmation	Confirmation	Confirmation
Arsenic	0.68	0.29 (M)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Barium	15,000	82 (M)	mg/kg	**215**	**288**	**274**	**279**	**207**	**109**	**188**
Boron	2	2	mg/l	0.311	ND	0.983	1.46	ND	0.270	ND
Cadmium	71	0.38 (M)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	0.3	0.00067 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Copper	3,100	46 (M)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Lead	400	14 (M)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Nickel	1,500	26 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Selenium	390	0.26 (M)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Silver	390	0.8 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Zinc	23,000	370 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
EC	<4	<4	mmhos/cm	0.721	0.172	1.090	2.290	0.250	0.915	0.896
pH	6 - 8.3	6 - 8.3	SU	NA	NA	NA	NA	NA	NA	NA
SAR	<6	<6	unitless	2.55	0.697	**6.14**	4.81	2.41	0.125	2.63
TPH-GRO			mg/kg	ND	0.248	ND	0.153	0.241	ND	ND
TPH-DRO			mg/kg	19.6	ND	ND	ND	7.81	ND	ND
TPH-ORO			mg/kg	6.89	4.96	10.1	ND	6.13	ND	ND
TPH	500	500	mg/kg	26.49	5.208	10.1	0.153	14.181	ND	ND
Benzene	1.2	0.0026 (M)	mg/kg	ND	ND	ND	ND	ND	ND	ND
Toluene	490	0.69 (M)	mg/kg	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	5.8	0.78 (M)	mg/kg	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	58	9.9 (M)	mg/kg	ND	0.0180	ND	ND	ND	ND	ND
1,2,4-trimethylbenzene	30	0.0081 (R)	mg/kg	ND	**0.00958**	ND	ND	ND	ND	ND
1,3,5-trimethylbenzene	27	0.0087 (R)	mg/kg	ND	0.00660	ND	ND	ND	ND	ND
Acenaphthene	1,800	5.8 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Anthracene	360	0.55 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Benzo(A)anthracene	1.1	0.011 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Benzo(B)fluoranthene	1.1	0.3 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Benzo(K)fluoranthene	11	2.9 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Benzo(A)pyrene	0.11	0.24 (M)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Chrysene	110	9 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Dibenzo(A,H)anthracene	0.11	0.096 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	240	8.9 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Fluorene	240	0.54 (R)	mg/kg	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3,c-d)pyrene	1.1	0.98 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
1-methylnaphthalene	18	0.006 (R)	mg/kg	ND	ND	ND	ND	ND	ND	ND
2-methylnaphthalene	24	0.019 (R)	mg/kg	ND	ND	ND	ND	ND	ND	ND
Naphthalene	2	0.0038 (R)	mg/kg	ND	ND	ND	ND	ND	ND	ND
Pyrene	180	1.3 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA

NOTES:
BOLD - indicates result exceeds the COGCC protection of groundwater soil screening level concentration
COGCC - Colorado Oil and Gas Conservation Commission
EC- electrical conductivity
mg/l - milligrams per liter
mg/kg - milligrams per kilogram
mmhos/cm - millimhos per centimeter
SAR - sodium adsorption ratio
SU - standard unit
TPH-ORO - total petroleum hydrcarbons- oil range orgainc
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 2

SOIL BORING 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						
				20220225-SGV FED(SB-S)@25-25.75'	20220225-SGV FED(SB-SW)@3.5-5.5'	20220228-SGV FED(SB-SW)@13.5-14.5'	20220228-SGV FED(SB-SW)@23.5-25'	20220228-SGV FED(SB-NW)@3.5-5.5'	20220228-SGV FED(SB-NW)@13.5-14.5'	20220228-SGV FED(SB-NW)@23.5-25'
Sample Date				2/25/2022	2/25/2022	2/28/2022	2/28/2022	2/28/2022	2/28/2022	2/28/2022
Sample Depth Range (feet)				25-25.75	3.5-5.5	13.5-14.5	23.5-25	3.5-5.5	13.5-14.5	23.5-25
Sample Type				Confirmation	Confirmation	2/28/2022	2/28/2022	2/28/2022	2/28/2022	2/28/2022
Arsenic	0.68	0.29 (M)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Barium	15,000	82 (M)	mg/kg	**230**	**224**	**282**	**306**	**230**	**251**	**248**
Boron	2	2	mg/l	ND	1.45	ND	ND	1.09	ND	0.205
Cadmium	71	0.38 (M)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	0.3	0.00067 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Copper	3,100	46 (M)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Lead	400	14 (M)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Nickel	1,500	26 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Selenium	390	0.26 (M)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Silver	390	0.8 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Zinc	23,000	370 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
EC	<4	<4	mmhos/cm	2.110	0.368	0.482	0.150	0.627	0.217	0.222
pH	6 - 8.3	6 - 8.3	SU	NA	NA	NA	NA	NA	NA	NA
SAR	<6	<6	unitless	1.76	5.26	2.97	0.759	0.518	0.923	0.260
TPH-GRO			mg/kg	0.150	0.162	ND	0.448	0.344	0.195	0.387
TPH-DRO			mg/kg	6.18	ND	26.3	8.20	22.0	ND	4.06
TPH-ORO			mg/kg	8.20	4.08	25.0	25.4	23.2	4.35	6.25
TPH	500	500	mg/kg	14.530	4.242	51.3	34.048	45.544	4.545	10.697
Benzene	1.2	0.0026 (M)	mg/kg	ND	ND	ND	ND	ND	ND	0.00131
Toluene	490	0.69 (M)	mg/kg	ND	ND	ND	0.0194	ND	ND	0.0116
Ethylbenzene	5.8	0.78 (M)	mg/kg	ND	ND	ND	0.00683	ND	ND	ND
Total Xylenes	58	9.9 (M)	mg/kg	ND	0.00982	ND	0.121	0.0350	0.00785	0.0308
1,2,4-trimethylbenzene	30	0.0081 (R)	mg/kg	ND	**0.0172**	0.00614	**0.0411**	**0.0432**	ND	**0.00911**
1,3,5-trimethylbenzene	27	0.0087 (R)	mg/kg	ND	**0.0112**	ND	**0.0285**	**0.126**	ND	0.00641
Acenaphthene	1,800	5.8 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Anthracene	360	0.55 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Benzo(A)anthracene	1.1	0.011 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Benzo(B)fluoranthene	1.1	0.3 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Benzo(K)fluoranthene	11	2.9 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Benzo(A)pyrene	0.11	0.24 (M)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Chrysene	110	9 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Dibenzo(A,H)anthracene	0.11	0.096 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	240	8.9 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
Fluorene	240	0.54 (R)	mg/kg	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3,c-d)pyrene	1.1	0.98 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA
1-methylnaphthalene	18	0.006 (R)	mg/kg	ND	ND	ND	ND	ND	ND	ND
2-methylnaphthalene	24	0.019 (R)	mg/kg	ND	**0.0206**	ND	ND	ND	ND	ND
Naphthalene	2	0.0038 (R)	mg/kg	ND	ND	ND	ND	ND	ND	ND
Pyrene	180	1.3 (R)	mg/kg	NA	NA	NA	NA	NA	NA	NA

NOTES:
BOLD - indicates result exceeds the COGCC protection of groundwater soil screening level concentration
COGCC - Colorado Oil and Gas Conservation Commission
EC- electrical conductivity
mg/l - milligrams per liter
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TPH-DRO - total petroleum hydrocarbons-diesel range organics
TPH - combination of TPH-GRO, TPH-DRO, and TPH-ORO
NA - analyte not analyzed
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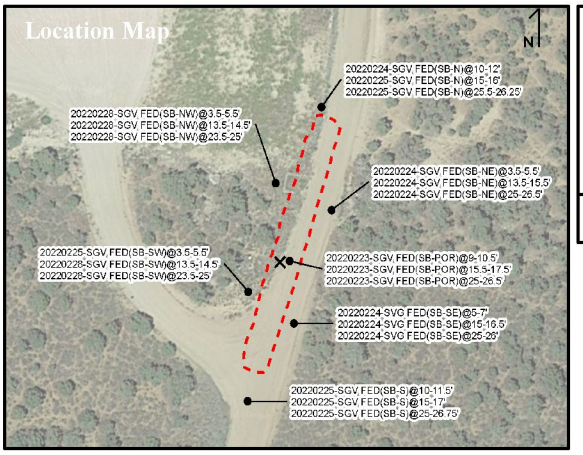
R - risk based
MCL - maxium containment level (M)
POR - point of release

ENCLOSURE A – SOIL BORING LOGS

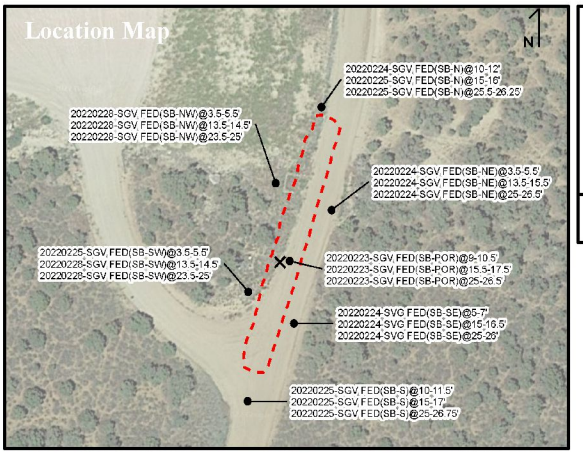


BORING LOG/MONITORING WELL COMPLETION DIAGRAM

PROJECT NAME:	SGV Federal		
PROJECT NO:	31403501.019	**LOGGED BY:**	Kevin Fletcher
BORING/WELL ID:	SB-POR	**SAMPLE METHOD:**	Split Spoon
COMPLETION DATE:	02/23/22	**DRILL METHOD:**	SS Auger/ODEX
TD (ft bgs):	26.5'	**DRILLED BY:**	CD&S
DTW (ft bgs):	NA	**DETECTOR:**	MiniRAE 3000
SCREEN SLOT:	NA	**FILTER PACK:**	NA
CASING LENGTH:	NA	**ANNULUS SEAL:**	Bentonite Chips
SCREEN LENGTH:	NA	**SURFACE SEAL:**	NA

HOLE DIAMETER:	4"		
WELL DIAMETER:	NA		
CASING TYPE:	NA		
SCREEN TYPE:	NA		

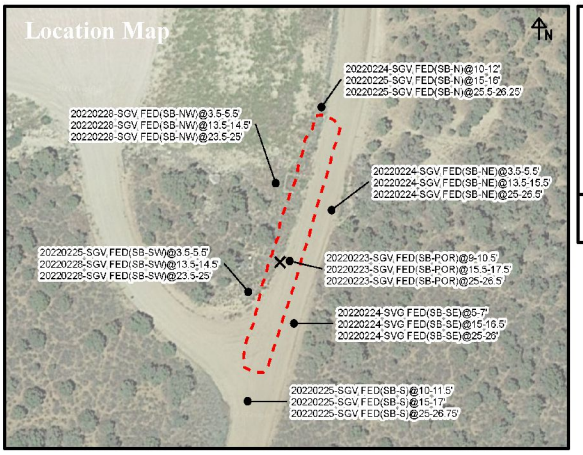
PID (ppm)	Staining	Moisture Content	Sample ID	Recovery (%)	Depth (ft)	USCS	USCS Graphic	Lithology Description	Well Construction
					0			0' - 9' - hydrovacuumed, interval not logged	
48.7		dry	SB-POR @9-10.5'	80	10	ML		9' - 10.5' - SILT w/ some gravel, brown, non plastic, soft, dry, no staining, no odor.	
55		dry	SB-POR @15.5-17.5'	90	15	ML		15.5' - 17.5' - SILT w/ some gravel, brown, non plastic, soft, dry, no staining, no odor.	
17.3		dry	SB-POR @20-22'	65	20	ML		20' - 22' - SILT w/ some interbedded sand, brown, non plastic, soft, dry, no staining, no odor.	
8.1		dry	SB-POR @25-26.5'	80	25	ML		25' - 26.5' - SILT w/ some gravel, brown, non plastic, soft, dry, no staining, no odor.	



BORING LOG/MONITORING WELL COMPLETION DIAGRAM

PROJECT NAME:	SGV Federal		
PROJECT NO:	31403501.019	**LOGGED BY:**	Kevin Fletcher
BORING/WELL ID:	SB-NE	**SAMPLE METHOD:**	Split Spoon
COMPLETION DATE:	02/24/22	**DRILL METHOD:**	ODEX
TD (ft bgs):	26.5'	**DRILLED BY:**	CD&S
DTW (ft bgs):	NA	**DETECTOR:**	MiniRAE 3000
SCREEN SLOT:	NA	**FILTER PACK:**	NA
CASING LENGTH:	NA	**ANNULUS SEAL:**	Bentonite Chips
SCREEN LENGTH:	NA	**SURFACE SEAL:**	NA
HOLE DIAMETER:	4"		
WELL DIAMETER:	NA		
CASING TYPE:	NA		
SCREEN TYPE:	NA		

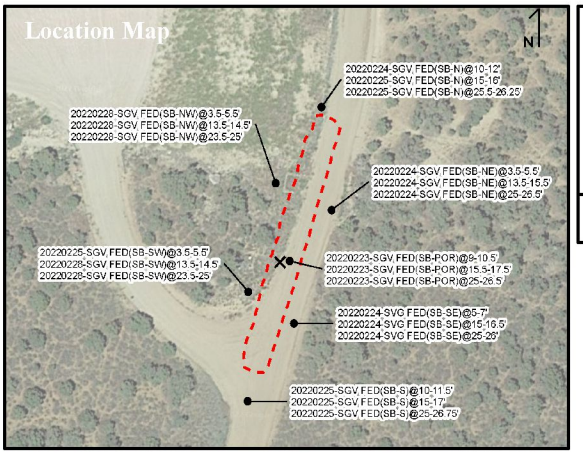
PID (ppm)	Staining	Moisture Content	Sample ID	Recovery (%)	Depth (ft)	USCS	USCS Graphic	Lithology Description	Well Construction
29.2		dry	SB-NE @3.5-5.5'	60	0–5	ML		3.5' - 5.5' - SILT w/ some gravel, brown, non plastic, soft, dry, no staining, no odor.	
18.1		dry	SB-NE @8.5-10'	60	5–10	ML		8.5' - 10' - SILT w/ some clay, brown, non plastic, competent hardness, dry, no staining, no odor.	
7.2		dry	SB-NE @13.5-15.5'	70	10–15	ML		13.5' - 15.5' - SILT w/ some gravel, brown, non plastic, competant hardness, dry, no staining, no odor.	
10.0		dry	SB-NE @20.5-21.5'	80	15–20	ML		20.5' - 21.5' - SILT, brown, non plastic, soft, dry, no staining, no odor.	
4.8		dry	SB-NE @25-26.5'	90	20–25	ML		25' - 26.5' - SILT w/ some gravel, brown, non plastic, soft to firm, dry, no staining, no odor.	



BORING LOG/MONITORING WELL COMPLETION DIAGRAM

PROJECT NAME:	SGV Federal		
PROJECT NO:	31403501.019	**LOGGED BY:**	Kevin Fletcher
BORING/WELL ID:	SB-SE	**SAMPLE METHOD:**	Split Spoon
COMPLETION DATE:	02/24/22	**DRILL METHOD:**	Solid Stem Auger
TD (ft bgs):	26'	**DRILLED BY:**	CD&S
DTW (ft bgs):	NA	**DETECTOR:**	MiniRAE 3000
SCREEN SLOT:	NA	**FILTER PACK:**	NA
CASING LENGTH:	NA	**ANNULUS SEAL:**	Bentonite Chips
SCREEN LENGTH:	NA	**SURFACE SEAL:**	NA
HOLE DIAMETER:	4"		
WELL DIAMETER:	NA		
CASING TYPE:	NA		
SCREEN TYPE:	NA		

PID (ppm)	Staining	Moisture Content	Sample ID	Recovery (%)	Depth (ft)	USCS	USCS Graphic	Lithology Description	Well Construction
32.0		dry	SB-SE @5-7'	90	5	ML		5'-7' - SILT, brown, non plastic, soft, dry, no staining, no odor.	
17.6		dry	SB-SE @9.5-11.5'	80	10	ML		9.5' - 11.5' - SILT, brown, non plastic, soft, dry, no staining, no odor.	
19.6		dry	SB-SE @15-16.5'	60	15	ML		15' - 16.5' - SILT w/ some gravel, brown, non plastic, soft, dry, no staining, no odor.	
13.3		dry	SB-SE @20-21.75'	60	20	ML		21' - 21.75' - SILT, brown, non plastic, soft, dry, no staining, no odor.	
10.5		dry	SB-SE @25-26'	80	25	ML		25' - 26' - SILT w/ some gravel, brown, non plastic, hard, dry, no staining, no odor.	

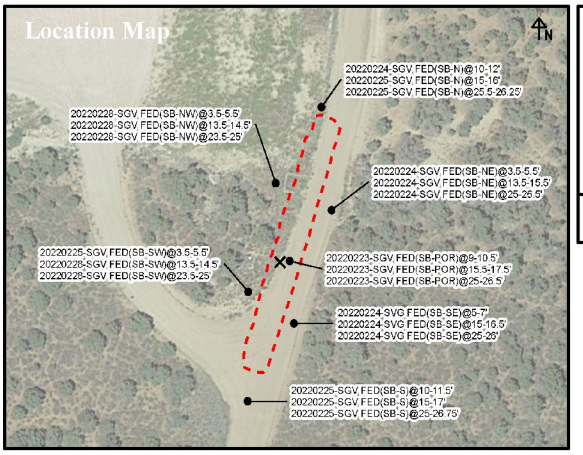


BORING LOG/MONITORING WELL COMPLETION DIAGRAM

PROJECT NAME:	SGV Federal		
PROJECT NO:	31403501.019	**LOGGED BY:**	Kevin Fletcher
BORING/WELL ID:	SB-N	**SAMPLE METHOD:**	Split Spoon
COMPLETION DATE:	02/25/22	**DRILL METHOD:**	SS Auger/ODEX
TD (ft bgs):	26.25'	**DRILLED BY:**	CD&S
DTW (ft bgs):	NA	**DETECTOR:**	MiniRAE 3000
SCREEN SLOT:	NA	**FILTER PACK:**	NA
CASING LENGTH:	NA	**ANNULUS SEAL:**	Bentonite Chips
SCREEN LENGTH:	NA	**SURFACE SEAL:**	NA

HOLE DIAMETER:	4"
WELL DIAMETER:	NA
CASING TYPE:	NA
SCREEN TYPE:	NA

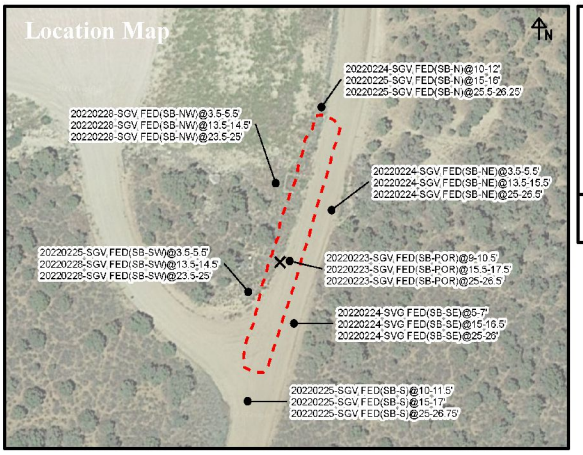
PID (ppm)	Staining	Moisture Content	Sample ID	Recovery (%)	Depth (ft)	USCS	USCS Graphic	Lithology Description	Well Construction
					0			0' - 10' - hydrovacuumed, interval not logged	
2.0		dry	SB-N @10-12'	70	10	ML		10' - 12' - SILT, brown, non plastic, soft, dry, no staining, no odor.	
0.6		dry	SB-N @15-16'	70	15	ML		15' - 16' - SILT, brown, non plastic, soft, dry, no staining, no odor.	
1.8		dry	SB-N @20-20.75'	90	20	ML		20' - 20.75' - SILT w/ some gravel, brown, non plastic, soft, dry, no staining, no odor.	
12.2		dry	SB-N @25.5-26.25'	90	25	ML		25' - 26.25' - SILT w/ some gravel, brown, non plastic, soft, dry, no staining, no odor.	



BORING LOG/MONITORING WELL COMPLETION DIAGRAM

PROJECT NAME:	SGV Federal		
PROJECT NO:	31403501.019	**LOGGED BY:**	Kevin Fletcher
BORING/WELL ID:	SB-S	**SAMPLE METHOD:**	Split Spoon
COMPLETION DATE:	02/25/22	**DRILL METHOD:**	ODEX
TD (ft bgs):	25.75'	**DRILLED BY:**	CD&S
DTW (ft bgs):	NA	**DETECTOR:**	MiniRAE 3000
SCREEN SLOT:	NA	**FILTER PACK:**	NA
CASING LENGTH:	NA	**ANNULUS SEAL:**	Bentonite Chips
SCREEN LENGTH:	NA	**SURFACE SEAL:**	NA
HOLE DIAMETER:	4"		
WELL DIAMETER:	NA		
CASING TYPE:	NA		
SCREEN TYPE:	NA		

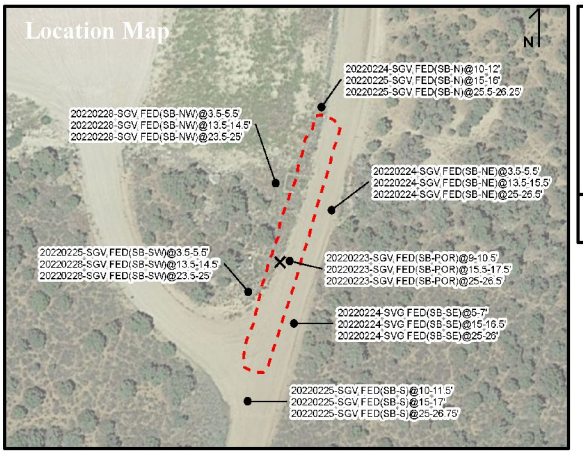
PID (ppm)	Staining	Moisture Content	Sample ID	Recovery (%)	Depth (ft)	USCS	USCS Graphic	Lithology Description	Well Construction
					0			0' - 10' - hydrovacuumed, interval not logged	
					5				
18.2		dry	SB-S @10-11.5'	80	10	ML		10' - 11.5' - SILT w/ some gravel, brown, non plastic, hard, dry, no staining, no odor.	
6.3		dry	SB-S @15-17'	100	15	ML		15' - 17' - SILT, brown, non plastic, soft, dry, no staining, no odor.	
12.8		dry	SB-S @20-21'	80	20	ML		20' - 21' - SILT, brown, non plastic, soft, dry, no staining, no odor.	
1.8		dry	SB-S @25-25.75'	80	25	ML		25' - 25.75' - SILT, brown, non plastic, soft, dry, no staining, no odor.	



BORING LOG/MONITORING WELL COMPLETION DIAGRAM

PROJECT NAME:	SGV Federal		
PROJECT NO:	31403501.019	**LOGGED BY:**	Kevin Fletcher
BORING/WELL ID:	SB-SW	**SAMPLE METHOD:**	Split Spoon
COMPLETION DATE:	02/28/22	**DRILL METHOD:**	ODEX
TD (ft bgs):	25'	**DRILLED BY:**	CD&S
DTW (ft bgs):	NA	**DETECTOR:**	MiniRAE 3000
SCREEN SLOT:	NA	**FILTER PACK:**	NA
CASING LENGTH:	NA	**ANNULUS SEAL:**	Bentonite Chips
SCREEN LENGTH:	NA	**SURFACE SEAL:**	NA
HOLE DIAMETER:	4"		
WELL DIAMETER:	NA		
CASING TYPE:	NA		
SCREEN TYPE:	NA		

PID (ppm)	Staining	Moisture Content	Sample ID	Recovery (%)	Depth (ft)	USCS	USCS Graphic	Lithology Description	Well Construction
32.6		dry	SB-SW @3.5-5.5'	90	0 – 5	ML		3.5'-5.5' - SILT w/ some gravel, brown, non plastic, soft, dry, no staining, no odor.	
42.8		dry	SB-SW @8.5-10'	80	5 – 10	ML		8.5' - 10' - SILT w/ some gravel, brown, non plastic, soft, dry, no staining, no odor.	
28.3		dry	SB-SW @13.5-14.5'	80	10 – 15	ML		13.5' - 14.5' - SILT w/ some gravel, brown, non plastic, soft, dry, no staining, no odor.	
6.2		dry	SB-SW @18.5-19.5'	40	15 – 20	ML		18.5' - 19.5' - SILT w/ some gravel, brown, non plastic, soft, dry, no staining, no odor.	
26.2		dry	SB-SW @23.5-25'	60	20 – 25	ML		23.5' - 25' - SILT w/ some gravel, brown, non plastic, soft, dry, no staining, no odor.	



BORING LOG/MONITORING WELL COMPLETION DIAGRAM

PROJECT NAME:	SGV Federal		
PROJECT NO:	31403501.019	**LOGGED BY:**	Kevin Fletcher
BORING/WELL ID:	SB-NW	**SAMPLE METHOD:**	Split Spoon
COMPLETION DATE:	02/28/22	**DRILL METHOD:**	ODEX
TD (ft bgs):	25'	**DRILLED BY:**	CD&S
DTW (ft bgs):	NA	**DETECTOR:**	MiniRAE 3000
SCREEN SLOT:	NA	**FILTER PACK:**	NA
CASING LENGTH:	NA	**ANNULUS SEAL:**	Bentonite Chips
SCREEN LENGTH:	NA	**SURFACE SEAL:**	NA
HOLE DIAMETER:	4"		
WELL DIAMETER:	NA		
CASING TYPE:	NA		
SCREEN TYPE:	NA		

PID (ppm)	Staining	Moisture Content	Sample ID	Recovery (%)	Depth (ft)	USCS	USCS Graphic	Lithology Description	Well Construction
22.6		dry	SB-NW @3.5-5.5'	80	0–5	ML		3.5'-5.5' - SILT, brown, non plastic, soft, dry, no staining, no odor.	
19.2		dry	SB-NW @8.5-10'	80	5–10	ML		8.5' - 10' SILT w/ some gravel, brown, non plastic, soft, dry, no staining, no odor.	
43.0		dry	SB-NW @13.5-14.5'	90	10–15	ML		13.5' - 14.5' - SILT w/ some gravel, brown, non plastic, soft, dry, no staining, no odor.	
41.2		dry	SB-NW @18.5-19.5'	90	15–20	ML		18.5' - 19.5' - SILT w/ some gravel, brown, non plastic, soft, dry, no staining, no odor.	
10.2		dry	SB-NW @23.5-25'	80	20–25	ML		23.5' - 25' - SILT w/ some gravel, brown, non plastic, soft, dry, no staining, no odor.	

ENCLOSURE B – LABORATORY ANALYTICAL RESULTS

ANALYTICAL REPORT

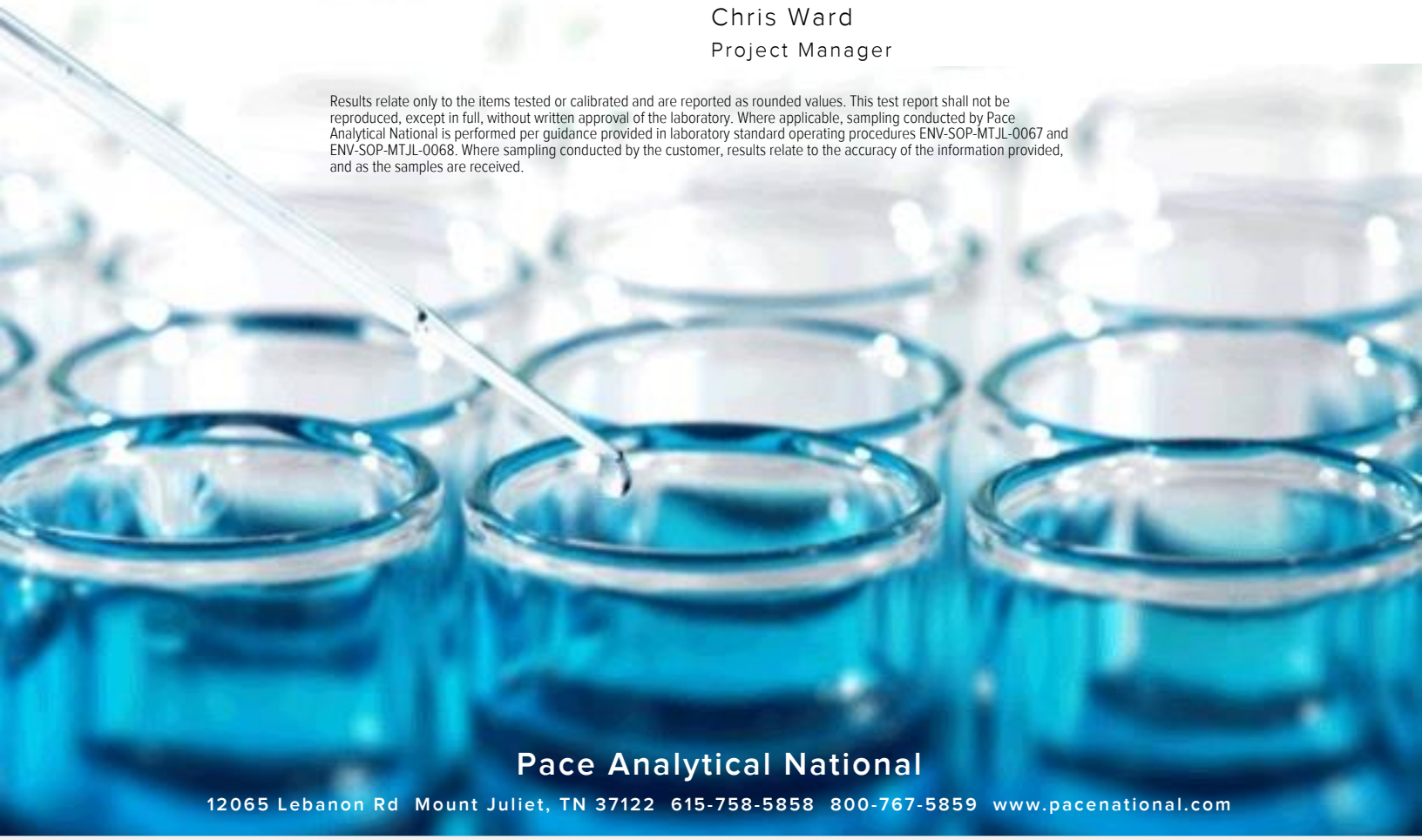
January 24, 2022

Caerus Oil and Gas

Sample Delivery Group:	L1449255
Samples Received:	01/10/2022
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: Chris Ward

Chris Ward
Project Manager



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

TABLE OF CONTENTS

20220104-SGV F-(POC N2) @ 7' L1449255-01 Solid

Collected by: K. Moreland
Collected date/time: 01/04/22 09:40
Received date/time: 01/10/22 10:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1800786	1	01/22/22 16:02	01/22/22 16:02	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1801351	1	01/12/22 19:00	01/13/22 18:38	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1800822	1	01/12/22 15:46	01/13/22 09:26	GI	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1803033	1	01/16/22 00:59	01/16/22 04:09	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1801505	1	01/13/22 14:42	01/19/22 23:52	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1802148	1	01/15/22 07:18	01/19/22 20:57	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1801662	5	01/14/22 11:05	01/17/22 17:05	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1800674	1	01/11/22 11:41	01/11/22 23:56	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1800722	1	01/11/22 11:41	01/12/22 03:51	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1800734	1	01/12/22 04:11	01/12/22 16:24	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1801096	1	01/12/22 16:12	01/12/22 22:06	JNJ	Mt. Juliet, TN

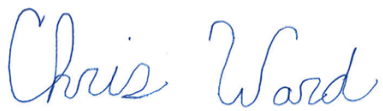
20220104-SGV F-(ROC N3) @ 7' L1449255-02 Solid

Collected by: K. Moreland
Collected date/time: 01/04/22 09:45
Received date/time: 01/10/22 10:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1800786	1	01/22/22 16:05	01/22/22 16:05	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1801351	1	01/12/22 19:00	01/13/22 19:24	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1800822	1	01/12/22 15:46	01/13/22 09:26	GI	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1803033	1	01/16/22 00:59	01/16/22 04:09	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1801505	1	01/13/22 14:42	01/19/22 23:55	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1802148	1	01/15/22 07:18	01/19/22 20:59	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1801662	5	01/14/22 11:05	01/17/22 17:08	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1800674	1	01/11/22 11:41	01/12/22 00:30	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1800722	1	01/11/22 11:41	01/12/22 04:11	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1800734	1	01/12/22 04:11	01/12/22 16:10	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1801096	1	01/12/22 16:12	01/12/22 22:26	JNJ	Mt. Juliet, TN

CASE NARRATIVE

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



Chris Ward
Project Manager

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	SAR				
Sodium Adsorption Ratio	3.08		1	01/22/2022 16:02	WG1800786

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Hexavalent Chromium	ND		1.00	1	01/13/2022 18:38	WG1801351

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	pH				
pH	9.09	T8	1	01/13/2022 09:26	WG1800822

Sample Narrative:

L1449255-01 WG1800822: 9.09 at 20.7C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	548		10.0	1	01/16/2022 04:09	WG1803033

Sample Narrative:

L1449255-01 WG1803033: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Barium	208		0.500	1	01/19/2022 23:52	WG1801505
Cadmium	ND		0.500	1	01/19/2022 23:52	WG1801505
Copper	14.1		2.00	1	01/19/2022 23:52	WG1801505
Lead	8.00		0.500	1	01/19/2022 23:52	WG1801505
Nickel	21.0		2.00	1	01/19/2022 23:52	WG1801505
Selenium	ND		2.00	1	01/19/2022 23:52	WG1801505
Silver	ND		1.00	1	01/19/2022 23:52	WG1801505
Zinc	26.7		5.00	1	01/19/2022 23:52	WG1801505

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/l		mg/l			
Hot Water Sol. Boron	0.329		0.200	1	01/19/2022 20:57	WG1802148

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Arsenic	9.73		1.00	5	01/17/2022 17:05	WG1801662

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
TPH (GC/FID) Low Fraction	0.161		0.100	1	01/11/2022 23:56	WG1800674
(S) a,a,a-Trifluorotoluene(FID)	*109*		*77.0-120*		*01/11/2022 23:56*	WG1800674

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	01/12/2022 03:51	WG1800722
Toluene	ND		0.00500	1	01/12/2022 03:51	WG1800722
Ethylbenzene	ND		0.00250	1	01/12/2022 03:51	WG1800722
Xylenes, Total	ND		0.00650	1	01/12/2022 03:51	WG1800722
1,2,4-Trimethylbenzene	0.0246		0.00500	1	01/12/2022 03:51	WG1800722
1,3,5-Trimethylbenzene	0.0474		0.00500	1	01/12/2022 03:51	WG1800722
(S) Toluene-d8	*108*		*75.0-131*		*01/12/2022 03:51*	WG1800722
(S) 4-Bromofluorobenzene	*113*		*67.0-138*		*01/12/2022 03:51*	WG1800722
(S) 1,2-Dichloroethane-d4	*95.0*		*70.0-130*		*01/12/2022 03:51*	WG1800722

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	10.2		4.00	1	01/12/2022 16:24	WG1800734
C28-C36 Motor Oil Range	ND		4.00	1	01/12/2022 16:24	WG1800734
(S) o-Terphenyl	*65.8*		*18.0-148*		*01/12/2022 16:24*	WG1800734

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	01/12/2022 22:06	WG1801096
Acenaphthene	ND		0.00600	1	01/12/2022 22:06	WG1801096
Acenaphthylene	ND		0.00600	1	01/12/2022 22:06	WG1801096
Benzo(a)anthracene	ND		0.00600	1	01/12/2022 22:06	WG1801096
Benzo(a)pyrene	ND		0.00600	1	01/12/2022 22:06	WG1801096
Benzo(b)fluoranthene	ND		0.00600	1	01/12/2022 22:06	WG1801096
Benzo(g,h,i)perylene	ND		0.00600	1	01/12/2022 22:06	WG1801096
Benzo(k)fluoranthene	ND		0.00600	1	01/12/2022 22:06	WG1801096
Chrysene	ND		0.00600	1	01/12/2022 22:06	WG1801096
Dibenz(a,h)anthracene	ND		0.00600	1	01/12/2022 22:06	WG1801096
Fluoranthene	ND		0.00600	1	01/12/2022 22:06	WG1801096
Fluorene	ND		0.00600	1	01/12/2022 22:06	WG1801096
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	01/12/2022 22:06	WG1801096
Naphthalene	ND		0.0200	1	01/12/2022 22:06	WG1801096
Phenanthrene	ND		0.00600	1	01/12/2022 22:06	WG1801096
Pyrene	ND		0.00600	1	01/12/2022 22:06	WG1801096
1-Methylnaphthalene	ND		0.0200	1	01/12/2022 22:06	WG1801096
2-Methylnaphthalene	ND		0.0200	1	01/12/2022 22:06	WG1801096
2-Chloronaphthalene	ND		0.0200	1	01/12/2022 22:06	WG1801096
(S) p-Terphenyl-d14	*91.0*		*23.0-120*		*01/12/2022 22:06*	WG1801096
(S) Nitrobenzene-d5	*77.2*		*14.0-149*		*01/12/2022 22:06*	WG1801096
(S) 2-Fluorobiphenyl	*88.4*		*34.0-125*		*01/12/2022 22:06*	WG1801096

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	SAR				
Sodium Adsorption Ratio	0.479		1	01/22/2022 16:05	WG1800786

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Hexavalent Chromium	ND		1.00	1	01/13/2022 19:24	WG1801351

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	pH				
pH	8.48	T8	1	01/13/2022 09:26	WG1800822

Sample Narrative:

L1449255-02 WG1800822: 8.48 at 22.7C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	350		10.0	1	01/16/2022 04:09	WG1803033

Sample Narrative:

L1449255-02 WG1803033: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Barium	305		0.500	1	01/19/2022 23:55	WG1801505
Cadmium	ND		0.500	1	01/19/2022 23:55	WG1801505
Copper	16.3		2.00	1	01/19/2022 23:55	WG1801505
Lead	11.8		0.500	1	01/19/2022 23:55	WG1801505
Nickel	21.4		2.00	1	01/19/2022 23:55	WG1801505
Selenium	ND		2.00	1	01/19/2022 23:55	WG1801505
Silver	ND		1.00	1	01/19/2022 23:55	WG1801505
Zinc	41.3		5.00	1	01/19/2022 23:55	WG1801505

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/l		mg/l			
Hot Water Sol. Boron	0.350		0.200	1	01/19/2022 20:59	WG1802148

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Arsenic	7.98		1.00	5	01/17/2022 17:08	WG1801662

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
TPH (GC/FID) Low Fraction	ND		0.100	1	01/12/2022 00:30	WG1800674
(S) a,a,a-Trifluorotoluene(FID)	*108*		*77.0-120*		*01/12/2022 00:30*	WG1800674

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	01/12/2022 04:11	WG1800722
Toluene	ND		0.00500	1	01/12/2022 04:11	WG1800722
Ethylbenzene	ND		0.00250	1	01/12/2022 04:11	WG1800722
Xylenes, Total	ND		0.00650	1	01/12/2022 04:11	WG1800722
1,2,4-Trimethylbenzene	ND		0.00500	1	01/12/2022 04:11	WG1800722
1,3,5-Trimethylbenzene	0.00913		0.00500	1	01/12/2022 04:11	WG1800722
(S) Toluene-d8	*108*		*75.0-131*		*01/12/2022 04:11*	WG1800722
(S) 4-Bromofluorobenzene	*105*		*67.0-138*		*01/12/2022 04:11*	WG1800722
(S) 1,2-Dichloroethane-d4	*96.2*		*70.0-130*		*01/12/2022 04:11*	WG1800722

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	01/12/2022 16:10	WG1800734
C28-C36 Motor Oil Range	ND		4.00	1	01/12/2022 16:10	WG1800734
(S) o-Terphenyl	*57.0*		*18.0-148*		*01/12/2022 16:10*	WG1800734

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	01/12/2022 22:26	WG1801096
Acenaphthene	ND		0.00600	1	01/12/2022 22:26	WG1801096
Acenaphthylene	ND		0.00600	1	01/12/2022 22:26	WG1801096
Benzo(a)anthracene	ND		0.00600	1	01/12/2022 22:26	WG1801096
Benzo(a)pyrene	ND		0.00600	1	01/12/2022 22:26	WG1801096
Benzo(b)fluoranthene	ND		0.00600	1	01/12/2022 22:26	WG1801096
Benzo(g,h,i)perylene	ND		0.00600	1	01/12/2022 22:26	WG1801096
Benzo(k)fluoranthene	ND		0.00600	1	01/12/2022 22:26	WG1801096
Chrysene	ND		0.00600	1	01/12/2022 22:26	WG1801096
Dibenz(a,h)anthracene	ND		0.00600	1	01/12/2022 22:26	WG1801096
Fluoranthene	ND		0.00600	1	01/12/2022 22:26	WG1801096
Fluorene	ND		0.00600	1	01/12/2022 22:26	WG1801096
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	01/12/2022 22:26	WG1801096
Naphthalene	ND		0.0200	1	01/12/2022 22:26	WG1801096
Phenanthrene	ND		0.00600	1	01/12/2022 22:26	WG1801096
Pyrene	ND		0.00600	1	01/12/2022 22:26	WG1801096
1-Methylnaphthalene	ND		0.0200	1	01/12/2022 22:26	WG1801096
2-Methylnaphthalene	ND		0.0200	1	01/12/2022 22:26	WG1801096
2-Chloronaphthalene	ND		0.0200	1	01/12/2022 22:26	WG1801096
(S) p-Terphenyl-d14	*76.5*		*23.0-120*		*01/12/2022 22:26*	WG1801096
(S) Nitrobenzene-d5	*69.1*		*14.0-149*		*01/12/2022 22:26*	WG1801096
(S) 2-Fluorobiphenyl	*76.6*		*34.0-125*		*01/12/2022 22:26*	WG1801096

Method Blank (MB)

(MB) R3752893-1 01/13/22 17:48

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Hexavalent Chromium	1.13		0.255	1.00

L1449255-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1449255-01 01/13/22 18:38 • (DUP) R3752893-3 01/13/22 18:43

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

Laboratory Control Sample (LCS)

(LCS) R3752893-2 01/13/22 18:30

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	10.0	11.9	119	80.0-120	

L1449255-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1449255-01 01/13/22 09:26 • (DUP) R3749589-2 01/13/22 09:26

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	pH	su		%		%
pH	9.09	9.09	1	0.000		1

Sample Narrative:

OS: 9.09 at 20.7C

DUP: 9.09 at 20.1C

L1449809-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1449809-07 01/13/22 09:26 • (DUP) R3749589-3 01/13/22 09:26

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.57	8.62	1	0.582		1

Sample Narrative:

OS: 8.57 at 19.5C

DUP: 8.62 at 19.4C

Laboratory Control Sample (LCS)

(LCS) R3749589-1 01/13/22 09:26

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

Sample Narrative:

LCS: 10 at 19C

Method Blank (MB)

(MB) R3750339-1 01/16/22 04:09

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

L1450729-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1450729-01 01/16/22 04:09 • (DUP) R3750339-3 01/16/22 04:09

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	2600	2600	1	0.116		20

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

L1451283-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1451283-03 01/16/22 04:09 • (DUP) R3750339-4 01/16/22 04:09

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	7950	7730	1	2.81		20

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

Laboratory Control Sample (LCS)

(LCS) R3750339-2 01/16/22 04:09

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	272	102	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3751631-1 01/19/22 22:35

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

Laboratory Control Sample (LCS)

(LCS) R3751631-2 01/19/22 22:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	112	112	80.0-120	
Cadmium	100	107	107	80.0-120	
Copper	100	104	104	80.0-120	
Lead	100	113	113	80.0-120	
Nickel	100	112	112	80.0-120	
Selenium	100	105	105	80.0-120	
Silver	20.0	21.6	108	80.0-120	
Zinc	100	101	101	80.0-120	

L1449041-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1449041-01 01/19/22 22:41 • (MS) R3751631-5 01/19/22 22:49 • (MSD) R3751631-6 01/19/22 22:52

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	99.7	14.6	113	104	98.1	89.2	1	75.0-125			8.20	20
Cadmium	99.7	ND	102	102	102	102	1	75.0-125			0.718	20
Copper	99.7	10.7	108	106	97.3	95.4	1	75.0-125			1.81	20
Lead	99.7	6.73	115	106	109	99.5	1	75.0-125			8.21	20
Nickel	99.7	7.46	116	110	108	102	1	75.0-125			5.41	20
Selenium	99.7	ND	101	98.0	101	98.0	1	75.0-125			2.67	20
Silver	20.0	ND	21.3	21.1	106	105	1	75.0-125			0.971	20
Zinc	99.7	21.6	107	101	85.5	79.2	1	75.0-125			6.07	20

Method Blank (MB)

(MB) R3751637-1 01/19/22 20:49

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hot Water Sol. Boron	0.0202	J	0.0167	0.200

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

(LCS) R3751637-2 01/19/22 20:51 • (LCSD) R3751637-3 01/19/22 20:54

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	0.982	0.984	98.2	98.4	80.0-120			0.222	20

Method Blank (MB)

(MB) R3750706-1 01/17/22 16:42

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) R3750706-2 01/17/22 16:45

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	106	106	80.0-120	

L1449544-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1449544-02 01/17/22 16:48 • (MS) R3750706-5 01/17/22 16:58 • (MSD) R3750706-6 01/17/22 17:01

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	3.76	96.2	95.9	92.4	92.1	5	75.0-125			0.358	20

Method Blank (MB)

(MB) R3749166-2 01/11/22 19:20

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*110*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3749166-1 01/11/22 18:37

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.87	88.5	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*98.0*	*77.0-120*	

L1449055-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1449055-01 01/11/22 20:37 • (MS) R3749166-3 01/12/22 00:51 • (MSD) R3749166-4 01/12/22 01:13

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	9.65	13.8	11.4	75.5	31.8	1	10.0-151	E	E	19.0	28
(S) a,a,a-Trifluorotoluene(FID)					*81.4*	*90.0*		*77.0-120*				

Method Blank (MB)

(MB) R3749148-3 01/11/22 23:55

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	*105*			*75.0-131*
(S) 4-Bromofluorobenzene	*101*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*99.7*			*70.0-130*

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

(LCS) R3749148-1 01/11/22 22:19 • (LCSD) R3749148-2 01/11/22 22:38

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	0.131	105	105	70.0-123			0.000	20
Ethylbenzene	0.125	0.118	0.123	94.4	98.4	74.0-126			4.15	20
Toluene	0.125	0.123	0.128	98.4	102	75.0-121			3.98	20
1,2,4-Trimethylbenzene	0.125	0.119	0.124	95.2	99.2	70.0-126			4.12	20
1,3,5-Trimethylbenzene	0.125	0.122	0.129	97.6	103	73.0-127			5.58	20
Xylenes, Total	0.375	0.357	0.370	95.2	98.7	72.0-127			3.58	20
(S) Toluene-d8				*101*	*102*	*75.0-131*				
(S) 4-Bromofluorobenzene				*97.1*	*97.2*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*101*	*104*	*70.0-130*				

L1449182-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1449182-02 01/12/22 07:28 • (MS) R3749148-4 01/12/22 07:47 • (MSD) R3749148-5 01/12/22 08:06

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 %
Benzene	0.922	ND	0.600	0.623	80.0	83.1	8	10.0-149			3.76	37
Ethylbenzene	0.922	2.00	2.72	2.65	96.0	86.7	8	10.0-160			2.61	38
Toluene	0.922	ND	0.640	0.681	83.0	88.5	8	10.0-156			6.21	38
1,2,4-Trimethylbenzene	0.922	ND	0.636	0.618	84.8	82.4	8	10.0-160			2.87	36
1,3,5-Trimethylbenzene	0.922	ND	0.645	0.588	86.0	78.4	8	10.0-160			9.25	38
Xylenes, Total	2.76	0.167	2.09	2.23	85.5	91.7	8	10.0-160			6.48	38
(S) Toluene-d8					*115*	*112*		*75.0-131*				
(S) 4-Bromofluorobenzene					*112*	*115*		*67.0-138*				
(S) 1,2-Dichloroethane-d4					*98.8*	*90.9*		*70.0-130*				

L1449182-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1449182-02 01/12/22 07:28 • (MS) R3749148-4 01/12/22 07:47 • (MSD) R3749148-5 01/12/22 08:06

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 %

Sample Narrative:

OS: Non-target compounds too high to run at a lower dilution.

Method Blank (MB)

(MB) R3749304-1 01/12/22 10:47

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	*62.5*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3749304-2 01/12/22 11:00

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	36.1	72.2	50.0-150	
(S) o-Terphenyl			*80.6*	*18.0-148*	

L1449179-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1449179-04 01/12/22 14:26 • (MS) R3749304-3 01/12/22 14:40 • (MSD) R3749304-4 01/12/22 14:53

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 %
C10-C28 Diesel Range	48.5	ND	31.8	36.1	65.6	73.8	1	50.0-150			12.7	20
(S) o-Terphenyl					*67.8*	*77.8*		*18.0-148*				

Method Blank (MB)

(MB) R3749693-2 01/12/22 21:27

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	*98.3*			*14.0-149*
(S) 2-Fluorobiphenyl	*111*			*34.0-125*
(S) p-Terphenyl-d14	*119*			*23.0-120*

Laboratory Control Sample (LCS)

(LCS) R3749693-1 01/12/22 21:07

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0802	100	50.0-126	
Acenaphthene	0.0800	0.0803	100	50.0-120	
Acenaphthylene	0.0800	0.0831	104	50.0-120	
Benzo(a)anthracene	0.0800	0.0796	99.5	45.0-120	
Benzo(a)pyrene	0.0800	0.0671	83.9	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0719	89.9	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0713	89.1	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0738	92.3	49.0-125	
Chrysene	0.0800	0.0797	99.6	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0681	85.1	47.0-125	
Fluoranthene	0.0800	0.0833	104	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3749693-1 01/12/22 21:07

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0806	101	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0760	95.0	46.0-125	
Naphthalene	0.0800	0.0750	93.8	50.0-120	
Phenanthrene	0.0800	0.0807	101	47.0-120	
Pyrene	0.0800	0.0837	105	43.0-123	
1-Methylnaphthalene	0.0800	0.0774	96.8	51.0-121	
2-Methylnaphthalene	0.0800	0.0791	98.9	50.0-120	
2-Chloronaphthalene	0.0800	0.0795	99.4	50.0-120	
(S) Nitrobenzene-d5			*101*	*14.0-149*	
(S) 2-Fluorobiphenyl			*111*	*34.0-125*	
(S) p-Terphenyl-d14			*109*	*23.0-120*	

L1449525-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1449525-03 01/13/22 01:23 • (MS) R3749693-3 01/13/22 01:43 • (MSD) R3749693-4 01/13/22 02:02

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0792	ND	0.0650	0.0696	82.1	87.9	1	10.0-145			6.84	30
Acenaphthene	0.0792	ND	0.0665	0.0715	84.0	90.3	1	14.0-127			7.25	27
Acenaphthylene	0.0792	ND	0.0664	0.0715	83.8	90.3	1	21.0-124			7.40	25
Benzo(a)anthracene	0.0792	ND	0.0675	0.0702	80.8	84.2	1	10.0-139			3.92	30
Benzo(a)pyrene	0.0792	ND	0.0723	0.0718	86.4	85.7	1	10.0-141			0.694	31
Benzo(b)fluoranthene	0.0792	0.00658	0.0679	0.0694	77.4	79.3	1	10.0-140			2.18	36
Benzo(g,h,i)perylene	0.0792	ND	0.0666	0.0665	76.7	76.6	1	10.0-140			0.150	33
Benzo(k)fluoranthene	0.0792	ND	0.0619	0.0639	75.4	77.9	1	10.0-137			3.18	31
Chrysene	0.0792	ND	0.0735	0.0743	86.1	87.1	1	10.0-145			1.08	30
Dibenz(a,h)anthracene	0.0792	ND	0.0560	0.0590	70.7	74.5	1	10.0-132			5.22	31
Fluoranthene	0.0792	0.00769	0.0800	0.0799	91.3	91.2	1	10.0-153			0.125	33
Fluorene	0.0792	ND	0.0662	0.0708	83.6	89.4	1	11.0-130			6.72	29
Indeno(1,2,3-cd)pyrene	0.0792	ND	0.0659	0.0687	77.1	80.6	1	10.0-137			4.16	32
Naphthalene	0.0792	ND	0.0689	0.0701	80.5	82.1	1	10.0-135			1.73	27
Phenanthrene	0.0792	ND	0.0786	0.0788	93.0	93.3	1	10.0-144			0.254	31
Pyrene	0.0792	0.00785	0.0790	0.0783	89.8	89.0	1	10.0-148			0.890	35
1-Methylnaphthalene	0.0792	ND	0.0719	0.0738	83.0	85.4	1	10.0-142			2.61	28
2-Methylnaphthalene	0.0792	ND	0.0756	0.0761	86.4	87.0	1	10.0-137			0.659	28
2-Chloronaphthalene	0.0792	ND	0.0656	0.0720	82.8	90.9	1	29.0-120			9.30	24
(S) Nitrobenzene-d5					*79.1*	*84.0*		*14.0-149*				
(S) 2-Fluorobiphenyl					*94.4*	*102*		*34.0-125*				
(S) p-Terphenyl-d14					*90.6*	*97.8*		*23.0-120*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
T8	Sample(s) received past/too close to holding time expiration.

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	LAO000356
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: **SGV Federal Dry Gas Release**

City/State Collected: **Mamm Creek, CO**

Phone: (949) 374-2506
Fax:

Client Project #: **SGV F**

Lab Project #: **SGV F**

Collected by (print): **K. MORELAND**

Site/Facility ID #: **SGV F**

P.O. #: **SGV F**

Collected by (signature): **K. Moreland**

Immediately Packed on Ice N ____ Y X

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day

Quote #

Date Results Needed: ~~Standard TAT~~

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TPH-GRO,DRO,ORO	BTEX	TABLE 915-1-PAH's	SAR, EC, pH, Boron	TABLE 915-1-Metals	Remarks	Sample # (lab only)
20220104-SGVF-(POCN2)@1'	GRAB	SS		1/4/21	0940	3	X	X	X	X	X		01
20220104-SGVF-(POCN3)@1'	↓	↓		↓	0945	↓	↓	↓	↓	↓	↓		02

Chain of Custody Page 1 of 1

Pace Analytical®
National Center for Testing & Innovation

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

L # L1449255
Table #
Acctnum:
Template:
Prelogin:
TSR:
PB:
Shipped Via:

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

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier __ _____

Tracking # 5016 1232 0559

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

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Kate Moreland	1/5/22	1300		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.7 °C Bottles Received:
	1/5/22	1700		1.7+0.2=1.9 6+8=2
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 1/6/22 Time: 1030

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

ANALYTICAL REPORT

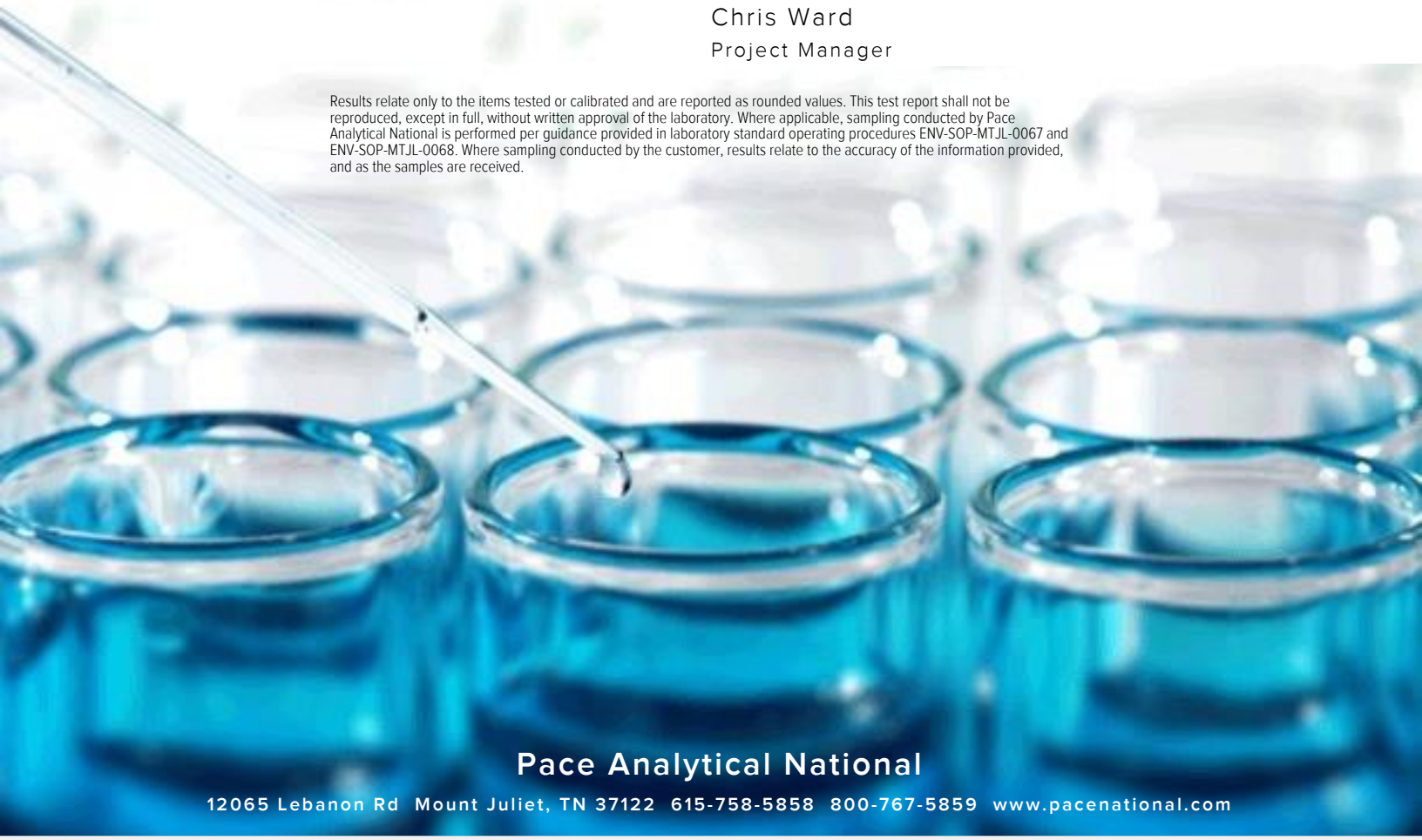
March 07, 2022

Caerus Oil and Gas

Sample Delivery Group:	L1465654
Samples Received:	02/26/2022
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: Chris Ward

Chris Ward
Project Manager



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

TABLE OF CONTENTS

SAMPLE SUMMARY

20220223-SGV FED(SB-POR)@9-10.5' L1465654-01 Solid

Collected by: Kevin Fletcher
Collected date/time: 02/23/22 09:25
Received date/time: 02/26/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1824994	1	03/04/22 13:02	03/04/22 13:02	KMG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1825852	1	03/02/22 02:49	03/02/22 09:07	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1825824	1	03/02/22 10:03	03/04/22 03:25	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1825224	1	03/02/22 17:32	03/04/22 14:20	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1825064	1	02/28/22 08:23	02/28/22 22:32	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1824970	1	02/28/22 08:23	02/28/22 21:28	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1826915	1	03/04/22 05:06	03/04/22 19:27	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1828170	1	03/07/22 04:09	03/07/22 09:35	AMG	Mt. Juliet, TN

20220223-SGV FED(SB-POR)@15.5-17.5' L1465654-03 Solid

Collected by: Kevin Fletcher
Collected date/time: 02/23/22 10:10
Received date/time: 02/26/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1824994	1	03/04/22 13:05	03/04/22 13:05	KMG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1825852	1	03/02/22 02:49	03/02/22 09:07	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1825824	1	03/02/22 10:03	03/04/22 03:33	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1825224	1	03/02/22 17:32	03/04/22 14:23	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1825064	1	02/28/22 08:23	02/28/22 22:54	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1825072	1	02/28/22 08:23	03/01/22 01:30	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1826930	1	03/04/22 05:00	03/04/22 13:49	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1828170	1	03/07/22 04:09	03/07/22 09:53	AMG	Mt. Juliet, TN

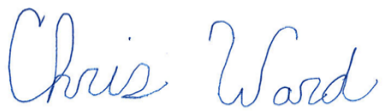
20220223-SGV FED(SB-POR)@25-26.5' L1465654-04 Solid

Collected by: Kevin Fletcher
Collected date/time: 02/23/22 14:55
Received date/time: 02/26/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1824994	1	03/04/22 13:08	03/04/22 13:08	KMG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1825852	1	03/02/22 02:49	03/02/22 09:07	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1825824	1	03/02/22 10:03	03/04/22 03:36	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1825224	1	03/02/22 17:32	03/04/22 14:26	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1825064	1	02/28/22 08:23	02/28/22 23:16	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1825072	1	02/28/22 08:23	03/01/22 01:49	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1826930	1	03/04/22 05:00	03/04/22 11:33	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1828170	1	03/07/22 04:09	03/07/22 10:10	AMG	Mt. Juliet, TN

CASE NARRATIVE

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



Chris Ward
Project Manager

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	7.45		1	03/04/2022 13:02	WG1824994

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	3550		10.0	1	03/02/2022 09:07	WG1825852

Sample Narrative:
L1465654-01 WG1825852: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Barium	282		0.500	1	03/04/2022 03:25	WG1825824

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/l		mg/l			
Hot Water Sol. Boron	0.534		0.200	1	03/04/2022 14:20	WG1825224

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
TPH (GC/FID) Low Fraction	ND		0.100	1	02/28/2022 22:32	WG1825064
(S) a,a,a-Trifluorotoluene(FID)	*108*		*77.0-120*		*02/28/2022 22:32*	WG1825064

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Benzene	ND		0.00100	1	02/28/2022 21:28	WG1824970
Toluene	ND		0.00500	1	02/28/2022 21:28	WG1824970
Ethylbenzene	ND		0.00250	1	02/28/2022 21:28	WG1824970
Xylenes, Total	ND		0.00650	1	02/28/2022 21:28	WG1824970
1,2,4-Trimethylbenzene	ND		0.00500	1	02/28/2022 21:28	WG1824970
1,3,5-Trimethylbenzene	0.00797		0.00500	1	02/28/2022 21:28	WG1824970
(S) Toluene-d8	*104*		*75.0-131*		*02/28/2022 21:28*	WG1824970
(S) 4-Bromofluorobenzene	*90.8*		*67.0-138*		*02/28/2022 21:28*	WG1824970
(S) 1,2-Dichloroethane-d4	*112*		*70.0-130*		*02/28/2022 21:28*	WG1824970

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
C10-C28 Diesel Range	ND		4.00	1	03/04/2022 19:27	WG1826915
C28-C36 Motor Oil Range	ND		4.00	1	03/04/2022 19:27	WG1826915
(S) o-Terphenyl	*70.9*		*18.0-148*		*03/04/2022 19:27*	WG1826915

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Fluorene	ND		0.00600	1	03/07/2022 09:35	WG1828170
1-Methylnaphthalene	0.0231		0.0200	1	03/07/2022 09:35	WG1828170
2-Methylnaphthalene	0.0501		0.0200	1	03/07/2022 09:35	WG1828170

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Naphthalene	ND		0.0200	1	03/07/2022 09:35	WG1828170
(S) p-Terphenyl-d14	*98.6*		*23.0-120*		*03/07/2022 09:35*	WG1828170
(S) Nitrobenzene-d5	*85.0*		*14.0-149*		*03/07/2022 09:35*	WG1828170
(S) 2-Fluorobiphenyl	*86.0*		*34.0-125*		*03/07/2022 09:35*	WG1828170

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.12		1	03/04/2022 13:05	WG1824994

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	187		10.0	1	03/02/2022 09:07	WG1825852

Sample Narrative:
L1465654-03 WG1825852: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Barium	243		0.500	1	03/04/2022 03:33	WG1825824

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/l		mg/l			
Hot Water Sol. Boron	ND		0.200	1	03/04/2022 14:23	WG1825224

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
TPH (GC/FID) Low Fraction	0.535		0.100	1	02/28/2022 22:54	WG1825064
(S) a,a,a-Trifluorotoluene(FID)	*106*		*77.0-120*		*02/28/2022 22:54*	WG1825064

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Benzene	ND		0.00100	1	03/01/2022 01:30	WG1825072
Toluene	ND		0.00500	1	03/01/2022 01:30	WG1825072
Ethylbenzene	ND		0.00250	1	03/01/2022 01:30	WG1825072
Xylenes, Total	0.0198		0.00650	1	03/01/2022 01:30	WG1825072
1,2,4-Trimethylbenzene	0.00925		0.00500	1	03/01/2022 01:30	WG1825072
1,3,5-Trimethylbenzene	0.00675		0.00500	1	03/01/2022 01:30	WG1825072
(S) Toluene-d8	*108*		*75.0-131*		*03/01/2022 01:30*	WG1825072
(S) 4-Bromofluorobenzene	*96.1*		*67.0-138*		*03/01/2022 01:30*	WG1825072
(S) 1,2-Dichloroethane-d4	*102*		*70.0-130*		*03/01/2022 01:30*	WG1825072

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
C10-C28 Diesel Range	4.05		4.00	1	03/04/2022 13:49	WG1826930
C28-C36 Motor Oil Range	ND		4.00	1	03/04/2022 13:49	WG1826930
(S) o-Terphenyl	*63.0*		*18.0-148*		*03/04/2022 13:49*	WG1826930

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Fluorene	ND		0.00600	1	03/07/2022 09:53	WG1828170
1-Methylnaphthalene	ND		0.0200	1	03/07/2022 09:53	WG1828170
2-Methylnaphthalene	0.0205		0.0200	1	03/07/2022 09:53	WG1828170

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Naphthalene	ND		0.0200	1	03/07/2022 09:53	WG1828170
(S) p-Terphenyl-d14	*94.5*		*23.0-120*		*03/07/2022 09:53*	WG1828170
(S) Nitrobenzene-d5	*84.9*		*14.0-149*		*03/07/2022 09:53*	WG1828170
(S) 2-Fluorobiphenyl	*83.8*		*34.0-125*		*03/07/2022 09:53*	WG1828170

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.387		1	03/04/2022 13:08	WG1824994

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	156		10.0	1	03/02/2022 09:07	WG1825852

Sample Narrative:
L1465654-04 WG1825852: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Barium	188		0.500	1	03/04/2022 03:36	WG1825824

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/l		mg/l			
Hot Water Sol. Boron	ND		0.200	1	03/04/2022 14:26	WG1825224

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
TPH (GC/FID) Low Fraction	0.273		0.100	1	02/28/2022 23:16	WG1825064
(S) a,a,a-Trifluorotoluene(FID)	*104*		*77.0-120*		*02/28/2022 23:16*	WG1825064

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Benzene	ND		0.00100	1	03/01/2022 01:49	WG1825072
Toluene	0.00565		0.00500	1	03/01/2022 01:49	WG1825072
Ethylbenzene	ND		0.00250	1	03/01/2022 01:49	WG1825072
Xylenes, Total	0.0256		0.00650	1	03/01/2022 01:49	WG1825072
1,2,4-Trimethylbenzene	0.00980		0.00500	1	03/01/2022 01:49	WG1825072
1,3,5-Trimethylbenzene	0.00723		0.00500	1	03/01/2022 01:49	WG1825072
(S) Toluene-d8	*108*		*75.0-131*		*03/01/2022 01:49*	WG1825072
(S) 4-Bromofluorobenzene	*93.5*		*67.0-138*		*03/01/2022 01:49*	WG1825072
(S) 1,2-Dichloroethane-d4	*101*		*70.0-130*		*03/01/2022 01:49*	WG1825072

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
C10-C28 Diesel Range	5.38		4.00	1	03/04/2022 11:33	WG1826930
C28-C36 Motor Oil Range	5.24		4.00	1	03/04/2022 11:33	WG1826930
(S) o-Terphenyl	*71.4*		*18.0-148*		*03/04/2022 11:33*	WG1826930

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Fluorene	ND		0.00600	1	03/07/2022 10:10	WG1828170
1-Methylnaphthalene	ND		0.0200	1	03/07/2022 10:10	WG1828170
2-Methylnaphthalene	ND		0.0200	1	03/07/2022 10:10	WG1828170

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Naphthalene	ND		0.0200	1	03/07/2022 10:10	WG1828170
(S) p-Terphenyl-d14	*97.8*		*23.0-120*		*03/07/2022 10:10*	WG1828170
(S) Nitrobenzene-d5	*83.7*		*14.0-149*		*03/07/2022 10:10*	WG1828170
(S) 2-Fluorobiphenyl	*86.1*		*34.0-125*		*03/07/2022 10:10*	WG1828170

QUALITY CONTROL SUMMARY

L1465654-01,03,04

Method Blank (MB)

(MB) R3765366-1 03/02/22 09:07

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

L1465650-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1465650-01 03/02/22 09:07 • (DUP) R3765366-3 03/02/22 09:07

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	12000	12700	1	5.76		20

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

L1465650-21 Original Sample (OS) • Duplicate (DUP)

(OS) L1465650-21 03/02/22 09:07 • (DUP) R3765366-4 03/02/22 09:07

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	7530	7460	1	0.934		20

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

Laboratory Control Sample (LCS)

(LCS) R3765366-2 03/02/22 09:07

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	266	99.4	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3766294-1 03/04/22 03:01

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Barium	U		0.0852	0.500

Laboratory Control Sample (LCS)

(LCS) R3766294-2 03/04/22 03:03

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	95.3	95.3	80.0-120	

L1465665-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1465665-01 03/04/22 03:06 • (MS) R3766294-5 03/04/22 03:14 • (MSD) R3766294-6 03/04/22 03:17

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	100	163	281	269	119	107	1	75.0-125			4.35	20

Method Blank (MB)

(MB) R3766596-1 03/04/22 14:13

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

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

(LCS) R3766596-2 03/04/22 14:15 • (LCSD) R3766596-3 03/04/22 14:18

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	1.06	1.05	106	105	80.0-120			0.506	20

Method Blank (MB)

(MB) R3764901-2 02/28/22 20:23

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*110*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3764901-1 02/28/22 19:27

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.29	78.0	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*97.1*	*77.0-120*	

L1465654-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1465654-01 02/28/22 22:32 • (MS) R3764901-3 03/01/22 04:40 • (MSD) R3764901-4 03/01/22 05:39

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	ND	2.97	3.82	52.7	68.2	1	10.0-151			25.0	28
(S) a,a,a-Trifluorotoluene(FID)					*97.2*	*97.6*		*77.0-120*				

Method Blank (MB)

(MB) R3764769-3 02/28/22 13:32

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	*102*			*75.0-131*
(S) 4-Bromofluorobenzene	*89.8*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*105*			*70.0-130*

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

(LCS) R3764769-1 02/28/22 11:57 • (LCSD) R3764769-2 02/28/22 12:16

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	0.108	94.4	86.4	70.0-123			8.85	20
Toluene	0.125	0.115	0.107	92.0	85.6	75.0-121			7.21	20
Ethylbenzene	0.125	0.130	0.120	104	96.0	74.0-126			8.00	20
Xylenes, Total	0.375	0.389	0.356	104	94.9	72.0-127			8.86	20
1,2,4-Trimethylbenzene	0.125	0.128	0.119	102	95.2	70.0-126			7.29	20
1,3,5-Trimethylbenzene	0.125	0.123	0.112	98.4	89.6	73.0-127			9.36	20
(S) Toluene-d8				*95.1*	*95.1*	*75.0-131*				
(S) 4-Bromofluorobenzene				*99.7*	*96.2*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*120*	*117*	*70.0-130*				

L1465654-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1465654-01 02/28/22 21:28 • (MS) R3764769-4 02/28/22 21:47 • (MSD) R3764769-5 02/28/22 22:06

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 %
Benzene	0.125	ND	0.120	0.116	96.0	92.8	1	10.0-149			3.39	37
Toluene	0.125	ND	0.121	0.121	96.8	96.8	1	10.0-156			0.000	38
Ethylbenzene	0.125	ND	0.134	0.129	107	103	1	10.0-160			3.80	38
Xylenes, Total	0.375	ND	0.395	0.395	105	105	1	10.0-160			0.000	38
1,2,4-Trimethylbenzene	0.125	ND	0.140	0.148	110	116	1	10.0-160			5.56	36
1,3,5-Trimethylbenzene	0.125	0.00797	0.149	0.162	113	123	1	10.0-160			8.36	38
(S) Toluene-d8					*99.4*	*98.8*		*75.0-131*				
(S) 4-Bromofluorobenzene					*94.4*	*89.3*		*67.0-138*				
(S) 1,2-Dichloroethane-d4					*115*	*114*		*70.0-130*				

Method Blank (MB)

(MB) R3764849-3 02/28/22 20:46

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	*107*			*75.0-131*
(S) 4-Bromofluorobenzene	*95.4*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*104*			*70.0-130*

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

(LCS) R3764849-1 02/28/22 19:23 • (LCSD) R3764849-2 02/28/22 19:42

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.114	0.117	91.2	93.6	70.0-123			2.60	20
Toluene	0.125	0.101	0.104	80.8	83.2	75.0-121			2.93	20
Ethylbenzene	0.125	0.103	0.106	82.4	84.8	74.0-126			2.87	20
Xylenes, Total	0.375	0.304	0.316	81.1	84.3	72.0-127			3.87	20
1,2,4-Trimethylbenzene	0.125	0.105	0.107	84.0	85.6	70.0-126			1.89	20
1,3,5-Trimethylbenzene	0.125	0.107	0.109	85.6	87.2	73.0-127			1.85	20
(S) Toluene-d8				*99.1*	*98.8*	*75.0-131*				
(S) 4-Bromofluorobenzene				*98.6*	*100*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*110*	*111*	*70.0-130*				

L1465787-11 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1465787-11 03/01/22 02:46 • (MS) R3764849-4 03/01/22 03:43 • (MSD) R3764849-5 03/01/22 04:02

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	ND	0.127	0.142	102	114	1	10.0-149			11.2	37
Toluene	0.125	ND	0.134	0.134	107	107	1	10.0-156			0.000	38
Ethylbenzene	0.125	ND	0.130	0.135	104	108	1	10.0-160			3.77	38
Xylenes, Total	0.375	ND	0.377	0.393	101	105	1	10.0-160			4.16	38
1,2,4-Trimethylbenzene	0.125	ND	0.216	0.150	173	120	1	10.0-160	J5	J3	36.1	36
1,3,5-Trimethylbenzene	0.125	ND	0.168	0.148	134	118	1	10.0-160			12.7	38
(S) Toluene-d8					*107*	*99.3*		*75.0-131*				
(S) 4-Bromofluorobenzene					*95.1*	*99.1*		*67.0-138*				
(S) 1,2-Dichloroethane-d4					*97.2*	*108*		*70.0-130*				

Method Blank (MB)

(MB) R3766723-1 03/04/22 15:23

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	0.604	J	0.274	4.00
(S) o-Terphenyl	*71.3*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3766723-2 03/04/22 15:36

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	39.7	79.4	50.0-150	
(S) o-Terphenyl			*97.0*	*18.0-148*	

L1465255-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1465255-05 03/05/22 10:31 • (MS) R3766725-1 03/05/22 10:44 • (MSD) R3766725-2 03/05/22 10:57

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	49.7	1040	692	852	0.000	0.000	5	50.0-150	V	J3 V	20.7	20
(S) o-Terphenyl					*76.1*	*78.9*		*18.0-148*				

Method Blank (MB)

(MB) R3766716-1 03/04/22 11:03

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	*62.5*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3766716-2 03/04/22 11:18

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	38.6	77.2	50.0-150	
(S) o-Terphenyl			*84.7*	*18.0-148*	

L1465680-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1465680-07 03/04/22 15:05 • (MS) R3766716-3 03/04/22 15:21 • (MSD) R3766716-4 03/04/22 15:36

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	48.9	ND	37.3	34.9	70.9	66.1	1	50.0-150			6.65	20
(S) o-Terphenyl					*78.7*	*70.0*		*18.0-148*				

Method Blank (MB)

(MB) R3767072-2 03/07/22 09:18

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Fluorene	U		0.00205	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
Naphthalene	U		0.00408	0.0200
(S) p-Terphenyl-d14	*114*			*23.0-120*
(S) Nitrobenzene-d5	*96.5*			*14.0-149*
(S) 2-Fluorobiphenyl	*97.6*			*34.0-125*

Laboratory Control Sample (LCS)

(LCS) R3767072-1 03/07/22 09:00

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0715	89.4	49.0-120	
1-Methylnaphthalene	0.0800	0.0713	89.1	51.0-121	
2-Methylnaphthalene	0.0800	0.0683	85.4	50.0-120	
Naphthalene	0.0800	0.0705	88.1	50.0-120	
(S) p-Terphenyl-d14			*111*	*23.0-120*	
(S) Nitrobenzene-d5			*99.3*	*14.0-149*	
(S) 2-Fluorobiphenyl			*97.7*	*34.0-125*	

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.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
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	LAO000356
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: **SGV Federal Dry Gas Release**

City/State Collected: ~~Mamm~~ Wallace Creek, CO

Phone: Fax:

Client Project # **SGV F**

Lab Project # **SGV F**

Collected by (print): Kevin Fletcher

Site/Facility ID # **SGV F**

P.O. # **SGV F**

Collected by (signature):

Quote #

Immediately Packed on Ice N ___ Y X

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**

Chain of Custody Page 1 of 1

Pace Analytical® National Center for Testing & Innovation

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

L# 1465654
1177

Acctnum:
Template:
Prelogin:
TSR:
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TPH- GRO,DRO,ORO	BTEX	1,2,4- trimethylbenzene	SAR, EC, Boron, barium	1,3,5- trimethylbenzene	napthalene, flourene	1-methylnapthalene	2-methylnapthalene	Remarks	Sample # (lab only)
20220223-SGVFed(SB-POR)@9-10.5	Grab	SS	NA	2/23/22	0925	2	X	X	X	X	X	X	X	X		-01
20220223-SGVFed(SB-POR)@15.5-17.5	Grab	SS	↓	↓	1010	↓	↓	↓	↓	↓	↓	↓	↓	↓		-02
20220223-SGVFed(SB-POR)@25-26.5	Grab	SS	↓	↓	1455	↓	↓	↓	↓	↓	↓	↓	↓	↓		-03

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

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier __ _____

Tracking # 5433 8386 0730

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: ✓Y __N
Preservation Correct/Checked: ✓Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
	2/25/22	1300		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 2.4 °C Bottles Received:
	2/25/22	1700		2.4 0
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:
				2/26/22 0930

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

ANALYTICAL REPORT

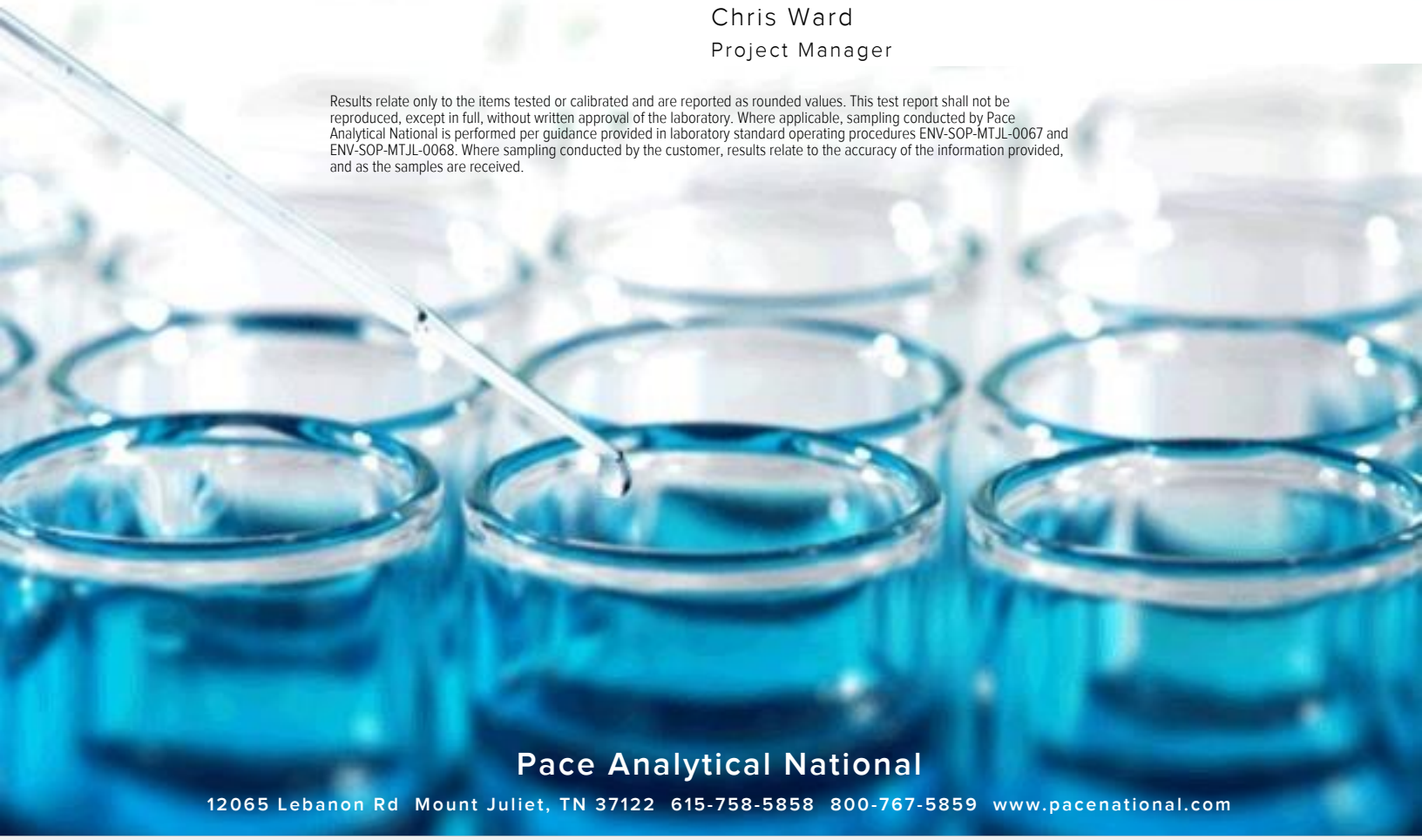
March 07, 2022

Caerus Oil and Gas

Sample Delivery Group:	L1465680
Samples Received:	02/26/2022
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: Chris Ward

Chris Ward
Project Manager



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

TABLE OF CONTENTS

20220224-SGV FED(SB-NE)@3.5-5.5' L1465680-01 Solid

Collected by: Kevin Fletcher | Collected date/time: 02/24/22 08:00 | Received date/time: 02/26/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1824998	1	03/04/22 17:17	03/04/22 17:17	KMG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1825853	1	03/06/22 03:39	03/06/22 06:43	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1825837	1	03/02/22 08:04	03/03/22 11:32	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1825224	1	03/02/22 17:32	03/04/22 14:48	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1825064	1	02/28/22 14:39	03/01/22 01:26	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1825054	1	02/28/22 14:39	03/01/22 05:07	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1826930	1	03/04/22 05:00	03/04/22 12:48	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1826933	1	03/04/22 05:08	03/04/22 14:17	LEA	Mt. Juliet, TN

20220224-SGV FED(SB-NE)@13.5-15.5' L1465680-02 Solid

Collected by: Kevin Fletcher | Collected date/time: 02/24/22 08:50 | Received date/time: 02/26/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1824998	1	03/04/22 17:20	03/04/22 17:20	KMG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1825853	1	03/06/22 03:39	03/06/22 06:43	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1825824	1	03/02/22 10:03	03/04/22 03:55	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1825224	1	03/02/22 17:32	03/04/22 14:50	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1825064	1	02/28/22 14:39	03/01/22 01:47	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1825054	1	02/28/22 14:39	03/01/22 05:26	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1826930	1	03/04/22 05:00	03/04/22 13:04	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1826933	1	03/04/22 05:08	03/04/22 14:37	LEA	Mt. Juliet, TN

20220224-SGV FED(SB-NE)@25-26.5' L1465680-03 Solid

Collected by: Kevin Fletcher | Collected date/time: 02/24/22 13:10 | Received date/time: 02/26/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1824998	1	03/04/22 17:23	03/04/22 17:23	KMG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1825853	1	03/06/22 03:39	03/06/22 06:43	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1825824	1	03/02/22 10:03	03/04/22 03:57	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1825224	1	03/02/22 17:32	03/04/22 14:53	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1825064	1	02/28/22 14:39	03/01/22 02:09	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1825054	1	02/28/22 14:39	03/01/22 06:11	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1826930	1	03/04/22 05:00	03/04/22 13:19	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1828170	1	03/07/22 04:09	03/07/22 10:27	AMG	Mt. Juliet, TN

20220224-SGV FED(SB-SE)@5-7' L1465680-04 Solid

Collected by: Kevin Fletcher | Collected date/time: 02/24/22 13:45 | Received date/time: 02/26/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1824998	1	03/04/22 17:26	03/04/22 17:26	KMG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1825853	1	03/06/22 03:39	03/06/22 06:43	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1825824	1	03/02/22 10:03	03/04/22 04:06	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1825224	1	03/02/22 17:32	03/04/22 14:56	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1825064	1	02/28/22 14:39	03/01/22 02:31	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1825054	1	02/28/22 14:39	03/01/22 06:30	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1826930	1	03/04/22 05:00	03/04/22 13:34	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1826933	1	03/04/22 05:08	03/04/22 14:57	LEA	Mt. Juliet, TN

20220224-SGV FED(SB-SE)@15-16.5' L1465680-05 Solid

Collected by: Kevin Fletcher | Collected date/time: 02/24/22 14:25 | Received date/time: 02/26/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1824998	1	03/04/22 17:29	03/04/22 17:29	KMG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1825853	1	03/06/22 03:39	03/06/22 06:43	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1825824	1	03/02/22 10:03	03/04/22 04:08	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1825224	1	03/02/22 17:32	03/04/22 14:58	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1825064	1	02/28/22 14:39	03/01/22 02:52	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1825079	1	02/28/22 14:39	03/01/22 00:53	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1826930	1	03/04/22 05:00	03/04/22 14:35	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1826933	1	03/04/22 05:08	03/04/22 15:17	LEA	Mt. Juliet, TN

20220224-SGV FED(SB-SE)@25-26' L1465680-06 Solid

Collected by: Kevin Fletcher | Collected date/time: 02/24/22 15:40 | Received date/time: 02/26/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1824998	1	03/04/22 17:31	03/04/22 17:31	KMG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1825853	1	03/06/22 03:39	03/06/22 06:43	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1825824	1	03/02/22 10:03	03/04/22 04:11	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1825224	1	03/02/22 17:32	03/04/22 15:01	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1825064	1	02/28/22 14:39	03/01/22 03:14	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1825079	1	02/28/22 14:39	03/01/22 01:12	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1826930	1	03/04/22 05:00	03/04/22 14:50	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1826937	1	03/04/22 05:17	03/04/22 11:04	LEA	Mt. Juliet, TN

20220224-SGV FED(SB-N)@10-12' L1465680-07 Solid

Collected by: Kevin Fletcher | Collected date/time: 02/24/22 16:15 | Received date/time: 02/26/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1824998	1	03/04/22 17:34	03/04/22 17:34	KMG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1825853	1	03/06/22 03:39	03/06/22 06:43	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1825824	1	03/02/22 10:03	03/04/22 04:14	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1825224	1	03/02/22 17:32	03/04/22 15:04	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1825064	1	02/28/22 14:39	03/01/22 03:36	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1825079	1	02/28/22 14:39	03/01/22 01:30	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1826930	1	03/04/22 05:00	03/04/22 15:05	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1826937	1	03/04/22 05:17	03/04/22 11:21	LEA	Mt. Juliet, TN

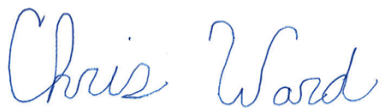
20220224-SGV FED(SB-N)@15-16' L1465680-08 Solid

Collected by: Kevin Fletcher | Collected date/time: 02/24/22 16:40 | Received date/time: 02/26/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1824998	1	03/04/22 17:37	03/04/22 17:37	KMG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1825853	1	03/06/22 03:39	03/06/22 06:43	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1825824	1	03/02/22 10:03	03/04/22 04:17	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1825224	1	03/02/22 17:32	03/04/22 15:07	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1825064	1	02/28/22 14:39	03/01/22 03:57	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1825079	1	02/28/22 14:39	03/01/22 01:49	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1828156	1	03/07/22 06:06	03/07/22 14:37	JDG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1826937	1	03/04/22 05:17	03/04/22 11:39	LEA	Mt. Juliet, TN

CASE NARRATIVE

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



Chris Ward
Project Manager

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.615		1	03/04/2022 17:17	WG1824998

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	965		10.0	1	03/06/2022 06:43	WG1825853

Sample Narrative:
L1465680-01 WG1825853: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Barium	245	O1	0.500	1	03/03/2022 11:32	WG1825837

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/l		mg/l			
Hot Water Sol. Boron	0.571		0.200	1	03/04/2022 14:48	WG1825224

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
TPH (GC/FID) Low Fraction	0.219		0.100	1	03/01/2022 01:26	WG1825064
(S) a,a,a-Trifluorotoluene(FID)	*108*		*77.0-120*		*03/01/2022 01:26*	WG1825064

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Benzene	0.00158		0.00100	1	03/01/2022 05:07	WG1825054
Toluene	0.0118		0.00500	1	03/01/2022 05:07	WG1825054
Ethylbenzene	ND		0.00250	1	03/01/2022 05:07	WG1825054
Xylenes, Total	0.0604		0.00650	1	03/01/2022 05:07	WG1825054
1,2,4-Trimethylbenzene	0.0149		0.00500	1	03/01/2022 05:07	WG1825054
1,3,5-Trimethylbenzene	0.0111		0.00500	1	03/01/2022 05:07	WG1825054
(S) Toluene-d8	*99.9*		*75.0-131*		*03/01/2022 05:07*	WG1825054
(S) 4-Bromofluorobenzene	*90.2*		*67.0-138*		*03/01/2022 05:07*	WG1825054
(S) 1,2-Dichloroethane-d4	*99.3*		*70.0-130*		*03/01/2022 05:07*	WG1825054

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
C10-C28 Diesel Range	4.12		4.00	1	03/04/2022 12:48	WG1826930
C28-C36 Motor Oil Range	5.24		4.00	1	03/04/2022 12:48	WG1826930
(S) o-Terphenyl	*69.7*		*18.0-148*		*03/04/2022 12:48*	WG1826930

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Fluorene	ND		0.00600	1	03/04/2022 14:17	WG1826933
1-Methylnaphthalene	ND		0.0200	1	03/04/2022 14:17	WG1826933
2-Methylnaphthalene	ND		0.0200	1	03/04/2022 14:17	WG1826933

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Naphthalene	ND		0.0200	1	03/04/2022 14:17	WG1826933
(S) p-Terphenyl-d14	*111*		*23.0-120*		*03/04/2022 14:17*	WG1826933
(S) Nitrobenzene-d5	*79.3*		*14.0-149*		*03/04/2022 14:17*	WG1826933
(S) 2-Fluorobiphenyl	*88.8*		*34.0-125*		*03/04/2022 14:17*	WG1826933

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.232		1	03/04/2022 17:20	WG1824998

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	536		10.0	1	03/06/2022 06:43	WG1825853

Sample Narrative:
L1465680-02 WG1825853: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Barium	261		0.500	1	03/04/2022 03:55	WG1825824

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/l		mg/l			
Hot Water Sol. Boron	ND		0.200	1	03/04/2022 14:50	WG1825224

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
TPH (GC/FID) Low Fraction	0.161		0.100	1	03/01/2022 01:47	WG1825064
(S) a,a,a-Trifluorotoluene(FID)	*106*		*77.0-120*		*03/01/2022 01:47*	WG1825064

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Benzene	ND		0.00100	1	03/01/2022 05:26	WG1825054
Toluene	ND		0.00500	1	03/01/2022 05:26	WG1825054
Ethylbenzene	ND		0.00250	1	03/01/2022 05:26	WG1825054
Xylenes, Total	ND		0.00650	1	03/01/2022 05:26	WG1825054
1,2,4-Trimethylbenzene	ND		0.00500	1	03/01/2022 05:26	WG1825054
1,3,5-Trimethylbenzene	ND		0.00500	1	03/01/2022 05:26	WG1825054
(S) Toluene-d8	*102*		*75.0-131*		*03/01/2022 05:26*	WG1825054
(S) 4-Bromofluorobenzene	*88.9*		*67.0-138*		*03/01/2022 05:26*	WG1825054
(S) 1,2-Dichloroethane-d4	*96.3*		*70.0-130*		*03/01/2022 05:26*	WG1825054

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
C10-C28 Diesel Range	ND		4.00	1	03/04/2022 13:04	WG1826930
C28-C36 Motor Oil Range	5.79		4.00	1	03/04/2022 13:04	WG1826930
(S) o-Terphenyl	*73.5*		*18.0-148*		*03/04/2022 13:04*	WG1826930

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Fluorene	ND		0.00600	1	03/04/2022 14:37	WG1826933
1-Methylnaphthalene	ND		0.0200	1	03/04/2022 14:37	WG1826933
2-Methylnaphthalene	ND		0.0200	1	03/04/2022 14:37	WG1826933

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Naphthalene	ND		0.0200	1	03/04/2022 14:37	WG1826933
(S) p-Terphenyl-d14	*107*		*23.0-120*		*03/04/2022 14:37*	WG1826933
(S) Nitrobenzene-d5	*76.3*		*14.0-149*		*03/04/2022 14:37*	WG1826933
(S) 2-Fluorobiphenyl	*84.6*		*34.0-125*		*03/04/2022 14:37*	WG1826933

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.576		1	03/04/2022 17:23	WG1824998

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	144		10.0	1	03/06/2022 06:43	WG1825853

Sample Narrative:
L1465680-03 WG1825853: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Barium	259		0.500	1	03/04/2022 03:57	WG1825824

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/l		mg/l			
Hot Water Sol. Boron	ND		0.200	1	03/04/2022 14:53	WG1825224

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
TPH (GC/FID) Low Fraction	0.245		0.100	1	03/01/2022 02:09	WG1825064
(S) a,a,a-Trifluorotoluene(FID)	*105*		*77.0-120*		*03/01/2022 02:09*	WG1825064

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Benzene	ND		0.00100	1	03/01/2022 06:11	WG1825054
Toluene	ND		0.00500	1	03/01/2022 06:11	WG1825054
Ethylbenzene	ND		0.00250	1	03/01/2022 06:11	WG1825054
Xylenes, Total	0.0146		0.00650	1	03/01/2022 06:11	WG1825054
1,2,4-Trimethylbenzene	0.00633		0.00500	1	03/01/2022 06:11	WG1825054
1,3,5-Trimethylbenzene	ND		0.00500	1	03/01/2022 06:11	WG1825054
(S) Toluene-d8	*104*		*75.0-131*		*03/01/2022 06:11*	WG1825054
(S) 4-Bromofluorobenzene	*94.2*		*67.0-138*		*03/01/2022 06:11*	WG1825054
(S) 1,2-Dichloroethane-d4	*98.6*		*70.0-130*		*03/01/2022 06:11*	WG1825054

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
C10-C28 Diesel Range	ND		4.00	1	03/04/2022 13:19	WG1826930
C28-C36 Motor Oil Range	ND		4.00	1	03/04/2022 13:19	WG1826930
(S) o-Terphenyl	*41.1*		*18.0-148*		*03/04/2022 13:19*	WG1826930

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Fluorene	ND		0.00600	1	03/07/2022 10:27	WG1828170
1-Methylnaphthalene	ND		0.0200	1	03/07/2022 10:27	WG1828170
2-Methylnaphthalene	ND		0.0200	1	03/07/2022 10:27	WG1828170

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Naphthalene	ND		0.0200	1	03/07/2022 10:27	WG1828170
(S) p-Terphenyl-d14	*102*		*23.0-120*		*03/07/2022 10:27*	WG1828170
(S) Nitrobenzene-d5	*89.8*		*14.0-149*		*03/07/2022 10:27*	WG1828170
(S) 2-Fluorobiphenyl	*91.1*		*34.0-125*		*03/07/2022 10:27*	WG1828170

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	4.16		1	03/04/2022 17:26	WG1824998

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	1520		10.0	1	03/06/2022 06:43	WG1825853

Sample Narrative:
L1465680-04 WG1825853: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Barium	222		0.500	1	03/04/2022 04:06	WG1825824

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/l		mg/l			
Hot Water Sol. Boron	0.912		0.200	1	03/04/2022 14:56	WG1825224

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
TPH (GC/FID) Low Fraction	ND		0.100	1	03/01/2022 02:31	WG1825064
(S) a,a,a-Trifluorotoluene(FID)	*108*		*77.0-120*		*03/01/2022 02:31*	WG1825064

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Benzene	ND		0.00100	1	03/01/2022 06:30	WG1825054
Toluene	ND		0.00500	1	03/01/2022 06:30	WG1825054
Ethylbenzene	ND		0.00250	1	03/01/2022 06:30	WG1825054
Xylenes, Total	ND		0.00650	1	03/01/2022 06:30	WG1825054
1,2,4-Trimethylbenzene	ND		0.00500	1	03/01/2022 06:30	WG1825054
1,3,5-Trimethylbenzene	ND		0.00500	1	03/01/2022 06:30	WG1825054
(S) Toluene-d8	*101*		*75.0-131*		*03/01/2022 06:30*	WG1825054
(S) 4-Bromofluorobenzene	*90.1*		*67.0-138*		*03/01/2022 06:30*	WG1825054
(S) 1,2-Dichloroethane-d4	*96.8*		*70.0-130*		*03/01/2022 06:30*	WG1825054

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
C10-C28 Diesel Range	16.9		4.00	1	03/04/2022 13:34	WG1826930
C28-C36 Motor Oil Range	12.5		4.00	1	03/04/2022 13:34	WG1826930
(S) o-Terphenyl	*65.0*		*18.0-148*		*03/04/2022 13:34*	WG1826930

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Fluorene	ND		0.00600	1	03/04/2022 14:57	WG1826933
1-Methylnaphthalene	ND		0.0200	1	03/04/2022 14:57	WG1826933
2-Methylnaphthalene	ND		0.0200	1	03/04/2022 14:57	WG1826933

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Naphthalene	ND		0.0200	1	03/04/2022 14:57	WG1826933
(S) p-Terphenyl-d14	*99.0*		*23.0-120*		*03/04/2022 14:57*	WG1826933
(S) Nitrobenzene-d5	*71.0*		*14.0-149*		*03/04/2022 14:57*	WG1826933
(S) 2-Fluorobiphenyl	*78.8*		*34.0-125*		*03/04/2022 14:57*	WG1826933

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	SAR				
Sodium Adsorption Ratio	2.55		1	03/04/2022 17:29	WG1824998

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	721		10.0	1	03/06/2022 06:43	WG1825853

Sample Narrative:
L1465680-05 WG1825853: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Barium	215		0.500	1	03/04/2022 04:08	WG1825824

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/l		mg/l			
Hot Water Sol. Boron	0.311		0.200	1	03/04/2022 14:58	WG1825224

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
TPH (GC/FID) Low Fraction	ND		0.100	1	03/01/2022 02:52	WG1825064
(S) a,a,a-Trifluorotoluene(FID)	*108*		*77.0-120*		*03/01/2022 02:52*	WG1825064

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Benzene	ND		0.00100	1	03/01/2022 00:53	WG1825079
Toluene	ND		0.00500	1	03/01/2022 00:53	WG1825079
Ethylbenzene	ND		0.00250	1	03/01/2022 00:53	WG1825079
Xylenes, Total	ND		0.00650	1	03/01/2022 00:53	WG1825079
1,2,4-Trimethylbenzene	ND		0.00500	1	03/01/2022 00:53	WG1825079
1,3,5-Trimethylbenzene	ND		0.00500	1	03/01/2022 00:53	WG1825079
(S) Toluene-d8	*113*		*75.0-131*		*03/01/2022 00:53*	WG1825079
(S) 4-Bromofluorobenzene	*101*		*67.0-138*		*03/01/2022 00:53*	WG1825079
(S) 1,2-Dichloroethane-d4	*94.3*		*70.0-130*		*03/01/2022 00:53*	WG1825079

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
C10-C28 Diesel Range	19.6		4.00	1	03/04/2022 14:35	WG1826930
C28-C36 Motor Oil Range	6.89		4.00	1	03/04/2022 14:35	WG1826930
(S) o-Terphenyl	*61.0*		*18.0-148*		*03/04/2022 14:35*	WG1826930

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Fluorene	ND		0.00600	1	03/04/2022 15:17	WG1826933
1-Methylnaphthalene	ND		0.0200	1	03/04/2022 15:17	WG1826933
2-Methylnaphthalene	ND		0.0200	1	03/04/2022 15:17	WG1826933

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Naphthalene	ND		0.0200	1	03/04/2022 15:17	WG1826933
(S) p-Terphenyl-d14	*89.5*		*23.0-120*		*03/04/2022 15:17*	WG1826933
(S) Nitrobenzene-d5	*64.7*		*14.0-149*		*03/04/2022 15:17*	WG1826933
(S) 2-Fluorobiphenyl	*71.1*		*34.0-125*		*03/04/2022 15:17*	WG1826933

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.697		1	03/04/2022 17:31	WG1824998

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	172		10.0	1	03/06/2022 06:43	WG1825853

Sample Narrative:
L1465680-06 WG1825853: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Barium	288		0.500	1	03/04/2022 04:11	WG1825824

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/l		mg/l			
Hot Water Sol. Boron	ND		0.200	1	03/04/2022 15:01	WG1825224

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
TPH (GC/FID) Low Fraction	0.248		0.100	1	03/01/2022 03:14	WG1825064
(S) a,a,a-Trifluorotoluene(FID)	*106*		*77.0-120*		*03/01/2022 03:14*	WG1825064

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Benzene	ND		0.00100	1	03/01/2022 01:12	WG1825079
Toluene	ND		0.00500	1	03/01/2022 01:12	WG1825079
Ethylbenzene	ND		0.00250	1	03/01/2022 01:12	WG1825079
Xylenes, Total	0.0180		0.00650	1	03/01/2022 01:12	WG1825079
1,2,4-Trimethylbenzene	0.00958		0.00500	1	03/01/2022 01:12	WG1825079
1,3,5-Trimethylbenzene	0.00660		0.00500	1	03/01/2022 01:12	WG1825079
(S) Toluene-d8	*110*		*75.0-131*		*03/01/2022 01:12*	WG1825079
(S) 4-Bromofluorobenzene	*99.1*		*67.0-138*		*03/01/2022 01:12*	WG1825079
(S) 1,2-Dichloroethane-d4	*96.8*		*70.0-130*		*03/01/2022 01:12*	WG1825079

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
C10-C28 Diesel Range	ND		4.00	1	03/04/2022 14:50	WG1826930
C28-C36 Motor Oil Range	4.96		4.00	1	03/04/2022 14:50	WG1826930
(S) o-Terphenyl	*67.2*		*18.0-148*		*03/04/2022 14:50*	WG1826930

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Fluorene	ND		0.00600	1	03/04/2022 11:04	WG1826937
1-Methylnaphthalene	ND		0.0200	1	03/04/2022 11:04	WG1826937
2-Methylnaphthalene	ND		0.0200	1	03/04/2022 11:04	WG1826937

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Naphthalene	ND		0.0200	1	03/04/2022 11:04	WG1826937
(S) p-Terphenyl-d14	*89.7*		*23.0-120*		*03/04/2022 11:04*	WG1826937
(S) Nitrobenzene-d5	*71.1*		*14.0-149*		*03/04/2022 11:04*	WG1826937
(S) 2-Fluorobiphenyl	*82.1*		*34.0-125*		*03/04/2022 11:04*	WG1826937

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	6.14		1	03/04/2022 17:34	WG1824998

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	1090		10.0	1	03/06/2022 06:43	WG1825853

Sample Narrative:
L1465680-07 WG1825853: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Barium	274		0.500	1	03/04/2022 04:14	WG1825824

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/l		mg/l			
Hot Water Sol. Boron	0.983		0.200	1	03/04/2022 15:04	WG1825224

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
TPH (GC/FID) Low Fraction	ND		0.100	1	03/01/2022 03:36	WG1825064
(S) a,a,a-Trifluorotoluene(FID)	*106*		*77.0-120*		*03/01/2022 03:36*	WG1825064

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Benzene	ND		0.00100	1	03/01/2022 01:30	WG1825079
Toluene	ND		0.00500	1	03/01/2022 01:30	WG1825079
Ethylbenzene	ND		0.00250	1	03/01/2022 01:30	WG1825079
Xylenes, Total	ND		0.00650	1	03/01/2022 01:30	WG1825079
1,2,4-Trimethylbenzene	ND		0.00500	1	03/01/2022 01:30	WG1825079
1,3,5-Trimethylbenzene	ND		0.00500	1	03/01/2022 01:30	WG1825079
(S) Toluene-d8	*110*		*75.0-131*		*03/01/2022 01:30*	WG1825079
(S) 4-Bromofluorobenzene	*100*		*67.0-138*		*03/01/2022 01:30*	WG1825079
(S) 1,2-Dichloroethane-d4	*94.6*		*70.0-130*		*03/01/2022 01:30*	WG1825079

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
C10-C28 Diesel Range	ND		4.00	1	03/04/2022 15:05	WG1826930
C28-C36 Motor Oil Range	10.1		4.00	1	03/04/2022 15:05	WG1826930
(S) o-Terphenyl	*68.6*		*18.0-148*		*03/04/2022 15:05*	WG1826930

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Fluorene	ND		0.00600	1	03/04/2022 11:21	WG1826937
1-Methylnaphthalene	ND		0.0200	1	03/04/2022 11:21	WG1826937
2-Methylnaphthalene	ND		0.0200	1	03/04/2022 11:21	WG1826937

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Naphthalene	ND		0.0200	1	03/04/2022 11:21	WG1826937
(S) p-Terphenyl-d14	*88.6*		*23.0-120*		*03/04/2022 11:21*	WG1826937
(S) Nitrobenzene-d5	*70.6*		*14.0-149*		*03/04/2022 11:21*	WG1826937
(S) 2-Fluorobiphenyl	*79.1*		*34.0-125*		*03/04/2022 11:21*	WG1826937

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	4.81		1	03/04/2022 17:37	WG1824998

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	2290		10.0	1	03/06/2022 06:43	WG1825853

Sample Narrative:
L1465680-08 WG1825853: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Barium	279		0.500	1	03/04/2022 04:17	WG1825824

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/l		mg/l			
Hot Water Sol. Boron	1.46		0.200	1	03/04/2022 15:07	WG1825224

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
TPH (GC/FID) Low Fraction	0.153		0.100	1	03/01/2022 03:57	WG1825064
(S) a,a,a-Trifluorotoluene(FID)	*106*		*77.0-120*		*03/01/2022 03:57*	WG1825064

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Benzene	ND		0.00100	1	03/01/2022 01:49	WG1825079
Toluene	ND		0.00500	1	03/01/2022 01:49	WG1825079
Ethylbenzene	ND		0.00250	1	03/01/2022 01:49	WG1825079
Xylenes, Total	ND		0.00650	1	03/01/2022 01:49	WG1825079
1,2,4-Trimethylbenzene	ND		0.00500	1	03/01/2022 01:49	WG1825079
1,3,5-Trimethylbenzene	ND		0.00500	1	03/01/2022 01:49	WG1825079
(S) Toluene-d8	*110*		*75.0-131*		*03/01/2022 01:49*	WG1825079
(S) 4-Bromofluorobenzene	*99.9*		*67.0-138*		*03/01/2022 01:49*	WG1825079
(S) 1,2-Dichloroethane-d4	*95.9*		*70.0-130*		*03/01/2022 01:49*	WG1825079

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
C10-C28 Diesel Range	ND		4.00	1	03/07/2022 14:37	WG1828156
C28-C36 Motor Oil Range	ND		4.00	1	03/07/2022 14:37	WG1828156
(S) o-Terphenyl	*33.9*		*18.0-148*		*03/07/2022 14:37*	WG1828156

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Fluorene	ND		0.00600	1	03/04/2022 11:39	WG1826937
1-Methylnaphthalene	ND		0.0200	1	03/04/2022 11:39	WG1826937
2-Methylnaphthalene	ND		0.0200	1	03/04/2022 11:39	WG1826937

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Naphthalene	ND		0.0200	1	03/04/2022 11:39	WG1826937
(S) p-Terphenyl-d14	*87.3*		*23.0-120*		*03/04/2022 11:39*	WG1826937
(S) Nitrobenzene-d5	*73.6*		*14.0-149*		*03/04/2022 11:39*	WG1826937
(S) 2-Fluorobiphenyl	*85.7*		*34.0-125*		*03/04/2022 11:39*	WG1826937

Method Blank (MB)

(MB) R3766759-1 03/06/22 06:43

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

L1465655-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1465655-05 03/06/22 06:43 • (DUP) R3766759-3 03/06/22 06:43

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	52000	56200	1	7.76		20

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

L1465680-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1465680-01 03/06/22 06:43 • (DUP) R3766759-4 03/06/22 06:43

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	965	958	1	0.728		20

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

Laboratory Control Sample (LCS)

(LCS) R3766759-2 03/06/22 06:43

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	271	101	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3766294-1 03/04/22 03:01

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Barium	U		0.0852	0.500

Laboratory Control Sample (LCS)

(LCS) R3766294-2 03/04/22 03:03

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	95.3	95.3	80.0-120	

L1465665-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1465665-01 03/04/22 03:06 • (MS) R3766294-5 03/04/22 03:14 • (MSD) R3766294-6 03/04/22 03:17

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	100	163	281	269	119	107	1	75.0-125			4.35	20

Method Blank (MB)

(MB) R3766227-1 03/03/22 11:27

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Barium	U		0.0852	0.500

Laboratory Control Sample (LCS)

(LCS) R3766227-2 03/03/22 11:29

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	102	102	80.0-120	

L1465680-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1465680-01 03/03/22 11:32 • (MS) R3766227-5 03/03/22 11:40 • (MSD) R3766227-6 03/03/22 11:43

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	245	343	326	97.4	81.1	1	75.0-125			4.90	20

Method Blank (MB)

(MB) R3766596-1 03/04/22 14:13

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

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

(LCS) R3766596-2 03/04/22 14:15 • (LCSD) R3766596-3 03/04/22 14:18

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	1.06	1.05	106	105	80.0-120			0.506	20

Method Blank (MB)

(MB) R3764901-2 02/28/22 20:23

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*110*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3764901-1 02/28/22 19:27

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.29	78.0	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*97.1*	*77.0-120*	

L1465654-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1465654-01 02/28/22 22:32 • (MS) R3764901-3 03/01/22 04:40 • (MSD) R3764901-4 03/01/22 05:39

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	ND	2.97	3.82	52.7	68.2	1	10.0-151			25.0	28
(S) a,a,a-Trifluorotoluene(FID)					*97.2*	*97.6*		*77.0-120*				

Method Blank (MB)

(MB) R3765131-2 03/01/22 00:01

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	*102*			*75.0-131*
(S) 4-Bromofluorobenzene	*92.1*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*111*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3765131-1 02/28/22 23:03

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.109	87.2	70.0-123	
Toluene	0.125	0.105	84.0	75.0-121	
Ethylbenzene	0.125	0.115	92.0	74.0-126	
Xylenes, Total	0.375	0.362	96.5	72.0-127	
1,2,4-Trimethylbenzene	0.125	0.124	99.2	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.117	93.6	73.0-127	
(S) Toluene-d8			*95.2*	*75.0-131*	
(S) 4-Bromofluorobenzene			*98.4*	*67.0-138*	
(S) 1,2-Dichloroethane-d4			*120*	*70.0-130*	

L1465680-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1465680-04 03/01/22 06:30 • (MS) R3765131-3 03/01/22 07:08 • (MSD) R3765131-4 03/01/22 07:27

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	ND	0.110	0.115	88.0	92.0	1	10.0-149			4.44	37
Toluene	0.125	ND	0.110	0.118	88.0	94.4	1	10.0-156			7.02	38
Ethylbenzene	0.125	ND	0.122	0.128	97.6	102	1	10.0-160			4.80	38
Xylenes, Total	0.375	ND	0.354	0.381	94.4	102	1	10.0-160			7.35	38
1,2,4-Trimethylbenzene	0.125	ND	0.114	0.124	91.2	99.2	1	10.0-160			8.40	36
1,3,5-Trimethylbenzene	0.125	ND	0.118	0.125	94.4	100	1	10.0-160			5.76	38
(S) Toluene-d8					*101*	*102*		*75.0-131*				
(S) 4-Bromofluorobenzene					*91.8*	*94.4*		*67.0-138*				
(S) 1,2-Dichloroethane-d4					*104*	*100*		*70.0-130*				

Method Blank (MB)

(MB) R3764784-3 02/28/22 18:18

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	*110*			*75.0-131*
(S) 4-Bromofluorobenzene	*103*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*97.0*			*70.0-130*

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

(LCS) R3764784-1 02/28/22 17:02 • (LCSD) R3764784-2 02/28/22 17:21

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	0.117	0.115	93.6	92.0	70.0-123			1.72	20
Toluene	0.125	0.125	0.127	100	102	75.0-121			1.59	20
Ethylbenzene	0.125	0.128	0.132	102	106	74.0-126			3.08	20
Xylenes, Total	0.375	0.406	0.401	108	107	72.0-127			1.24	20
1,2,4-Trimethylbenzene	0.125	0.110	0.107	88.0	85.6	70.0-126			2.76	20
1,3,5-Trimethylbenzene	0.125	0.117	0.112	93.6	89.6	73.0-127			4.37	20
(S) Toluene-d8				*107*	*107*	*75.0-131*				
(S) 4-Bromofluorobenzene				*101*	*102*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*93.2*	*93.1*	*70.0-130*				

L1465680-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1465680-08 03/01/22 01:49 • (MS) R3764784-4 03/01/22 02:08 • (MSD) R3764784-5 03/01/22 02:27

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	ND	0.132	0.132	106	106	1	10.0-149			0.000	37
Toluene	0.125	ND	0.141	0.141	113	113	1	10.0-156			0.000	38
Ethylbenzene	0.125	ND	0.143	0.149	114	119	1	10.0-160			4.11	38
Xylenes, Total	0.375	ND	0.450	0.454	120	121	1	10.0-160			0.885	38
1,2,4-Trimethylbenzene	0.125	ND	0.121	0.126	96.8	101	1	10.0-160			4.05	36
1,3,5-Trimethylbenzene	0.125	ND	0.130	0.133	104	106	1	10.0-160			2.28	38
(S) Toluene-d8					*108*	*107*		*75.0-131*				
(S) 4-Bromofluorobenzene					*100*	*101*		*67.0-138*				
(S) 1,2-Dichloroethane-d4					*95.6*	*99.0*		*70.0-130*				

Method Blank (MB)

(MB) R3766716-1 03/04/22 11:03

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	*62.5*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3766716-2 03/04/22 11:18

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	38.6	77.2	50.0-150	
(S) o-Terphenyl			*84.7*	*18.0-148*	

L1465680-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1465680-07 03/04/22 15:05 • (MS) R3766716-3 03/04/22 15:21 • (MSD) R3766716-4 03/04/22 15:36

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	48.9	ND	37.3	34.9	70.9	66.1	1	50.0-150			6.65	20
(S) o-Terphenyl					*78.7*	*70.0*		*18.0-148*				

Method Blank (MB)

(MB) R3767197-1 03/07/22 12:27

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	*51.8*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3767197-2 03/07/22 12:40

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	28.8	57.6	50.0-150	
(S) o-Terphenyl			*61.9*	*18.0-148*	

L1465691-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1465691-06 03/07/22 12:53 • (MS) R3767197-3 03/07/22 13:06 • (MSD) R3767197-4 03/07/22 13:19

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	47.7	ND	23.5	23.8	44.2	45.4	1	50.0-150	J6	J6	1.27	20
(S) o-Terphenyl					*54.2*	*57.2*		*18.0-148*				

Method Blank (MB)

(MB) R3766406-2 03/04/22 09:44

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Fluorene	U		0.00205	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
Naphthalene	U		0.00408	0.0200
(S) p-Terphenyl-d14	*96.5*			*23.0-120*
(S) Nitrobenzene-d5	*74.3*			*14.0-149*
(S) 2-Fluorobiphenyl	*83.9*			*34.0-125*

Laboratory Control Sample (LCS)

(LCS) R3766406-1 03/04/22 09:26

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	
1-Methylnaphthalene	0.0800	0.0614	76.8	51.0-121	
2-Methylnaphthalene	0.0800	0.0639	79.9	50.0-120	
Naphthalene	0.0800	0.0587	73.4	50.0-120	
(S) p-Terphenyl-d14			*90.2*	*23.0-120*	
(S) Nitrobenzene-d5			*76.3*	*14.0-149*	
(S) 2-Fluorobiphenyl			*84.8*	*34.0-125*	

L1465665-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1465665-04 03/04/22 14:46 • (MS) R3766406-3 03/04/22 15:04 • (MSD) R3766406-4 03/04/22 15:22

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 %
Fluorene	0.0800	ND	0.0559	0.0495	69.9	61.9	1	11.0-130			12.1	29
1-Methylnaphthalene	0.0800	ND	0.0567	0.0558	70.9	69.8	1	10.0-142			1.60	28
2-Methylnaphthalene	0.0800	ND	0.0588	0.0614	73.5	76.8	1	10.0-137			4.33	28
Naphthalene	0.0800	ND	0.0537	0.0508	67.1	63.5	1	10.0-135			5.55	27
(S) p-Terphenyl-d14					*83.8*	*62.5*		*23.0-120*				
(S) Nitrobenzene-d5					*70.5*	*64.7*		*14.0-149*				
(S) 2-Fluorobiphenyl					*79.3*	*70.5*		*34.0-125*				

Method Blank (MB)

(MB) R3766581-2 03/04/22 10:46

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Fluorene	U		0.00205	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
Naphthalene	U		0.00408	0.0200
(S) p-Terphenyl-d14	*90.3*			*23.0-120*
(S) Nitrobenzene-d5	*67.3*			*14.0-149*
(S) 2-Fluorobiphenyl	*82.1*			*34.0-125*

Laboratory Control Sample (LCS)

(LCS) R3766581-1 03/04/22 10:29

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0702	87.8	49.0-120	
1-Methylnaphthalene	0.0800	0.0641	80.1	51.0-121	
2-Methylnaphthalene	0.0800	0.0663	82.9	50.0-120	
Naphthalene	0.0800	0.0646	80.7	50.0-120	
(S) p-Terphenyl-d14			*95.2*	*23.0-120*	
(S) Nitrobenzene-d5			*79.5*	*14.0-149*	
(S) 2-Fluorobiphenyl			*87.4*	*34.0-125*	

L1465840-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1465840-01 03/04/22 14:00 • (MS) R3766581-3 03/04/22 14:18 • (MSD) R3766581-4 03/04/22 14:36

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 %
Fluorene	0.0800	ND	0.0525	0.0553	65.6	69.1	1	11.0-130			5.19	29
1-Methylnaphthalene	0.0800	ND	0.0516	0.0529	64.5	66.1	1	10.0-142			2.49	28
2-Methylnaphthalene	0.0800	ND	0.0537	0.0567	67.1	70.9	1	10.0-137			5.43	28
Naphthalene	0.0800	ND	0.0523	0.0572	65.4	71.5	1	10.0-135			8.95	27
(S) p-Terphenyl-d14					*83.0*	*81.3*		*23.0-120*				
(S) Nitrobenzene-d5					*71.6*	*70.7*		*14.0-149*				
(S) 2-Fluorobiphenyl					*81.9*	*81.9*		*34.0-125*				

Method Blank (MB)

(MB) R3767072-2 03/07/22 09:18

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Fluorene	U		0.00205	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
Naphthalene	U		0.00408	0.0200
(S) p-Terphenyl-d14	*114*			*23.0-120*
(S) Nitrobenzene-d5	*96.5*			*14.0-149*
(S) 2-Fluorobiphenyl	*97.6*			*34.0-125*

Laboratory Control Sample (LCS)

(LCS) R3767072-1 03/07/22 09:00

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0715	89.4	49.0-120	
1-Methylnaphthalene	0.0800	0.0713	89.1	51.0-121	
2-Methylnaphthalene	0.0800	0.0683	85.4	50.0-120	
Naphthalene	0.0800	0.0705	88.1	50.0-120	
(S) p-Terphenyl-d14			*111*	*23.0-120*	
(S) Nitrobenzene-d5			*99.3*	*14.0-149*	
(S) 2-Fluorobiphenyl			*97.7*	*34.0-125*	

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
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.

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	LAO000356
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: **SGV Federal Dry Gas Release**

City/State Collected: ~~Mamm~~ Wallace Creek, CO

Phone:
Fax:

Client Project # **SGV F**

Lab Project # **SGV F**

Collected by (print): Kevin Fletcher

Site/Facility ID # **SGV F**

P.O. # **SGV F**

Collected by (signature):

Immediately Packed on Ice N ____ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed: **Standard TAT**

Chain of Custody Page 1 of 1

Pace Analytical®
National Center for Testing & Innovation

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

L# 146580
1180

Acctnum:
Template:
Prelogin:
TSR:
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TPH- GRO,DRO,ORO	BTEX	1,2,4- trimethylbenzene	SAR, EC, Boron, barium	1,3,5- trimethylbenzene	napthalene, flourene	1-methylnapthalene	2-methylnapthalene	Remarks	Sample # (lab only)
20220224-SGVFed(SB-NE)@3.5-5.5	Grab	SS	NA	2/24/22	0900	2	X	X	X	X	X	X	X	X		01
20220224-SGVFed(SB-NE)@13.5-15.5	Grab				0950											02
20220224-SGVFed(SB-NE)@25-26.5	Grab				1310											03
20220224-SGVFed(SB-SE)@5-7	Grab				1345											04
20220224-SGVFed(SB-SE)@15-16.5	Grab				1425											05
20220224-SGVFed(SB-SE)@26-26	Grab				1540											06
20220224-SGVFed(SB-N)@10-12	Grab				1615											07
20220224-SGVFed(SB-N)@15-16	Grab				1640											08

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

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier __ _____

Tracking # 5433 8386 0730

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: Y __N
Bottles arrive intact: Y __N
Correct bottles used: Y __N
Sufficient volume sent: Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
	2/25/22	1300		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
	2/25/22	1700		2.4 +0 = 2.4 16
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:
				2/26/22 0930

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

ANALYTICAL REPORT

March 11, 2022

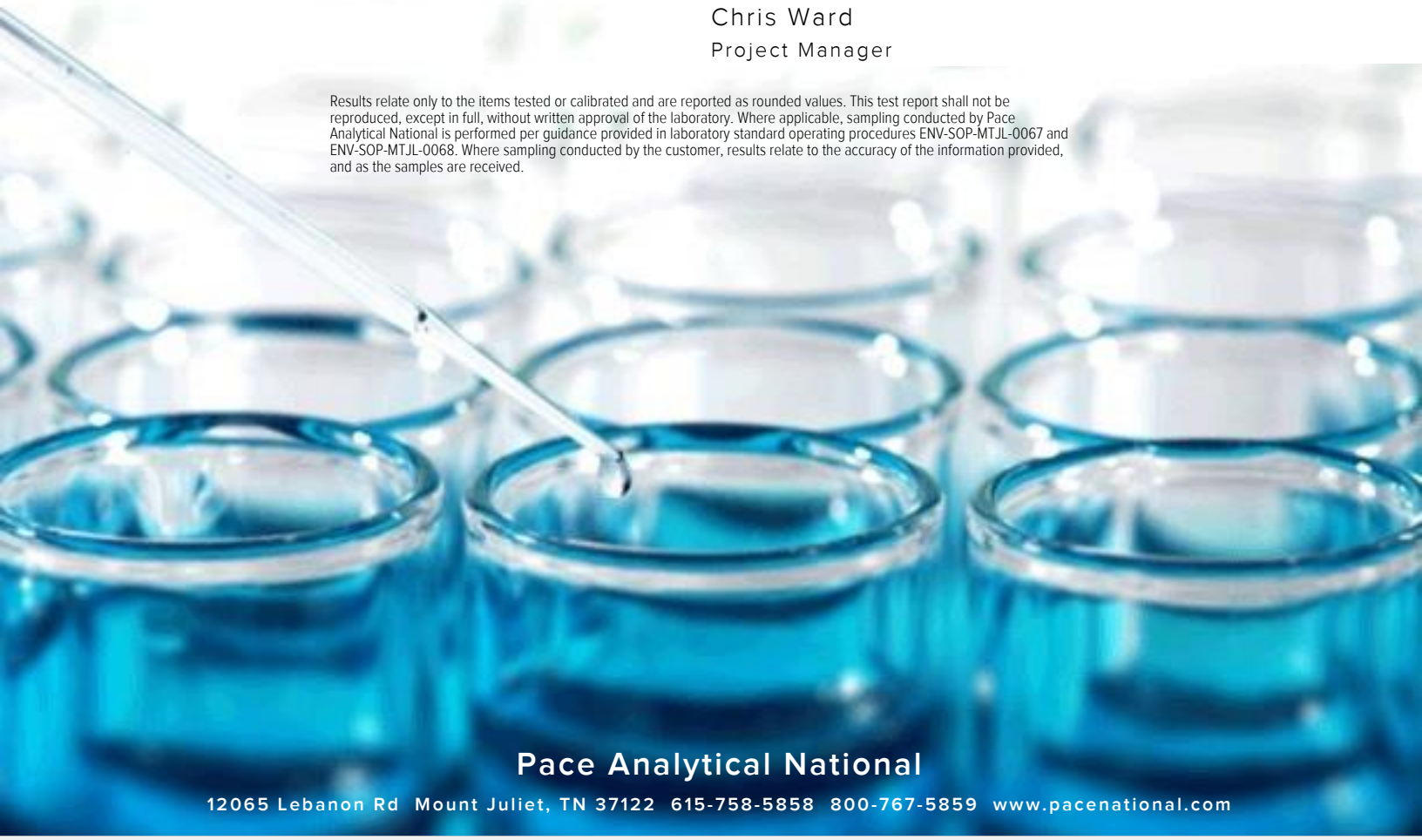
Revised Report

Caerus Oil and Gas

Sample Delivery Group:	L1466765
Samples Received:	03/02/2022
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:

Chris Ward
Project Manager



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

TABLE OF CONTENTS

20220225-SGV FED (SB-N)@25.5-26.25' L1466765-01 Solid

Collected by: Kevin Fletcher | Collected date/time: 02/25/22 11:05 | Received date/time: 03/02/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1826651	1	03/08/22 16:09	03/08/22 16:09	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1828048	1	03/08/22 07:23	03/08/22 09:20	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1826519	1	03/03/22 10:32	03/04/22 09:45	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1826654	1	03/07/22 14:31	03/08/22 17:08	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1826525	1	03/02/22 16:35	03/03/22 10:00	CAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1826344	1	03/02/22 16:35	03/02/22 20:07	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1826915	1	03/04/22 05:06	03/04/22 19:40	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1826891	1	03/04/22 10:44	03/04/22 18:42	LEA	Mt. Juliet, TN

20220225-SGV FED (SB-S)@10-11.5' L1466765-02 Solid

Collected by: Kevin Fletcher | Collected date/time: 02/25/22 12:05 | Received date/time: 03/02/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1826651	1	03/08/22 16:12	03/08/22 16:12	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1825853	1	03/06/22 03:39	03/06/22 06:43	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1826519	1	03/03/22 10:32	03/04/22 09:53	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1826654	1	03/07/22 14:31	03/08/22 17:11	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1826525	1	03/02/22 16:35	03/03/22 10:22	CAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1826344	1	03/02/22 16:35	03/02/22 20:29	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1826915	1	03/04/22 05:06	03/04/22 19:54	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1826891	1	03/04/22 10:44	03/04/22 18:59	LEA	Mt. Juliet, TN

20220225-SGV FED (SB-S)@15-17' L1466765-03 Solid

Collected by: Kevin Fletcher | Collected date/time: 02/25/22 12:35 | Received date/time: 03/02/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1826651	1	03/08/22 16:15	03/08/22 16:15	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1828048	1	03/08/22 07:23	03/08/22 09:20	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1826519	1	03/03/22 10:32	03/04/22 09:56	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1826654	1	03/07/22 14:31	03/08/22 17:14	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1826525	1	03/02/22 16:35	03/03/22 10:43	CAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1826344	1	03/02/22 16:35	03/02/22 20:50	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1826915	1	03/04/22 05:06	03/04/22 20:08	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1826891	1	03/04/22 10:44	03/04/22 19:16	LEA	Mt. Juliet, TN

20220225-SGV FED (SB-S)@25-25.75' L1466765-04 Solid

Collected by: Kevin Fletcher | Collected date/time: 02/25/22 13:25 | Received date/time: 03/02/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1826651	1	03/08/22 16:18	03/08/22 16:18	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1828048	1	03/08/22 07:23	03/08/22 09:20	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1826519	1	03/03/22 10:32	03/04/22 09:59	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1826654	1	03/07/22 14:31	03/08/22 17:17	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1826525	1	03/02/22 16:35	03/03/22 11:05	CAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1826344	1	03/02/22 16:35	03/02/22 21:11	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1826915	1	03/04/22 05:06	03/04/22 20:21	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1826891	1	03/04/22 10:44	03/04/22 19:34	LEA	Mt. Juliet, TN

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

SAMPLE SUMMARY

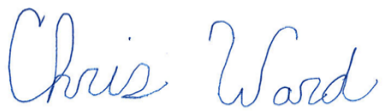
20220225-SGV FED (SB-SW)@3.5-5.5' L1466765-05 Solid

Collected by: Kevin Fletcher
Collected date/time: 02/25/22 14:50
Received date/time: 03/02/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1826651	1	03/08/22 16:21	03/08/22 16:21	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1828048	1	03/08/22 07:23	03/08/22 09:20	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1826519	1	03/03/22 10:32	03/04/22 10:01	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1826654	1	03/07/22 14:31	03/08/22 17:20	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1826525	1	03/02/22 16:35	03/03/22 11:27	CAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1826344	1	03/02/22 16:35	03/02/22 21:32	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1826915	1	03/04/22 05:06	03/04/22 20:35	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1826891	1	03/04/22 10:44	03/04/22 19:51	LEA	Mt. Juliet, TN

CASE NARRATIVE

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



Chris Ward
Project Manager

Report Revision History

Level II Report - Version 1: 03/09/22 12:34

Project Narrative

Rerun to correct collection date

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.41		1	03/08/2022 16:09	WG1826651

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	250		10.0	1	03/08/2022 09:20	WG1828048

Sample Narrative:
L1466765-01 WG1828048: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Barium	207		0.500	1	03/04/2022 09:45	WG1826519

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/l		mg/l			
Hot Water Sol. Boron	ND		0.200	1	03/08/2022 17:08	WG1826654

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
TPH (GC/FID) Low Fraction	0.241		0.100	1	03/03/2022 10:00	WG1826525
(S) a,a,a-Trifluorotoluene(FID)	*105*		*77.0-120*		*03/03/2022 10:00*	WG1826525

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Benzene	ND		0.00100	1	03/02/2022 20:07	WG1826344
Toluene	ND		0.00500	1	03/02/2022 20:07	WG1826344
Ethylbenzene	ND		0.00250	1	03/02/2022 20:07	WG1826344
Xylenes, Total	ND		0.00650	1	03/02/2022 20:07	WG1826344
1,2,4-Trimethylbenzene	ND		0.00500	1	03/02/2022 20:07	WG1826344
1,3,5-Trimethylbenzene	ND		0.00500	1	03/02/2022 20:07	WG1826344
(S) Toluene-d8	*95.5*		*75.0-131*		*03/02/2022 20:07*	WG1826344
(S) 4-Bromofluorobenzene	*97.4*		*67.0-138*		*03/02/2022 20:07*	WG1826344
(S) 1,2-Dichloroethane-d4	*107*		*70.0-130*		*03/02/2022 20:07*	WG1826344

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
C10-C28 Diesel Range	7.81		4.00	1	03/04/2022 19:40	WG1826915
C28-C36 Motor Oil Range	6.13		4.00	1	03/04/2022 19:40	WG1826915
(S) o-Terphenyl	*66.5*		*18.0-148*		*03/04/2022 19:40*	WG1826915

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Fluorene	ND		0.00600	1	03/04/2022 18:42	WG1826891
1-Methylnaphthalene	ND		0.0200	1	03/04/2022 18:42	WG1826891
2-Methylnaphthalene	ND		0.0200	1	03/04/2022 18:42	WG1826891

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Naphthalene	ND		0.0200	1	03/04/2022 18:42	WG1826891
(S) p-Terphenyl-d14	*79.5*		*23.0-120*		*03/04/2022 18:42*	WG1826891
(S) Nitrobenzene-d5	*77.4*		*14.0-149*		*03/04/2022 18:42*	WG1826891
(S) 2-Fluorobiphenyl	*74.0*		*34.0-125*		*03/04/2022 18:42*	WG1826891

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.125		1	03/08/2022 16:12	WG1826651

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	915		10.0	1	03/06/2022 06:43	WG1825853

Sample Narrative:
L1466765-02 WG1825853: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Barium	109		0.500	1	03/04/2022 09:53	WG1826519

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/l		mg/l			
Hot Water Sol. Boron	0.270		0.200	1	03/08/2022 17:11	WG1826654

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
TPH (GC/FID) Low Fraction	ND		0.100	1	03/03/2022 10:22	WG1826525
(S) a,a,a-Trifluorotoluene(FID)	*110*		*77.0-120*		*03/03/2022 10:22*	WG1826525

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Benzene	ND		0.00100	1	03/02/2022 20:29	WG1826344
Toluene	ND		0.00500	1	03/02/2022 20:29	WG1826344
Ethylbenzene	ND		0.00250	1	03/02/2022 20:29	WG1826344
Xylenes, Total	ND		0.00650	1	03/02/2022 20:29	WG1826344
1,2,4-Trimethylbenzene	ND		0.00500	1	03/02/2022 20:29	WG1826344
1,3,5-Trimethylbenzene	ND		0.00500	1	03/02/2022 20:29	WG1826344
(S) Toluene-d8	*95.2*		*75.0-131*		*03/02/2022 20:29*	WG1826344
(S) 4-Bromofluorobenzene	*99.1*		*67.0-138*		*03/02/2022 20:29*	WG1826344
(S) 1,2-Dichloroethane-d4	*108*		*70.0-130*		*03/02/2022 20:29*	WG1826344

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
C10-C28 Diesel Range	ND		4.00	1	03/04/2022 19:54	WG1826915
C28-C36 Motor Oil Range	ND		4.00	1	03/04/2022 19:54	WG1826915
(S) o-Terphenyl	*64.4*		*18.0-148*		*03/04/2022 19:54*	WG1826915

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Fluorene	ND		0.00600	1	03/04/2022 18:59	WG1826891
1-Methylnaphthalene	ND		0.0200	1	03/04/2022 18:59	WG1826891
2-Methylnaphthalene	ND		0.0200	1	03/04/2022 18:59	WG1826891

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Naphthalene	ND		0.0200	1	03/04/2022 18:59	WG1826891
(S) p-Terphenyl-d14	*83.7*		*23.0-120*		*03/04/2022 18:59*	WG1826891
(S) Nitrobenzene-d5	*82.3*		*14.0-149*		*03/04/2022 18:59*	WG1826891
(S) 2-Fluorobiphenyl	*80.1*		*34.0-125*		*03/04/2022 18:59*	WG1826891

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.63		1	03/08/2022 16:15	WG1826651

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	896		10.0	1	03/08/2022 09:20	WG1828048

Sample Narrative:
L1466765-03 WG1828048: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Barium	188		0.500	1	03/04/2022 09:56	WG1826519

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/l		mg/l			
Hot Water Sol. Boron	ND		0.200	1	03/08/2022 17:14	WG1826654

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
TPH (GC/FID) Low Fraction	ND		0.100	1	03/03/2022 10:43	WG1826525
(S) a,a,a-Trifluorotoluene(FID)	*110*		*77.0-120*		*03/03/2022 10:43*	WG1826525

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Benzene	ND		0.00100	1	03/02/2022 20:50	WG1826344
Toluene	ND		0.00500	1	03/02/2022 20:50	WG1826344
Ethylbenzene	ND		0.00250	1	03/02/2022 20:50	WG1826344
Xylenes, Total	ND		0.00650	1	03/02/2022 20:50	WG1826344
1,2,4-Trimethylbenzene	ND		0.00500	1	03/02/2022 20:50	WG1826344
1,3,5-Trimethylbenzene	ND		0.00500	1	03/02/2022 20:50	WG1826344
(S) Toluene-d8	*97.7*		*75.0-131*		*03/02/2022 20:50*	WG1826344
(S) 4-Bromofluorobenzene	*99.7*		*67.0-138*		*03/02/2022 20:50*	WG1826344
(S) 1,2-Dichloroethane-d4	*114*		*70.0-130*		*03/02/2022 20:50*	WG1826344

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
C10-C28 Diesel Range	ND		4.00	1	03/04/2022 20:08	WG1826915
C28-C36 Motor Oil Range	ND		4.00	1	03/04/2022 20:08	WG1826915
(S) o-Terphenyl	*62.5*		*18.0-148*		*03/04/2022 20:08*	WG1826915

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Fluorene	ND		0.00600	1	03/04/2022 19:16	WG1826891
1-Methylnaphthalene	ND		0.0200	1	03/04/2022 19:16	WG1826891
2-Methylnaphthalene	ND		0.0200	1	03/04/2022 19:16	WG1826891

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Naphthalene	ND		0.0200	1	03/04/2022 19:16	WG1826891
(S) p-Terphenyl-d14	*78.2*		*23.0-120*		*03/04/2022 19:16*	WG1826891
(S) Nitrobenzene-d5	*71.9*		*14.0-149*		*03/04/2022 19:16*	WG1826891
(S) 2-Fluorobiphenyl	*70.6*		*34.0-125*		*03/04/2022 19:16*	WG1826891

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.76		1	03/08/2022 16:18	WG1826651

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	2110		10.0	1	03/08/2022 09:20	WG1828048

Sample Narrative:
L1466765-04 WG1828048: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Barium	230		0.500	1	03/04/2022 09:59	WG1826519

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/l		mg/l			
Hot Water Sol. Boron	ND		0.200	1	03/08/2022 17:17	WG1826654

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
TPH (GC/FID) Low Fraction	0.150		0.100	1	03/03/2022 11:05	WG1826525
(S) a,a,a-Trifluorotoluene(FID)	*105*		*77.0-120*		*03/03/2022 11:05*	WG1826525

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Benzene	ND		0.00100	1	03/02/2022 21:11	WG1826344
Toluene	ND		0.00500	1	03/02/2022 21:11	WG1826344
Ethylbenzene	ND		0.00250	1	03/02/2022 21:11	WG1826344
Xylenes, Total	ND		0.00650	1	03/02/2022 21:11	WG1826344
1,2,4-Trimethylbenzene	ND		0.00500	1	03/02/2022 21:11	WG1826344
1,3,5-Trimethylbenzene	ND		0.00500	1	03/02/2022 21:11	WG1826344
(S) Toluene-d8	*98.3*		*75.0-131*		*03/02/2022 21:11*	WG1826344
(S) 4-Bromofluorobenzene	*98.8*		*67.0-138*		*03/02/2022 21:11*	WG1826344
(S) 1,2-Dichloroethane-d4	*110*		*70.0-130*		*03/02/2022 21:11*	WG1826344

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
C10-C28 Diesel Range	6.18		4.00	1	03/04/2022 20:21	WG1826915
C28-C36 Motor Oil Range	8.20		4.00	1	03/04/2022 20:21	WG1826915
(S) o-Terphenyl	*74.5*		*18.0-148*		*03/04/2022 20:21*	WG1826915

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Fluorene	ND		0.00600	1	03/04/2022 19:34	WG1826891
1-Methylnaphthalene	ND		0.0200	1	03/04/2022 19:34	WG1826891
2-Methylnaphthalene	ND		0.0200	1	03/04/2022 19:34	WG1826891

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Naphthalene	ND		0.0200	1	03/04/2022 19:34	WG1826891
(S) p-Terphenyl-d14	*79.9*		*23.0-120*		*03/04/2022 19:34*	WG1826891
(S) Nitrobenzene-d5	*77.6*		*14.0-149*		*03/04/2022 19:34*	WG1826891
(S) 2-Fluorobiphenyl	*76.1*		*34.0-125*		*03/04/2022 19:34*	WG1826891

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	5.26		1	03/08/2022 16:21	WG1826651

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	368		10.0	1	03/08/2022 09:20	WG1828048

Sample Narrative:
L1466765-05 WG1828048: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Barium	224		0.500	1	03/04/2022 10:01	WG1826519

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/l		mg/l			
Hot Water Sol. Boron	1.45		0.200	1	03/08/2022 17:20	WG1826654

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
TPH (GC/FID) Low Fraction	0.162		0.100	1	03/03/2022 11:27	WG1826525
(S) a,a,a-Trifluorotoluene(FID)	*108*		*77.0-120*		*03/03/2022 11:27*	WG1826525

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Benzene	ND		0.00100	1	03/02/2022 21:32	WG1826344
Toluene	ND		0.00500	1	03/02/2022 21:32	WG1826344
Ethylbenzene	ND		0.00250	1	03/02/2022 21:32	WG1826344
Xylenes, Total	0.00982		0.00650	1	03/02/2022 21:32	WG1826344
1,2,4-Trimethylbenzene	0.0172		0.00500	1	03/02/2022 21:32	WG1826344
1,3,5-Trimethylbenzene	0.0112		0.00500	1	03/02/2022 21:32	WG1826344
(S) Toluene-d8	*100*		*75.0-131*		*03/02/2022 21:32*	WG1826344
(S) 4-Bromofluorobenzene	*97.8*		*67.0-138*		*03/02/2022 21:32*	WG1826344
(S) 1,2-Dichloroethane-d4	*101*		*70.0-130*		*03/02/2022 21:32*	WG1826344

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
C10-C28 Diesel Range	ND		4.00	1	03/04/2022 20:35	WG1826915
C28-C36 Motor Oil Range	4.08	B	4.00	1	03/04/2022 20:35	WG1826915
(S) o-Terphenyl	*66.5*		*18.0-148*		*03/04/2022 20:35*	WG1826915

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Fluorene	ND		0.00600	1	03/04/2022 19:51	WG1826891
1-Methylnaphthalene	ND		0.0200	1	03/04/2022 19:51	WG1826891
2-Methylnaphthalene	0.0206		0.0200	1	03/04/2022 19:51	WG1826891

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Naphthalene	ND		0.0200	1	03/04/2022 19:51	WG1826891
(S) p-Terphenyl-d14	*88.1*		*23.0-120*		*03/04/2022 19:51*	WG1826891
(S) Nitrobenzene-d5	*78.4*		*14.0-149*		*03/04/2022 19:51*	WG1826891
(S) 2-Fluorobiphenyl	*77.3*		*34.0-125*		*03/04/2022 19:51*	WG1826891

Method Blank (MB)

(MB) R3766759-1 03/06/22 06:43

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

L1465655-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1465655-05 03/06/22 06:43 • (DUP) R3766759-3 03/06/22 06:43

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	52000	56200	1	7.76		20

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

L1465680-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1465680-01 03/06/22 06:43 • (DUP) R3766759-4 03/06/22 06:43

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	965	958	1	0.728		20

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

Laboratory Control Sample (LCS)

(LCS) R3766759-2 03/06/22 06:43

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	271	101	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3767363-1 03/08/22 09:20

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

L1466765-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1466765-01 03/08/22 09:20 • (DUP) R3767363-3 03/08/22 09:20

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	250	243	1	2.72		20

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

L1468238-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1468238-01 03/08/22 09:20 • (DUP) R3767363-4 03/08/22 09:20

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	424	438	1	3.25		20

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

Laboratory Control Sample (LCS)

(LCS) R3767363-2 03/08/22 09:20

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	273	102	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3766593-1 03/04/22 09:22

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Barium	U		0.0852	0.500

Laboratory Control Sample (LCS)

(LCS) R3766593-2 03/04/22 09:25

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	96.9	96.9	80.0-120	

L1466807-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1466807-01 03/04/22 09:27 • (MS) R3766593-5 03/04/22 09:35 • (MSD) R3766593-6 03/04/22 09:37

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 %
Barium	100	104	183	206	78.4	102	1	75.0-125			12.1	20

Method Blank (MB)

(MB) R3767692-1 03/08/22 17:00

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

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

(LCS) R3767692-2 03/08/22 17:03 • (LCSD) R3767692-3 03/08/22 17:05

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	1.05	1.06	105	106	80.0-120			0.501	20

Method Blank (MB)

(MB) R3766031-2 03/03/22 08:12

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*110*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3766031-1 03/03/22 07:29

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.48	81.5	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*99.1*	*77.0-120*	

Method Blank (MB)

(MB) R3765888-3 03/02/22 15:22

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	*89.6*			*75.0-131*
(S) 4-Bromofluorobenzene	*98.6*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*104*			*70.0-130*

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

(LCS) R3765888-1 03/02/22 13:59 • (LCSD) R3765888-2 03/02/22 14:19

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.115	0.115	92.0	92.0	70.0-123			0.000	20
Toluene	0.125	0.110	0.107	88.0	85.6	75.0-121			2.76	20
Ethylbenzene	0.125	0.112	0.109	89.6	87.2	74.0-126			2.71	20
Xylenes, Total	0.375	0.361	0.348	96.3	92.8	72.0-127			3.67	20
1,2,4-Trimethylbenzene	0.125	0.122	0.123	97.6	98.4	70.0-126			0.816	20
1,3,5-Trimethylbenzene	0.125	0.121	0.122	96.8	97.6	73.0-127			0.823	20
(S) Toluene-d8				*94.2*	*93.6*	*75.0-131*				
(S) 4-Bromofluorobenzene				*101*	*98.2*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*114*	*109*	*70.0-130*				

L1466405-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1466405-02 03/02/22 19:46 • (MS) R3765888-4 03/02/22 23:41 • (MSD) R3765888-5 03/03/22 00:02

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.144	ND	0.124	0.0367	99.2	29.4	1	10.0-149		J3	109	37
Toluene	0.144	ND	0.118	0.0395	94.4	31.6	1	10.0-156		J3	99.7	38
Ethylbenzene	0.144	ND	0.120	0.0331	96.0	26.5	1	10.0-160		J3	114	38
Xylenes, Total	0.432	ND	0.391	0.121	104	32.3	1	10.0-160		J3	105	38
1,2,4-Trimethylbenzene	0.144	ND	0.166	0.0539	133	43.1	1	10.0-160		J3	102	36
1,3,5-Trimethylbenzene	0.144	ND	0.131	0.0409	105	32.7	1	10.0-160		J3	105	38
(S) Toluene-d8					*98.8*	*101*		*75.0-131*				
(S) 4-Bromofluorobenzene					*105*	*105*		*67.0-138*				
(S) 1,2-Dichloroethane-d4					*102*	*105*		*70.0-130*				

Method Blank (MB)

(MB) R3766723-1 03/04/22 15:23

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	0.604	J	0.274	4.00
(S) o-Terphenyl	*71.3*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3766723-2 03/04/22 15:36

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	39.7	79.4	50.0-150	
(S) o-Terphenyl			*97.0*	*18.0-148*	

L1465255-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1465255-05 03/05/22 10:31 • (MS) R3766725-1 03/05/22 10:44 • (MSD) R3766725-2 03/05/22 10:57

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	49.7	1040	692	852	0.000	0.000	5	50.0-150	V	J3 V	20.7	20
(S) o-Terphenyl					*76.1*	*78.9*		*18.0-148*				

Method Blank (MB)

(MB) R3766618-2 03/04/22 17:50

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Fluorene	U		0.00205	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
Naphthalene	U		0.00408	0.0200
(S) p-Terphenyl-d14	*90.6*			*23.0-120*
(S) Nitrobenzene-d5	*80.5*			*14.0-149*
(S) 2-Fluorobiphenyl	*79.1*			*34.0-125*

Laboratory Control Sample (LCS)

(LCS) R3766618-1 03/04/22 17:32

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0562	70.3	49.0-120	
1-Methylnaphthalene	0.0800	0.0570	71.3	51.0-121	
2-Methylnaphthalene	0.0800	0.0587	73.4	50.0-120	
Naphthalene	0.0800	0.0582	72.8	50.0-120	
(S) p-Terphenyl-d14			*86.6*	*23.0-120*	
(S) Nitrobenzene-d5			*80.7*	*14.0-149*	
(S) 2-Fluorobiphenyl			*78.9*	*34.0-125*	

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
V	The sample concentration is too high to evaluate accurate spike recoveries.

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: **SGV Federal Dry Gas Release**

City/State Collected: Wallace ~~Mamm~~ Creek, CO

Phone:
Fax:

Client Project # **SGV F**

Lab Project # **SGV F**

Collected by (print): Kevin Fletcher

Site/Facility ID # **SGV F**

P.O. # **SGV F**

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed: **Standard TAT**

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TPH- GRO,DRO,ORO	BTEX	1,2,4- trimethylbenzene	SAR, EC, Boron, barium	1,3,5- trimethylbenzene	napthalene, flourene	1-methylnapthalene	2-methylnapthalene			Remarks	Sample # (lab only)
20220225-SGV Fed(SB-N)@25.5-26.25	Grab	SS		2/25/22	1105	2	X	X	X	X	X	X	X	X				-01
20220225-SGV Fed(SB-S)@10-11.5	Grab	↓		↓	1205	↓	↓	↓	↓	↓	↓	↓	↓	↓				-02
20220225-SGV Fed(SB-S)@15-17	Grab				1235													-03
20220225-SGV Fed(SB-S)@25-25.75	Grab				1325													-04
20220225-SGV Fed (SB-SW)@3.5-5.5	Grab				1450													-05

Chain of Custody Page 1 of 1

Pace Analytical®
National Center for Testing & Innovation

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

L# L1461765

A105

Acctnum:
Template:
Prelogin:
TSR:
PB:
Shipped Via:

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

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier __ _____

Tracking # 5016 1231 9864

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

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	3/1/22	1230	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	3/1/22	1550	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No (No) HCL / MeoH TBR

Temp: NS °C Bottles Received: 10
2.0+0=2.0

Date: 3/2/22 Time: 0915

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

ANALYTICAL REPORT

March 14, 2022

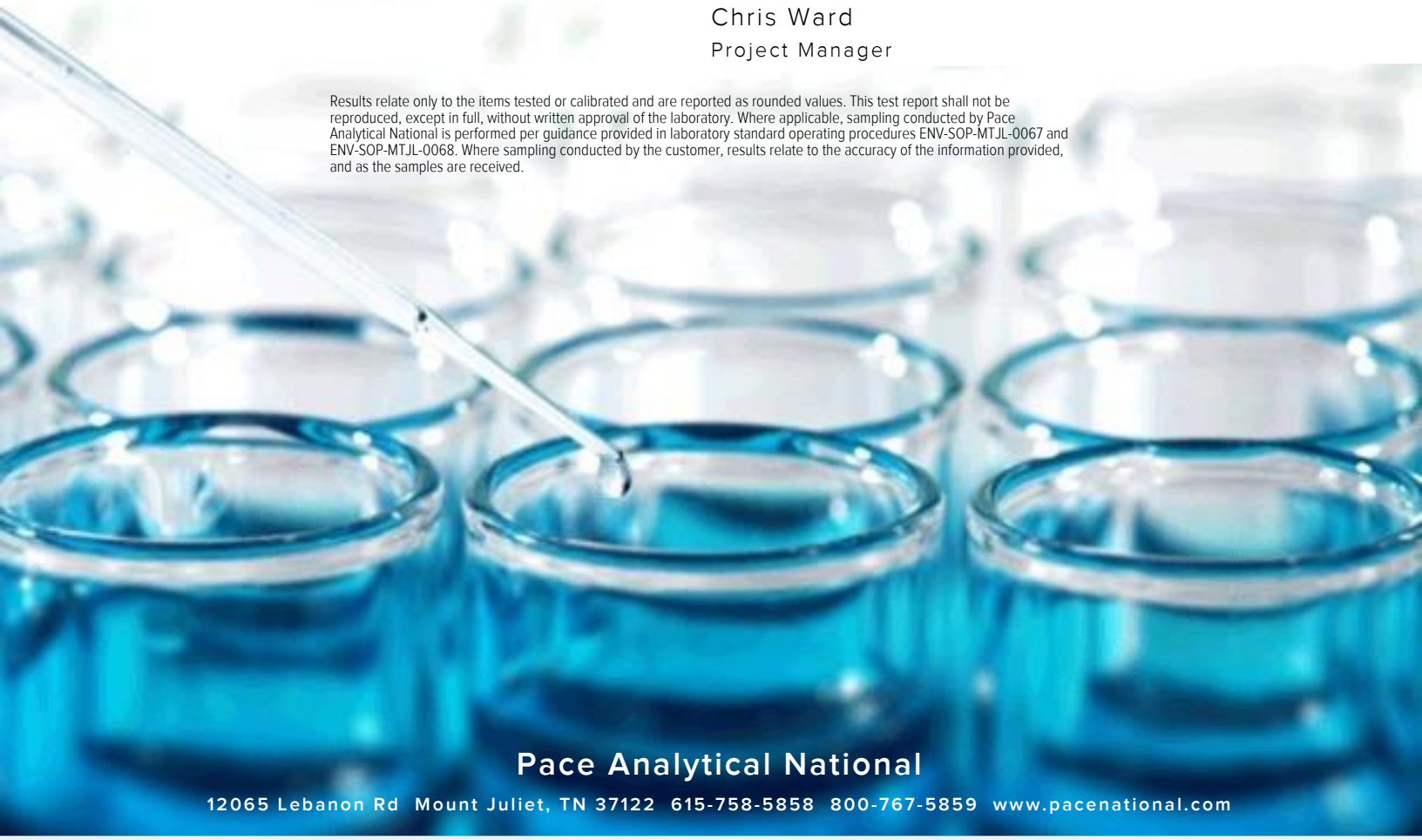
Revised Report

Caerus Oil and Gas

Sample Delivery Group:	L1466777
Samples Received:	03/02/2022
Project Number:	SGV F
Description:	SGV Federal Dry Gas Release
Site:	SGV F
Report To:	Jake Janicek 143 Diamond Avenue Parachute, CO 81635

Entire Report Reviewed By: Chris Ward

Chris Ward
Project Manager



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

TABLE OF CONTENTS

SAMPLE SUMMARY

20220228-SGV FED(SB-SW)@13.5-14.5' L1466777-01 Solid

Collected by: Kevin Fletcher | Collected date/time: 02/28/22 08:30 | Received date/time: 03/02/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1831083	1	03/13/22 12:05	03/13/22 12:05	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1828048	1	03/08/22 07:23	03/08/22 09:20	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1826519	1	03/03/22 10:32	03/04/22 10:04	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1826654	1	03/07/22 14:31	03/08/22 17:22	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1826525	1	03/02/22 16:35	03/03/22 11:48	CAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1826344	1	03/02/22 16:35	03/02/22 21:53	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1829131	1	03/09/22 07:58	03/09/22 11:24	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1828170	1	03/07/22 04:09	03/07/22 11:37	AMG	Mt. Juliet, TN

20220228-SGV FED(SB-SW)@23.5-25' L1466777-02 Solid

Collected by: Kevin Fletcher | Collected date/time: 02/28/22 10:00 | Received date/time: 03/02/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1831083	1	03/13/22 12:08	03/13/22 12:08	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1828048	1	03/08/22 07:23	03/08/22 09:20	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1826519	1	03/03/22 10:32	03/04/22 10:07	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1826654	1	03/07/22 14:31	03/08/22 17:25	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1826525	1	03/02/22 16:35	03/03/22 12:10	CAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1826344	1	03/02/22 16:35	03/02/22 22:15	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1829131	1	03/09/22 07:58	03/09/22 12:18	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1828170	1	03/07/22 04:09	03/07/22 11:55	AMG	Mt. Juliet, TN

20220228-SGV FED(SB-NW)@3.5-5.5' L1466777-03 Solid

Collected by: Kevin Fletcher | Collected date/time: 02/28/22 10:55 | Received date/time: 03/02/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1831083	1	03/13/22 12:11	03/13/22 12:11	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1828048	1	03/08/22 07:23	03/08/22 09:20	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1826519	1	03/03/22 10:32	03/04/22 10:10	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1826654	1	03/07/22 14:31	03/08/22 17:34	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1826525	1	03/02/22 16:35	03/03/22 12:31	CAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1826344	1	03/02/22 16:35	03/02/22 22:36	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1829131	1	03/09/22 07:58	03/09/22 12:32	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1828170	1	03/07/22 04:09	03/07/22 12:12	AMG	Mt. Juliet, TN

20220228-SGV FED(SB-NW)@13.5-14.5' L1466777-04 Solid

Collected by: Kevin Fletcher | Collected date/time: 02/28/22 11:50 | Received date/time: 03/02/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1831083	1	03/13/22 12:14	03/13/22 12:14	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1828048	1	03/08/22 07:23	03/08/22 09:20	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1826519	1	03/03/22 10:32	03/04/22 10:12	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1826654	1	03/07/22 14:31	03/08/22 17:36	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1826525	1	03/02/22 16:35	03/03/22 12:53	CAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1826344	1	03/02/22 16:35	03/02/22 22:58	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1829131	1	03/09/22 07:58	03/09/22 11:44	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1829102	1	03/09/22 08:54	03/09/22 13:50	AMG	Mt. Juliet, TN

SAMPLE SUMMARY

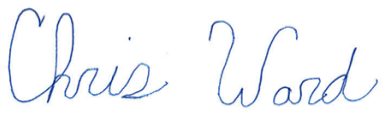
20220228-SGV FED(SB-NW)@23.5-25' L1466777-05 Solid

Collected by: Kevin Fletcher
Collected date/time: 02/28/22 13:05
Received date/time: 03/02/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1831083	1	03/13/22 12:17	03/13/22 12:17	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1828048	1	03/08/22 07:23	03/08/22 09:20	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1826519	1	03/03/22 10:32	03/04/22 10:15	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1826654	1	03/07/22 14:31	03/08/22 17:39	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1826525	1	03/02/22 16:35	03/03/22 13:15	CAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1826506	1	03/02/22 16:35	03/03/22 00:58	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1829131	1	03/09/22 07:58	03/09/22 12:14	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1829102	1	03/09/22 08:54	03/09/22 14:10	AMG	Mt. Juliet, TN

CASE NARRATIVE

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



Chris Ward
Project Manager

Report Revision History

Level II Report - Version 1: 03/09/22 17:12

Project Narrative

Updated for missing SAR

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.97		1	03/13/2022 12:05	WG1831083

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	482		10.0	1	03/08/2022 09:20	WG1828048

Sample Narrative:
L1466777-01 WG1828048: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Barium	282		0.500	1	03/04/2022 10:04	WG1826519

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/l		mg/l			
Hot Water Sol. Boron	ND		0.200	1	03/08/2022 17:22	WG1826654

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
TPH (GC/FID) Low Fraction	ND		0.100	1	03/03/2022 11:48	WG1826525
(S) a,a,a-Trifluorotoluene(FID)	*111*		*77.0-120*		*03/03/2022 11:48*	WG1826525

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Benzene	ND		0.00100	1	03/02/2022 21:53	WG1826344
Toluene	ND		0.00500	1	03/02/2022 21:53	WG1826344
Ethylbenzene	ND		0.00250	1	03/02/2022 21:53	WG1826344
Xylenes, Total	ND		0.00650	1	03/02/2022 21:53	WG1826344
1,2,4-Trimethylbenzene	0.00614		0.00500	1	03/02/2022 21:53	WG1826344
1,3,5-Trimethylbenzene	ND		0.00500	1	03/02/2022 21:53	WG1826344
(S) Toluene-d8	*96.1*		*75.0-131*		*03/02/2022 21:53*	WG1826344
(S) 4-Bromofluorobenzene	*99.7*		*67.0-138*		*03/02/2022 21:53*	WG1826344
(S) 1,2-Dichloroethane-d4	*109*		*70.0-130*		*03/02/2022 21:53*	WG1826344

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
C10-C28 Diesel Range	26.3		4.00	1	03/09/2022 11:24	WG1829131
C28-C36 Motor Oil Range	25.0		4.00	1	03/09/2022 11:24	WG1829131
(S) o-Terphenyl	*64.6*		*18.0-148*		*03/09/2022 11:24*	WG1829131

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Fluorene	ND		0.00600	1	03/07/2022 11:37	WG1828170
1-Methylnaphthalene	ND		0.0200	1	03/07/2022 11:37	WG1828170
2-Methylnaphthalene	ND		0.0200	1	03/07/2022 11:37	WG1828170

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Naphthalene	ND		0.0200	1	03/07/2022 11:37	WG1828170
(S) p-Terphenyl-d14	*100*		*23.0-120*		*03/07/2022 11:37*	WG1828170
(S) Nitrobenzene-d5	*87.8*		*14.0-149*		*03/07/2022 11:37*	WG1828170
(S) 2-Fluorobiphenyl	*88.6*		*34.0-125*		*03/07/2022 11:37*	WG1828170

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.759		1	03/13/2022 12:08	WG1831083

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	150		10.0	1	03/08/2022 09:20	WG1828048

Sample Narrative:
L1466777-02 WG1828048: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Barium	306		0.500	1	03/04/2022 10:07	WG1826519

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/l		mg/l			
Hot Water Sol. Boron	ND		0.200	1	03/08/2022 17:25	WG1826654

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
TPH (GC/FID) Low Fraction	0.448		0.100	1	03/03/2022 12:10	WG1826525
(S) a,a,a-Trifluorotoluene(FID)	*106*		*77.0-120*		*03/03/2022 12:10*	WG1826525

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Benzene	ND		0.00100	1	03/02/2022 22:15	WG1826344
Toluene	0.0194		0.00500	1	03/02/2022 22:15	WG1826344
Ethylbenzene	0.00683		0.00250	1	03/02/2022 22:15	WG1826344
Xylenes, Total	0.121		0.00650	1	03/02/2022 22:15	WG1826344
1,2,4-Trimethylbenzene	0.0411		0.00500	1	03/02/2022 22:15	WG1826344
1,3,5-Trimethylbenzene	0.0285		0.00500	1	03/02/2022 22:15	WG1826344
(S) Toluene-d8	*96.7*		*75.0-131*		*03/02/2022 22:15*	WG1826344
(S) 4-Bromofluorobenzene	*96.1*		*67.0-138*		*03/02/2022 22:15*	WG1826344
(S) 1,2-Dichloroethane-d4	*102*		*70.0-130*		*03/02/2022 22:15*	WG1826344

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
C10-C28 Diesel Range	8.20		4.00	1	03/09/2022 12:18	WG1829131
C28-C36 Motor Oil Range	25.4		4.00	1	03/09/2022 12:18	WG1829131
(S) o-Terphenyl	*79.8*		*18.0-148*		*03/09/2022 12:18*	WG1829131

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Fluorene	ND		0.00600	1	03/07/2022 11:55	WG1828170
1-Methylnaphthalene	ND		0.0200	1	03/07/2022 11:55	WG1828170
2-Methylnaphthalene	ND		0.0200	1	03/07/2022 11:55	WG1828170

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Naphthalene	ND		0.0200	1	03/07/2022 11:55	WG1828170
(S) p-Terphenyl-d14	*94.3*		*23.0-120*		*03/07/2022 11:55*	WG1828170
(S) Nitrobenzene-d5	*81.7*		*14.0-149*		*03/07/2022 11:55*	WG1828170
(S) 2-Fluorobiphenyl	*83.6*		*34.0-125*		*03/07/2022 11:55*	WG1828170

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.518		1	03/13/2022 12:11	WG1831083

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	627		10.0	1	03/08/2022 09:20	WG1828048

Sample Narrative:
L1466777-03 WG1828048: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Barium	230		0.500	1	03/04/2022 10:10	WG1826519

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/l		mg/l			
Hot Water Sol. Boron	1.09		0.200	1	03/08/2022 17:34	WG1826654

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
TPH (GC/FID) Low Fraction	0.344		0.100	1	03/03/2022 12:31	WG1826525
(S) a,a,a-Trifluorotoluene(FID)	*107*		*77.0-120*		*03/03/2022 12:31*	WG1826525

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Benzene	ND		0.00100	1	03/02/2022 22:36	WG1826344
Toluene	ND		0.00500	1	03/02/2022 22:36	WG1826344
Ethylbenzene	ND		0.00250	1	03/02/2022 22:36	WG1826344
Xylenes, Total	0.0350		0.00650	1	03/02/2022 22:36	WG1826344
1,2,4-Trimethylbenzene	0.0432		0.00500	1	03/02/2022 22:36	WG1826344
1,3,5-Trimethylbenzene	0.126		0.00500	1	03/02/2022 22:36	WG1826344
(S) Toluene-d8	*96.8*		*75.0-131*		*03/02/2022 22:36*	WG1826344
(S) 4-Bromofluorobenzene	*97.4*		*67.0-138*		*03/02/2022 22:36*	WG1826344
(S) 1,2-Dichloroethane-d4	*105*		*70.0-130*		*03/02/2022 22:36*	WG1826344

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
C10-C28 Diesel Range	22.0		4.00	1	03/09/2022 12:32	WG1829131
C28-C36 Motor Oil Range	23.2		4.00	1	03/09/2022 12:32	WG1829131
(S) o-Terphenyl	*76.6*		*18.0-148*		*03/09/2022 12:32*	WG1829131

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Fluorene	ND		0.00600	1	03/07/2022 12:12	WG1828170
1-Methylnaphthalene	ND		0.0200	1	03/07/2022 12:12	WG1828170
2-Methylnaphthalene	ND		0.0200	1	03/07/2022 12:12	WG1828170

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Naphthalene	ND		0.0200	1	03/07/2022 12:12	WG1828170
(S) p-Terphenyl-d14	*87.9*		*23.0-120*		*03/07/2022 12:12*	WG1828170
(S) Nitrobenzene-d5	*80.6*		*14.0-149*		*03/07/2022 12:12*	WG1828170
(S) 2-Fluorobiphenyl	*78.1*		*34.0-125*		*03/07/2022 12:12*	WG1828170

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.923		1	03/13/2022 12:14	WG1831083

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	217		10.0	1	03/08/2022 09:20	WG1828048

Sample Narrative:
L1466777-04 WG1828048: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Barium	251		0.500	1	03/04/2022 10:12	WG1826519

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/l		mg/l			
Hot Water Sol. Boron	ND		0.200	1	03/08/2022 17:36	WG1826654

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
TPH (GC/FID) Low Fraction	0.195		0.100	1	03/03/2022 12:53	WG1826525
(S) a,a,a-Trifluorotoluene(FID)	*106*		*77.0-120*		*03/03/2022 12:53*	WG1826525

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Benzene	ND		0.00100	1	03/02/2022 22:58	WG1826344
Toluene	ND		0.00500	1	03/02/2022 22:58	WG1826344
Ethylbenzene	ND		0.00250	1	03/02/2022 22:58	WG1826344
Xylenes, Total	0.00785		0.00650	1	03/02/2022 22:58	WG1826344
1,2,4-Trimethylbenzene	ND		0.00500	1	03/02/2022 22:58	WG1826344
1,3,5-Trimethylbenzene	ND		0.00500	1	03/02/2022 22:58	WG1826344
(S) Toluene-d8	*96.8*		*75.0-131*		*03/02/2022 22:58*	WG1826344
(S) 4-Bromofluorobenzene	*99.9*		*67.0-138*		*03/02/2022 22:58*	WG1826344
(S) 1,2-Dichloroethane-d4	*110*		*70.0-130*		*03/02/2022 22:58*	WG1826344

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
C10-C28 Diesel Range	ND		4.00	1	03/09/2022 11:44	WG1829131
C28-C36 Motor Oil Range	4.35		4.00	1	03/09/2022 11:44	WG1829131
(S) o-Terphenyl	*71.9*		*18.0-148*		*03/09/2022 11:44*	WG1829131

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Fluorene	ND		0.00600	1	03/09/2022 13:50	WG1829102
1-Methylnaphthalene	ND		0.0200	1	03/09/2022 13:50	WG1829102
2-Methylnaphthalene	ND		0.0200	1	03/09/2022 13:50	WG1829102

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Naphthalene	ND		0.0200	1	03/09/2022 13:50	WG1829102
(S) p-Terphenyl-d14	*105*		*23.0-120*		*03/09/2022 13:50*	WG1829102
(S) Nitrobenzene-d5	*91.8*		*14.0-149*		*03/09/2022 13:50*	WG1829102
(S) 2-Fluorobiphenyl	*91.6*		*34.0-125*		*03/09/2022 13:50*	WG1829102

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.260		1	03/13/2022 12:17	WG1831083

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	222		10.0	1	03/08/2022 09:20	WG1828048

Sample Narrative:
L1466777-05 WG1828048: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Barium	248		0.500	1	03/04/2022 10:15	WG1826519

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/l		mg/l			
Hot Water Sol. Boron	0.205		0.200	1	03/08/2022 17:39	WG1826654

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
TPH (GC/FID) Low Fraction	0.387		0.100	1	03/03/2022 13:15	WG1826525
(S) a,a,a-Trifluorotoluene(FID)	*104*		*77.0-120*		*03/03/2022 13:15*	WG1826525

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Benzene	0.00131		0.00100	1	03/03/2022 00:58	WG1826506
Toluene	0.0116		0.00500	1	03/03/2022 00:58	WG1826506
Ethylbenzene	ND		0.00250	1	03/03/2022 00:58	WG1826506
Xylenes, Total	0.0308		0.00650	1	03/03/2022 00:58	WG1826506
1,2,4-Trimethylbenzene	0.00911		0.00500	1	03/03/2022 00:58	WG1826506
1,3,5-Trimethylbenzene	0.00641		0.00500	1	03/03/2022 00:58	WG1826506
(S) Toluene-d8	*104*		*75.0-131*		*03/03/2022 00:58*	WG1826506
(S) 4-Bromofluorobenzene	*87.7*		*67.0-138*		*03/03/2022 00:58*	WG1826506
(S) 1,2-Dichloroethane-d4	*95.8*		*70.0-130*		*03/03/2022 00:58*	WG1826506

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
C10-C28 Diesel Range	4.06		4.00	1	03/09/2022 12:14	WG1829131
C28-C36 Motor Oil Range	6.25		4.00	1	03/09/2022 12:14	WG1829131
(S) o-Terphenyl	*68.5*		*18.0-148*		*03/09/2022 12:14*	WG1829131

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Fluorene	ND		0.00600	1	03/09/2022 14:10	WG1829102
1-Methylnaphthalene	ND		0.0200	1	03/09/2022 14:10	WG1829102
2-Methylnaphthalene	ND		0.0200	1	03/09/2022 14:10	WG1829102

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Naphthalene	ND		0.0200	1	03/09/2022 14:10	WG1829102
(S) p-Terphenyl-d14	*108*		*23.0-120*		*03/09/2022 14:10*	WG1829102
(S) Nitrobenzene-d5	*89.1*		*14.0-149*		*03/09/2022 14:10*	WG1829102
(S) 2-Fluorobiphenyl	*90.3*		*34.0-125*		*03/09/2022 14:10*	WG1829102

Method Blank (MB)

(MB) R3767363-1 03/08/22 09:20

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

L1466765-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1466765-01 03/08/22 09:20 • (DUP) R3767363-3 03/08/22 09:20

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	250	243	1	2.72		20

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

L1468238-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1468238-01 03/08/22 09:20 • (DUP) R3767363-4 03/08/22 09:20

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	424	438	1	3.25		20

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

Laboratory Control Sample (LCS)

(LCS) R3767363-2 03/08/22 09:20

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	273	102	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3766593-1 03/04/22 09:22

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Barium	U		0.0852	0.500

Laboratory Control Sample (LCS)

(LCS) R3766593-2 03/04/22 09:25

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	96.9	96.9	80.0-120	

L1466807-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1466807-01 03/04/22 09:27 • (MS) R3766593-5 03/04/22 09:35 • (MSD) R3766593-6 03/04/22 09:37

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 %
Barium	100	104	183	206	78.4	102	1	75.0-125			12.1	20

Method Blank (MB)

(MB) R3767692-1 03/08/22 17:00

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

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

(LCS) R3767692-2 03/08/22 17:03 • (LCSD) R3767692-3 03/08/22 17:05

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	1.05	1.06	105	106	80.0-120			0.501	20

Method Blank (MB)

(MB) R3766031-2 03/03/22 08:12

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*110*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3766031-1 03/03/22 07:29

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.48	81.5	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*99.1*	*77.0-120*	

Method Blank (MB)

(MB) R3765888-3 03/02/22 15:22

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	*89.6*			*75.0-131*
(S) 4-Bromofluorobenzene	*98.6*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*104*			*70.0-130*

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

(LCS) R3765888-1 03/02/22 13:59 • (LCSD) R3765888-2 03/02/22 14:19

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.115	0.115	92.0	92.0	70.0-123			0.000	20
Toluene	0.125	0.110	0.107	88.0	85.6	75.0-121			2.76	20
Ethylbenzene	0.125	0.112	0.109	89.6	87.2	74.0-126			2.71	20
Xylenes, Total	0.375	0.361	0.348	96.3	92.8	72.0-127			3.67	20
1,2,4-Trimethylbenzene	0.125	0.122	0.123	97.6	98.4	70.0-126			0.816	20
1,3,5-Trimethylbenzene	0.125	0.121	0.122	96.8	97.6	73.0-127			0.823	20
(S) Toluene-d8				*94.2*	*93.6*	*75.0-131*				
(S) 4-Bromofluorobenzene				*101*	*98.2*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*114*	*109*	*70.0-130*				

L1466405-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1466405-02 03/02/22 19:46 • (MS) R3765888-4 03/02/22 23:41 • (MSD) R3765888-5 03/03/22 00:02

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.144	ND	0.124	0.0367	99.2	29.4	1	10.0-149		J3	109	37
Toluene	0.144	ND	0.118	0.0395	94.4	31.6	1	10.0-156		J3	99.7	38
Ethylbenzene	0.144	ND	0.120	0.0331	96.0	26.5	1	10.0-160		J3	114	38
Xylenes, Total	0.432	ND	0.391	0.121	104	32.3	1	10.0-160		J3	105	38
1,2,4-Trimethylbenzene	0.144	ND	0.166	0.0539	133	43.1	1	10.0-160		J3	102	36
1,3,5-Trimethylbenzene	0.144	ND	0.131	0.0409	105	32.7	1	10.0-160		J3	105	38
(S) Toluene-d8					*98.8*	*101*		*75.0-131*				
(S) 4-Bromofluorobenzene					*105*	*105*		*67.0-138*				
(S) 1,2-Dichloroethane-d4					*102*	*105*		*70.0-130*				

Method Blank (MB)

(MB) R3765760-3 03/03/22 00:00

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	*106*			*75.0-131*
(S) 4-Bromofluorobenzene	*88.8*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*96.6*			*70.0-130*

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

(LCS) R3765760-1 03/02/22 22:42 • (LCSD) R3765760-2 03/02/22 23:01

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	0.120	0.122	96.0	97.6	70.0-123			1.65	20
Toluene	0.125	0.117	0.117	93.6	93.6	75.0-121			0.000	20
Ethylbenzene	0.125	0.109	0.109	87.2	87.2	74.0-126			0.000	20
Xylenes, Total	0.375	0.333	0.334	88.8	89.1	72.0-127			0.300	20
1,2,4-Trimethylbenzene	0.125	0.109	0.109	87.2	87.2	70.0-126			0.000	20
1,3,5-Trimethylbenzene	0.125	0.113	0.115	90.4	92.0	73.0-127			1.75	20
(S) Toluene-d8				*99.1*	*99.8*	*75.0-131*				
(S) 4-Bromofluorobenzene				*88.9*	*90.8*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*104*	*106*	*70.0-130*				

L1466553-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1466553-01 03/03/22 05:31 • (MS) R3765760-4 03/03/22 08:47 • (MSD) R3765760-5 03/03/22 09:07

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.144	ND	0.134	0.142	97.8	104	1.09	10.0-149			5.80	37
Toluene	0.144	ND	0.145	0.151	106	110	1.09	10.0-156			4.05	38
Ethylbenzene	0.144	ND	0.127	0.136	92.7	99.3	1.09	10.0-160			6.84	38
Xylenes, Total	0.430	ND	0.402	0.420	98.3	103	1.09	10.0-160			4.38	38
1,2,4-Trimethylbenzene	0.144	ND	0.129	0.139	94.2	101	1.09	10.0-160			7.46	36
1,3,5-Trimethylbenzene	0.144	ND	0.138	0.144	101	105	1.09	10.0-160			4.26	38
(S) Toluene-d8					*103*	*103*		*75.0-131*				
(S) 4-Bromofluorobenzene					*86.6*	*88.4*		*67.0-138*				
(S) 1,2-Dichloroethane-d4					*90.3*	*90.6*		*70.0-130*				

Method Blank (MB)

(MB) R3767972-1 03/09/22 11:07

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	*59.3*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3767972-2 03/09/22 11:20

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	34.6	69.2	50.0-150	
(S) o-Terphenyl			*73.3*	*18.0-148*	

L1467125-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1467125-06 03/09/22 12:12 • (MS) R3767972-3 03/09/22 12:25 • (MSD) R3767972-4 03/09/22 12:37

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 %
C10-C28 Diesel Range	49.2	ND	22.8	24.1	46.3	48.8	1	50.0-150	J6	J6	5.54	20
(S) o-Terphenyl					*46.3*	*51.4*		*18.0-148*				

Method Blank (MB)

(MB) R3767072-2 03/07/22 09:18

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Fluorene	U		0.00205	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
Naphthalene	U		0.00408	0.0200
(S) p-Terphenyl-d14	*114*			*23.0-120*
(S) Nitrobenzene-d5	*96.5*			*14.0-149*
(S) 2-Fluorobiphenyl	*97.6*			*34.0-125*

Laboratory Control Sample (LCS)

(LCS) R3767072-1 03/07/22 09:00

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0715	89.4	49.0-120	
1-Methylnaphthalene	0.0800	0.0713	89.1	51.0-121	
2-Methylnaphthalene	0.0800	0.0683	85.4	50.0-120	
Naphthalene	0.0800	0.0705	88.1	50.0-120	
(S) p-Terphenyl-d14			*111*	*23.0-120*	
(S) Nitrobenzene-d5			*99.3*	*14.0-149*	
(S) 2-Fluorobiphenyl			*97.7*	*34.0-125*	

L1468211-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1468211-02 03/07/22 12:47 • (MS) R3767072-3 03/07/22 13:04 • (MSD) R3767072-4 03/07/22 13:22

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 %
Fluorene	0.0800	ND	0.0740	0.0713	92.5	89.1	1	11.0-130			3.72	29
1-Methylnaphthalene	0.0800	ND	0.0733	0.0702	91.6	87.8	1	10.0-142			4.32	28
2-Methylnaphthalene	0.0800	ND	0.0710	0.0678	88.8	84.8	1	10.0-137			4.61	28
Naphthalene	0.0800	ND	0.0731	0.0701	91.4	87.6	1	10.0-135			4.19	27
(S) p-Terphenyl-d14					*114*	*112*		*23.0-120*				
(S) Nitrobenzene-d5					*104*	*98.4*		*14.0-149*				
(S) 2-Fluorobiphenyl					*102*	*97.4*		*34.0-125*				

Method Blank (MB)

(MB) R3768002-2 03/09/22 13:31

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Fluorene	U		0.00205	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
Naphthalene	U		0.00408	0.0200
(S) p-Terphenyl-d14	*114*			*23.0-120*
(S) Nitrobenzene-d5	*92.8*			*14.0-149*
(S) 2-Fluorobiphenyl	*93.9*			*34.0-125*

Laboratory Control Sample (LCS)

(LCS) R3768002-1 03/09/22 13:11

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0700	87.5	49.0-120	
1-Methylnaphthalene	0.0800	0.0669	83.6	51.0-121	
2-Methylnaphthalene	0.0800	0.0648	81.0	50.0-120	
Naphthalene	0.0800	0.0656	82.0	50.0-120	
(S) p-Terphenyl-d14			*103*	*23.0-120*	
(S) Nitrobenzene-d5			*89.9*	*14.0-149*	
(S) 2-Fluorobiphenyl			*88.1*	*34.0-125*	

L1466397-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1466397-02 03/09/22 15:50 • (MS) R3768002-3 03/09/22 16:10 • (MSD) R3768002-4 03/09/22 16:30

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Fluorene	0.0790	ND	0.0562	0.0595	71.3	75.9	1	11.0-130			5.70	29
1-Methylnaphthalene	0.0790	ND	0.0574	0.0608	72.8	77.6	1	10.0-142			5.75	28
2-Methylnaphthalene	0.0790	ND	0.0564	0.0589	71.6	75.1	1	10.0-137			4.34	28
Naphthalene	0.0790	ND	0.0569	0.0603	72.2	76.9	1	10.0-135			5.80	27
(S) p-Terphenyl-d14					*92.0*	*91.9*		*23.0-120*				
(S) Nitrobenzene-d5					*89.9*	*90.3*		*14.0-149*				
(S) 2-Fluorobiphenyl					*81.1*	*83.6*		*34.0-125*				

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
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.

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	LAO000356
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: **SGV Federal Dry Gas Release**

City/State Collected: ~~Mamm~~ Wallace Creek, CO

Phone:
Fax:

Client Project # **SGV F**

Lab Project # **SGV F**

Collected by (print): Kevin Fletcher

Site/Facility ID # **SGV F**

P.O. # **SGV F**

Collected by (signature):

Immediately Packed on Ice N ___ Y X

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 #

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TPH- GRO,DRO,ORO	BTEX	1,2,4- trimethylbenzene	SAR, EC, Boron, barium	1,3,5- trimethylbenzene	napthalene, flourene	1-methylnapthalene	2-methylnapthalene			Remarks	Sample # (lab only)
20220228-SGV Fed (SB-SW) @13.5-14.5	Grab	SS		2/28/22	0830	2	X	X	X	X	X	X	X	X				-01
20220228-SGV Fed (SB-SW) @23.5-25	Grab	↓		↓	1000	↓	↓	↓	↓	↓	↓	↓	↓	↓				-02
20220228-SGV Fed (SB-NW) @3.5-8.5	Grab				1055													-03
20220228-SGV Fed (SB-NW) @13.5-14.5	Grab				1150													-04
20220228-SGV Fed (SB-NW) @23.5-25	Grab	↓		↓	1305	↓	↓	↓	↓	↓	↓	↓	↓	↓				-05

Chain of Custody Page 1 of 1

Pace Analytical®
National Center for Testing & Innovation

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

L# L1462077
A106

Acctnum:
Template:
Prelogin:
TSR:
PB:
Shipped Via:

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

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier __ _____

Tracking # 5016 1231 9864

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

	Date:	Time:		
Relinquished by : (Signature)	3/1/22	1230	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Relinquished by : (Signature)	3/1/22	1500	Received by: (Signature)	Temp: NSH °C 2.0+0=2.0 Bottles Received: 10
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 3/2/22 Time: 0915

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

3/2-NCF-L1466777 CAERUSPCO

R5

Time estimate: oh **Time spent:** oh

Members

HM Hailey Melson (responsible) Chris Ward

Due on *5 March 2022 8:00 AM* for target *Done*

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

Comments

Hailey Melson *2 March 2022 2:07 PM*

1 jar broken for ID: 20220228-SGVFED(SB-NW)@13.5-14.5. Sample was salvaged into a 4oz jar.

Chris Ward *2 March 2022 2:12 PM*

Please proceed with remaining volume