



VIA ELECTRONIC MAIL –

December 20, 2023

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

**Subject: Off-Location Flowline Closure Sampling
U S A-PICEANCE CREEK F24-6G
Piceance Creek
Rio Blanco, Colorado**

Dear Mr. Janicek:

WSP USA Inc. (WSP), on behalf of Caerus Piceance LLC (Caerus), completed field soil screening and confirmation and site-specific background soil sampling associated with the decommissioning and administrative closure of off-location flowline Facility IDs 464749 and 465039 associated with the U S A-PICEANCE CREEK-62S96W/6SESW (Location ID: 314914) pad location (Site) also known as the U S A-PICEANCE CREEK F24-6G. The samples were collected pursuant to the State of Colorado Energy and Carbon Management Commission (ECMC) Rule 913.c.(9): *Decommissioning of Oil and Gas Facilities*. Please reference Document Number (DN) 4033172024 for previous field activities and sampling results associated with off-location flowlines at the Site. The Site is in the Caerus Piceance Creek area of operation in Rio Blanco, Colorado (Figure 1).

SOIL SAMPLING ACTIVITIES – U S A-PICEANCE CREEK F24-6G

On October 9, 2023, WSP personnel conducted field soil screening and confirmation and site-specific background soil sampling activities associated with the decommissioning and administrative closure of off-location flowline Facility IDs 464749 and 465039 at the Site. Prior to this field work, all five associated off-location flowline locations were cut and capped and the area used to access each associated location was excavated by Whites Construction and Excavation, LLC (Whites). During field soil screening activities, a WSP geologist characterized all sidewalls and bases of each of the associated off-location flowline excavations through visual and olfactory observation and field screened for volatile organic compounds (VOCs) using a photoionization detector (PID). Samples were collected using a spade shovel; base samples were collected directly beneath each cut and capped flowline and the associated sidewall samples were collected at approximately the same depth as each flowline. One base confirmation soil sample [20231009-PCU F24-6G-(FC-FL-ST)@4] was collected from the southern terminus off-location flowline which terminates at the PICEANCE CREEK UNIT-62S96W7NWNW pad location (Facility ID 316247) also known as the PCU T21-7G. One base confirmation soil sample [20231009-PCU F24-6G-(FC-FL-WT)@4] was collected from western terminus off-location flowline which terminates at the PICEANCE CREEK UNIT-62S97W1NESE pad location (Facility ID 316243) also known as the PCU T68-1G. Three additional base confirmation soil samples were collected [20231009-PCU F24-6G-(FC-FL-V1)@6, 20231009-PCU F24-6G-(FC-FL-V2)@4, and 20231009-PCU F24-6G-(FC-FL-V3)@4] from beneath the cut and capped off-location flowlines located to the east of the U S A-PICEANCE CREEK F24-6G pad. Base confirmation soil sample depths ranged from 4 feet below ground surface (bgs) to 6 feet bgs. During sample collection, each of the four sidewalls within each cut and capped excavation were field screened at depths ranging from 4 feet bgs to 5 feet bgs. No hydrocarbon odor or staining was observed during the field screening and confirmation soil sampling process. The table below summarizes all field screened soil samples collected in association with the off-location flowline closure activities.

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Field Soil Screening Results – October 9, 2023

Sample ID	PID (ppm)	Field observations	Laboratory analysis
20231009-PCU F24-6G-(FC-FL-ST)@4	0.2	No staining or odor	Full table 915-1
20231009-PCU F24-6G-(FC-FL-WT)@4	4.1	No staining or odor	Full table 915-1
20231009-PCU F24-6G-(FC-FL-V1)@6	1.3	No staining or odor	Full table 915-1
20231009-PCU F24-6G-(FC-FL-V2)@6	1.0	No staining or odor	Full table 915-1
20231009-PCU F24-6G-(FC-FL-V3)@6	0.7	No staining or odor	Full table 915-1
20231009-PCU F24-6G-(FC-FL-ST-NW)@4	0.3	No staining or odor	Not submitted
20231009-PCU F24-6G-(FC-FL-ST-WW)@4	0.1	No staining or odor	Not submitted
20231009-PCU F24-6G-(FC-FL-ST-EW)@4	0.4	No staining or odor	Not submitted
20231009-PCU F24-6G-(FC-FL-ST-SW)@4	0.5	No staining or odor	Not submitted
20231009-PCU F24-6G-(FC-FL-WT-NW)@4	1.0	No staining or odor	Not submitted
20231009-PCU F24-6G-(FC-FL-WT-WW)@4	0.6	No staining or odor	Not submitted
20231009-PCU F24-6G-(FC-FL-WT-EW)@4	0.2	No staining or odor	Not submitted
20231009-PCU F24-6G-(FC-FL-WT-SW)@4	0.2	No staining or odor	Not submitted
20231009-PCU F24-6G-(FC-FL-V1-NW)@5	0.9	No staining or odor	Not submitted
20231009-PCU F24-6G-(FC-FL-V1-WW)@5	1.0	No staining or odor	Not submitted
20231009-PCU F24-6G-(FC-FL-V1-EW)@5	1.0	No staining or odor	Not submitted
20231009-PCU F24-6G-(FC-FL-V1-SW)@5	1.0	No staining or odor	Not submitted
20231009-PCU F24-6G-(FC-FL-V2-NW)@5	1.2	No staining or odor	Not submitted
20231009-PCU F24-6G-(FC-FL-V2-WW)@5	1.3	No staining or odor	Not submitted
20231009-PCU F24-6G-(FC-FL-V2-EW)@5	0.9	No staining or odor	Not submitted
20231009-PCU F24-6G-(FC-FL-V2-SW)@5	1.9	No staining or odor	Not submitted

Key:

PID: photoionization detector

ppm: parts per million

In addition, five site-specific background soil samples were collected from three hand augured boring locations to the south and southwest directions of the Site from comparable, nearby, non-impacted, native soil, per ECMC Rule 915.e.(2). D. The site-specific background soil sample depths ranged from surface to 3 feet bgs.

All soil samples were collected in clean, laboratory-prepared containers and were submitted to Pace Analytical of Mount Juliet, Tennessee for analysis. Soil samples 20231009-PCU F24-6G-(FC-FL-ST)@4, 20231009-PCU F24-6G-(FC-FL-WT)@4, 20231009-PCU F24-6G-(FC-FL-V1)@6, 20231009-PCU F24-6G-(FC-FL-V2)@6, and 20231009-PCU F24-6G-(FC-FL-V3)@6 were submitted for constituents listed in ECMC Table 915-1. All site-specific background soil samples [20231009-XTBG-(PCU F24-6G-W)@1, 20231009-(PCU F24-6G-E)@1, 20231009-XTBG-(PCU F24-6G-E)@1.5, 20231009-XTBG-(PCU F24-6G-S)@1, and 20231009-XTBG-(PCU F24-6G-S)@3] were submitted for analysis of Table 915-1 metals, sodium adsorption ration (SAR), electrical conductivity (EC), pH, and boron (water soluble). The confirmation and site-specific background soil sample locations are depicted on Figure 2. The soil field screening locations, excavation extent, and base sample location associated with the southern terminus off-location flowline are depicted on Figure 3. The soil field screening locations, excavation extent, and base sample location associated with the western terminus off-location flowline are depicted on Figure 4. The soil field screening locations, excavation extents, and base sample locations associated with vault locations 1 through 3 are depicted on Figure 5. A photolog of field activities that occurred at the Site on October 9, 2023 is included in Enclosure A.

ANALYTICAL RESULTS – U S A-PICEANCE CREEK F24-6G

Laboratory analytical results of the five off-location flowline confirmation soil samples collected from the Site on October 9, 2023, indicate exceedances of the ECMC Table 915-1 Protection of Groundwater Soil Screening Level Concentrations (PGSSLs) for arsenic, barium, chromium (VI), selenium, and zinc and exceedances of the ECMC Table 915-1 Cleanup Concentrations (CCs) for pH and SAR. The documented exceedances are summarized in the table below.



Summary of Off-Location Flowline Soil Analytical Exceedances – October 9, 2023

Soil Sample ID	ECMC Table 915-1 Contaminants of Concern	Units	ECMC Protection of Groundwater Soil Screening Level Concentrations	Confirmation Soil Sample Concentration
20231009-PCU F24-6G-(FC-FL-ST)@4	Arsenic	mg/kg	0.29 (M)	4.05
	Barium	mg/kg	82 (M)	266
	Selenium	mg/kg	0.26 (M)	0.362
	pH	SU	6 – 8.3	9.48
20231009-PCU F24-6G-(FC-FL-WT)@4	Arsenic	mg/kg	0.29 (M)	3.21
	Barium	mg/kg	82 (M)	196
	Chromium (VI)	mg/kg	0.00067 (R)	0.269
	pH	SU	6 – 8.3	8.50
20231009-PCU F24-6G-(FC-FL-V1)@6	Arsenic	mg/kg	0.29 (M)	4.25
	Barium	mg/kg	82 (M)	187
	Chromium (VI)	mg/kg	0.00067 (R)	0.256
	pH	SU	6 – 8.3	8.48
20231009-PCU F24-6G-(FC-FL-V2)@6	Arsenic	mg/kg	0.29 (M)	4.53
	Barium	mg/kg	82 (M)	174
	Chromium (VI)	mg/kg	0.00067 (R)	0.315
	Zinc	mg/kg	370 (R)	451
	pH	SU	6 – 8.3	9.16
	SAR	Unitless	<6	6.32
20231009-PCU F24-6G-(FC-FL-V3)@6	Arsenic	mg/kg	0.29 (M)	4.38
	Barium	mg/kg	82 (M)	200
	Chromium (VI)	mg/kg	0.00067 (R)	0.285
	Selenium	mg/kg	0.26 (M)	0.268
	Zinc	mg/kg	370 (R)	1,190
	pH	SU	6 – 8.3	8.76

Key:

mg/kg – milligrams per kilogram

SU – standard unit

ECMC – Colorado Energy and Carbon Management Commission

M – maximum contaminant level based

SAR – sodium adsorption ratio

BOLD – indicates result exceeds the ECMC protection of groundwater soil screening level concentration

R – risk based

< – less than

All other analytes were either below the laboratory detection limit or within the ECMC Table 915-1 PGSSLCs. However, the laboratory detection limit for chromium (VI) [0.255 milligram per kilogram (mg/kg)] is above the Table 915-1 PGSSLC risk based (R) for chromium (VI) [0.00067 mg/kg]. The laboratory analytical reports are included in Enclosure B and the results are summarized in Table 1.

Laboratory analytical results of the five site-specific background soil samples collected from the Site on October 9, 2023, indicate exceedances of the ECMC Table 915-1 PGSSLCs for arsenic, barium, chromium (IV), cadmium, and selenium, and exceedances of the ECMC Table 915-1 CCs for pH. The documented exceedances are summarized in the table below.

Summary of Site-Specific Background Soil Analytical Exceedances – October 9, 2023

Background Soil Sample ID	ECMC Table 915-1 Contaminants of Concern	Units	ECMC Protection of Groundwater Soil Screening Level Concentrations	Background Soil Sample Concentration
20231009-XTBG-(PCU F24-6G-W)@1	Arsenic	mg/kg	0.29 (M)	4.40
	Barium	mg/kg	82 (M)	201
	Selenium	mg/kg	0.26 (M)	0.521

20231009-XTBG-(PCU F24-6G-E)@1	Arsenic	mg/kg	0.29 (M)	4.30
	Barium	mg/kg	82 (M)	231
	Chromium (VI)	mg/kg	0.00067 (R)	0.345
	Selenium	mg/kg	0.26 (M)	0.752
	pH	SU	6 – 8.3	8.57
20231009-XTBG-(PCU F24-6G-E)@1.5	Arsenic	mg/kg	0.29 (M)	5.56
	Barium	mg/kg	82 (M)	229
	Selenium	mg/kg	0.26 (M)	0.760
	pH	SU	6 – 8.3	8.63
20231009-XTBG-(PCU F24-6G-S)@1	Arsenic	mg/kg	0.29 (M)	5.74
	Barium	mg/kg	82 (M)	194
	Selenium	mg/kg	0.26 (M)	0.647
	pH	SU	6 – 8.3	8.58
20231009-XTBG—(PCU F24-6G-S)@3	Arsenic	mg/kg	0.29 (M)	4.83
	Barium	mg/kg	82 (M)	210
	Cadmium	mg/kg	0.38 (M)	6.47
	Selenium	mg/kg	0.26 (M)	0.297
	pH	SU	6 – 8.3	8.82

Key:

mg/kg - milligrams per kilogram

M - maximum contaminant level based

< - less than

BOLD - indicates result exceeds the ECMC protection of groundwater soil screening level concentration

SU – standard unit

ECMC - Colorado Energy and Carbon Management Commission

R – risk based

All other analytes were either below the laboratory detection limit or within the ECMC Table 915-1 PGSSLCs. However, the laboratory detection limit for chromium (VI) [0.255 mg/kg] is above the Table 915-1 PGSSLC risk based (R) for chromium (VI) [0.00067 mg/kg]. The laboratory analytical reports are included in Enclosure B and the results are summarized in Table 1. A site map showing the off-location flowline analytical exceedances is included in Figure 6. A site map showing the site-specific background analytical exceedances is included in Figure 7.

CONCLUSIONS – U S A-PICEANCE CREEK F24-6G

Based on the analytical data provided herein from the confirmation and background soil sampling activities associated with the administrative closure of off-location flowline Facility IDs 464749 and 465039 associated with the U S A-PICEANCE CREEK F24-6G-62S96W / 6SESW (Location ID: 314914), there are remaining ECMC Table 915-1 exceedances of arsenic, barium, chromium (VI), selenium, zinc, pH, and SAR. Please reference Supplemental Form 27 DN 403596556 “Remediation Summary” and “Operator Comments” sections for a summary of how Caerus plans to address the above-mentioned exceedances.

Laboratory analytical results of previously collected site-specific background samples are summarized in Table 2 and the sample locations with respect the Site are depicted on Figure 8. The laboratory analytical reports are provided in Enclosure B.

Please reference DN 403172020 for field sampling data and soil analytical results associated with previously completed off-location flowline sampling of off-location flowline Facility IDs 464749 and 465039 at the Site. The laboratory analytical report from the initial decommissioning off-location flowline confirmation sampling is included in Enclosure B and the results are summarized in Table 2. The initial decommissioning off-location flowline confirmation soil sample locations are referenced on Figure 8.

Please reference Figure 9 for a sample location map depicting the proximity of the Site and production well PICEANCE CREEK UNIT #T14X-13G (Facility ID: 259787) (API 103-10120) when reviewing the relief request of pH per Rule 915.e.(2).C (site-specific waste characterization) as outlined in the “Operator Comments” section of ECMC DN 403596556. The analytical data is included in Enclosure B.



Based on the data provided, WSP recommends that Caerus request “No Further Action” and closure of RPN 31234. This recommendation is based on the reasonings stated above and in ECMC DN 403596556.

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

Kind regards,

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

Dustin Held
Sr. Consultant, Environmental Geologist

A handwritten signature in black ink, appearing to be 'Parker Coit'.

Parker Coit, P.G.
Lead Consultant, Geologist

Encl.

FIGURES

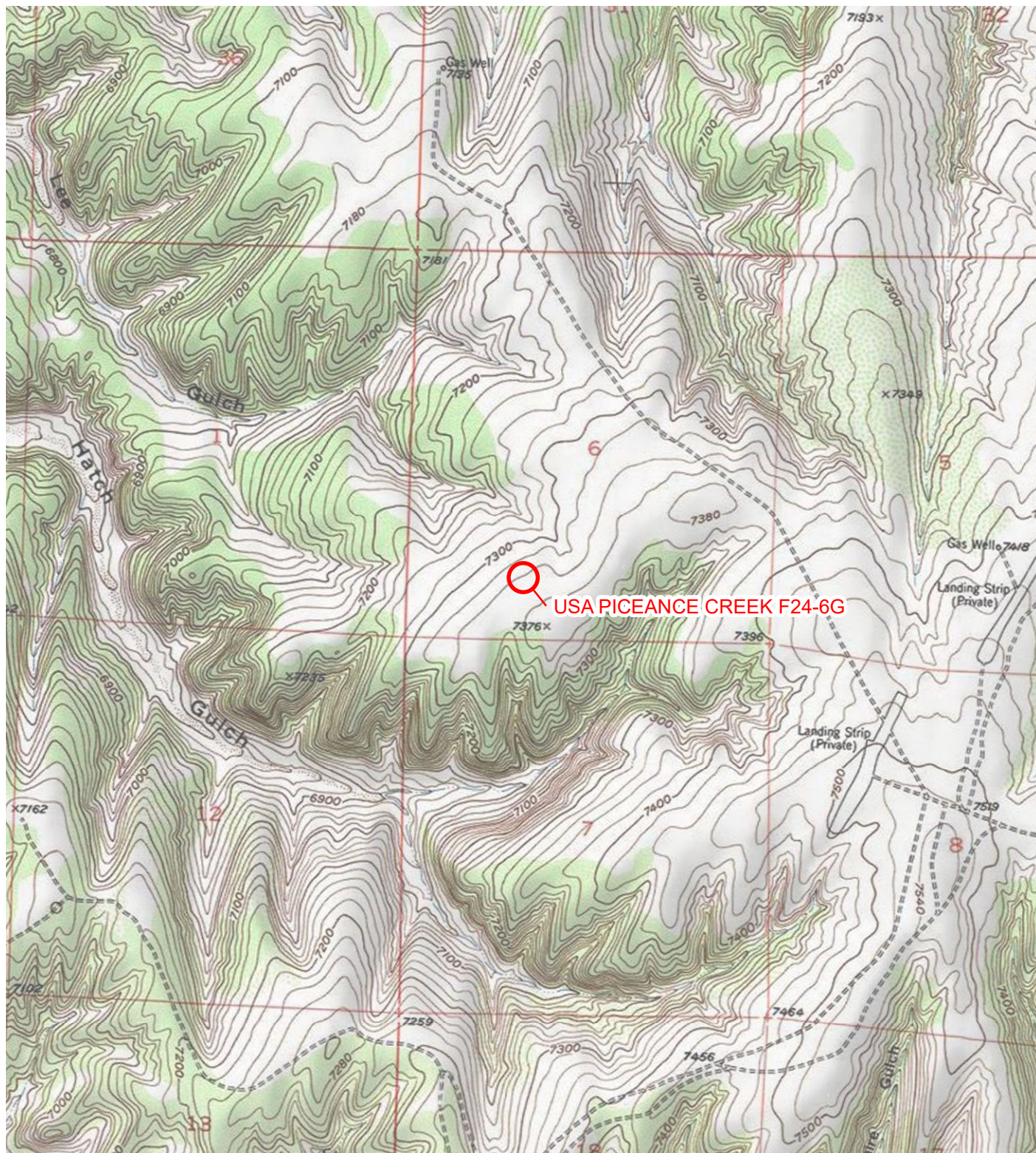
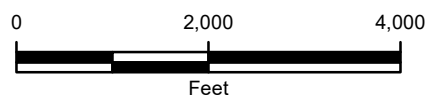


IMAGE COURTESY OF ESRI/USGS

LEGEND

○ SITE LOCATION



COLORADO

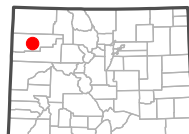


FIGURE 1
SITE LOCATION MAP
 USA PICEANCE CREEK F24-6G
 LOT 31 SEC 6-T2S-R96W
 RIO BLANCO COUNTY, COLORADO
 CAERUS PICEANCE LLC

wsp



IMAGE COURTESY OF ESRI/MAXAR (2021)

LEGEND

- SOIL SAMPLE
- ▲ BACKGROUND SOIL SAMPLE

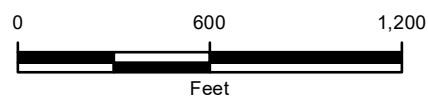


FIGURE 2
VAULT AND BACKGROUND SAMPLING LOCATIONS
USA PICEANCE CREEK F24-6G
LOT 31 SEC 6-T2S-R96W
RIO BLANCO COUNTY, COLORADO
CAERUS PICEANCE LLC



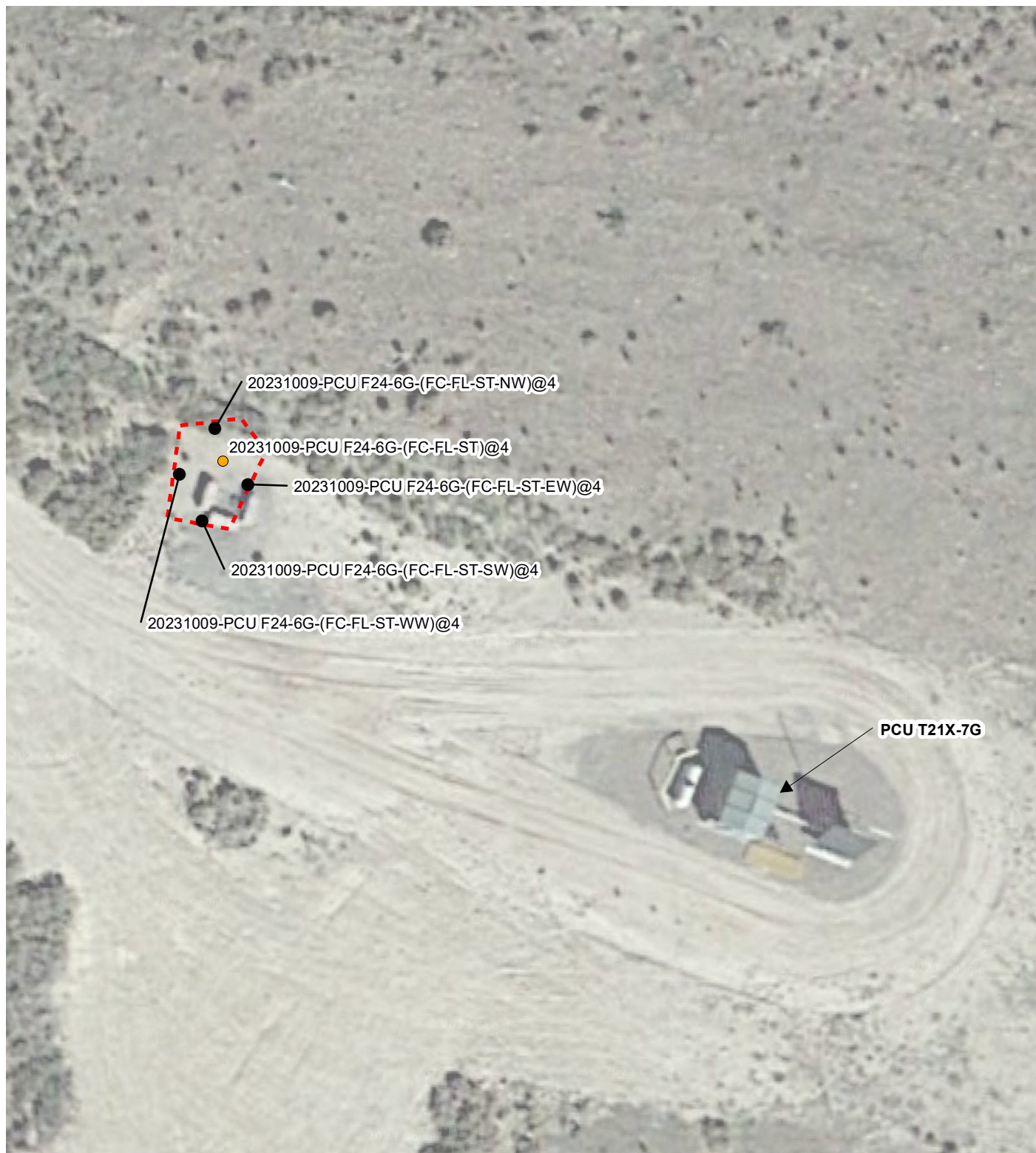


IMAGE COURTESY OF ESRI/MAXAR (2021)

LEGEND

- SOIL SAMPLE
- SOIL SCREENING SAMPLE

EXCAVATION

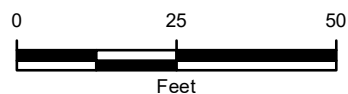


FIGURE 3
SOIL SAMPLE LOCATION MAP - SOUTHERN TERMINUS
USA PICEANCE CREEK F24-6G
LOT 31 SEC 6-T2S-R96W
RIO BLANCO COUNTY, COLORADO
CAERUS PICEANCE LLC





IMAGE COURTESY OF ESRI/MAXAR (2021)

LEGEND

- SOIL SAMPLE
- SOIL SCREENING SAMPLE
- EXCAVATION

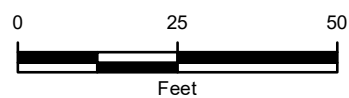


FIGURE 4
SOIL SAMPLE LOCATION MAP - WESTERN TERMINUS
USA PICEANCE CREEK F24-6G
LOT 31 SEC 6-T2S-R96W
RIO BLANCO COUNTY, COLORADO
CAERUS PICEANCE LLC



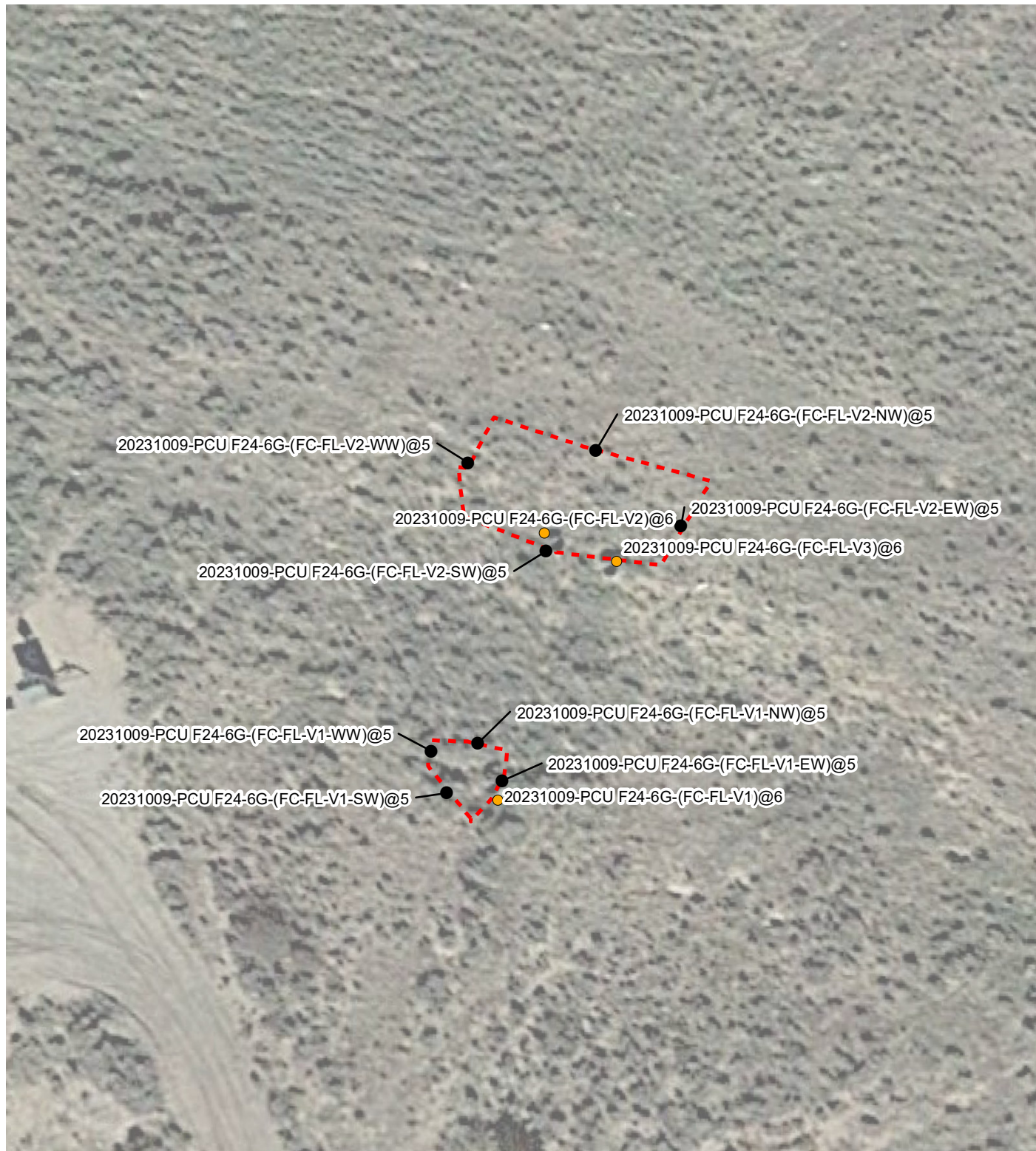


IMAGE COURTESY OF ESRI/MAXAR (2021)

LEGEND

- SOIL SAMPLE
- SOIL SCREENING SAMPLE
- EXCAVATION

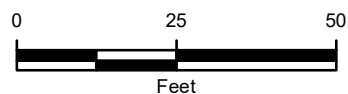
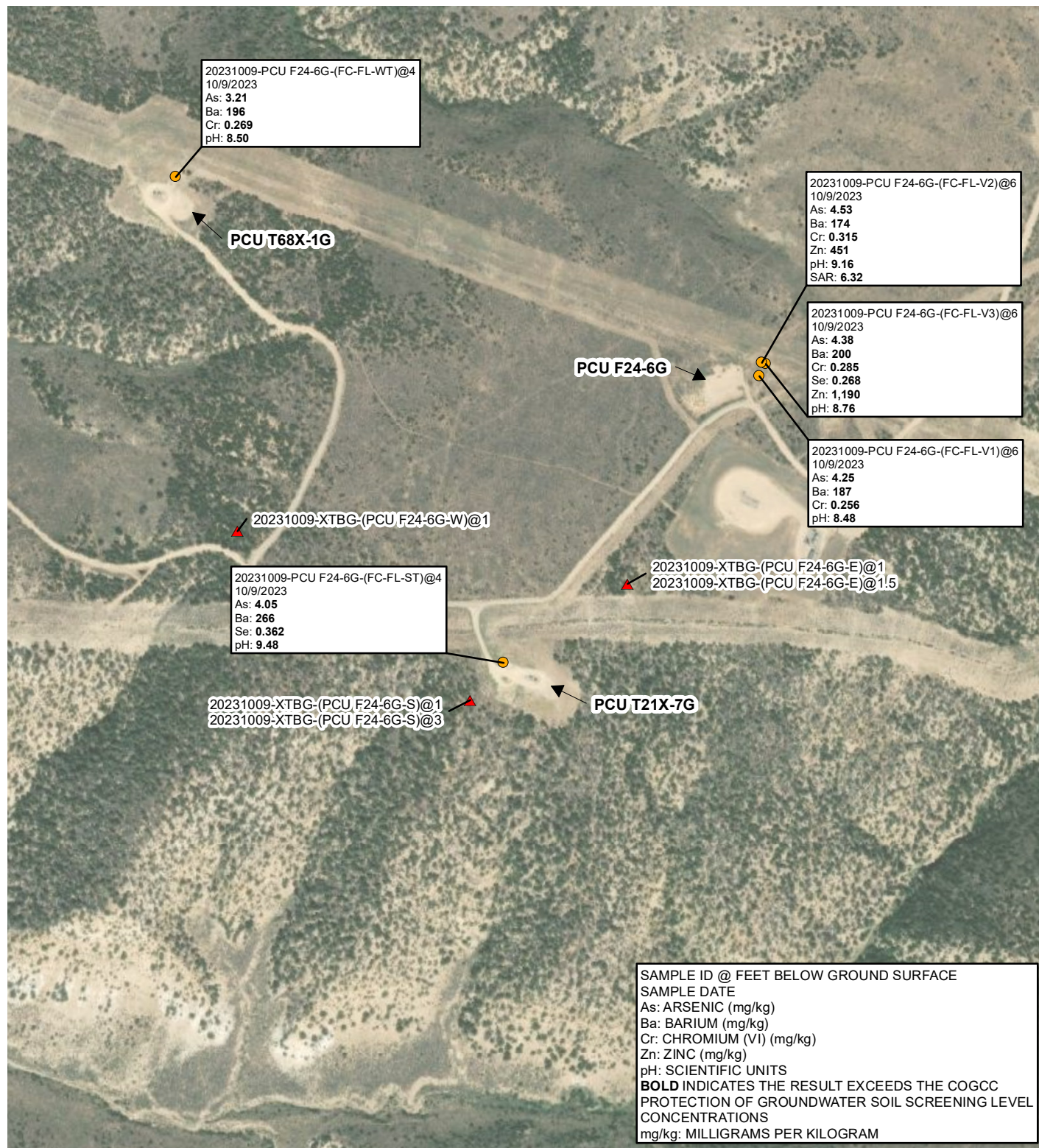


FIGURE 5
SOIL SAMPLE LOCATION MAP - ON PAD LOCATIONS
 USA PICEANCE CREEK F24-6G
 LOT 31 SEC 6-T2S-R96W
 RIO BLANCO COUNTY, COLORADO
CAERUS PICEANCE LLC





LEGEND

- SOIL SAMPLE
- ▲ BACKGROUND SOIL SAMPLE

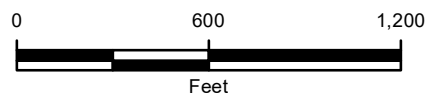


IMAGE COURTESY OF ESRI/MAXAR (2021)

FIGURE 6
OFF LOCATION FLOWLINE SOIL ANALYTICAL EXCEEDANCE MAP
USA PICEANCE CREEK F24-6G
LOT 31 SEC 6-T2S-R96W
RIO BLANCO COUNTY, COLORADO
CAERUS PICEANCE LLC



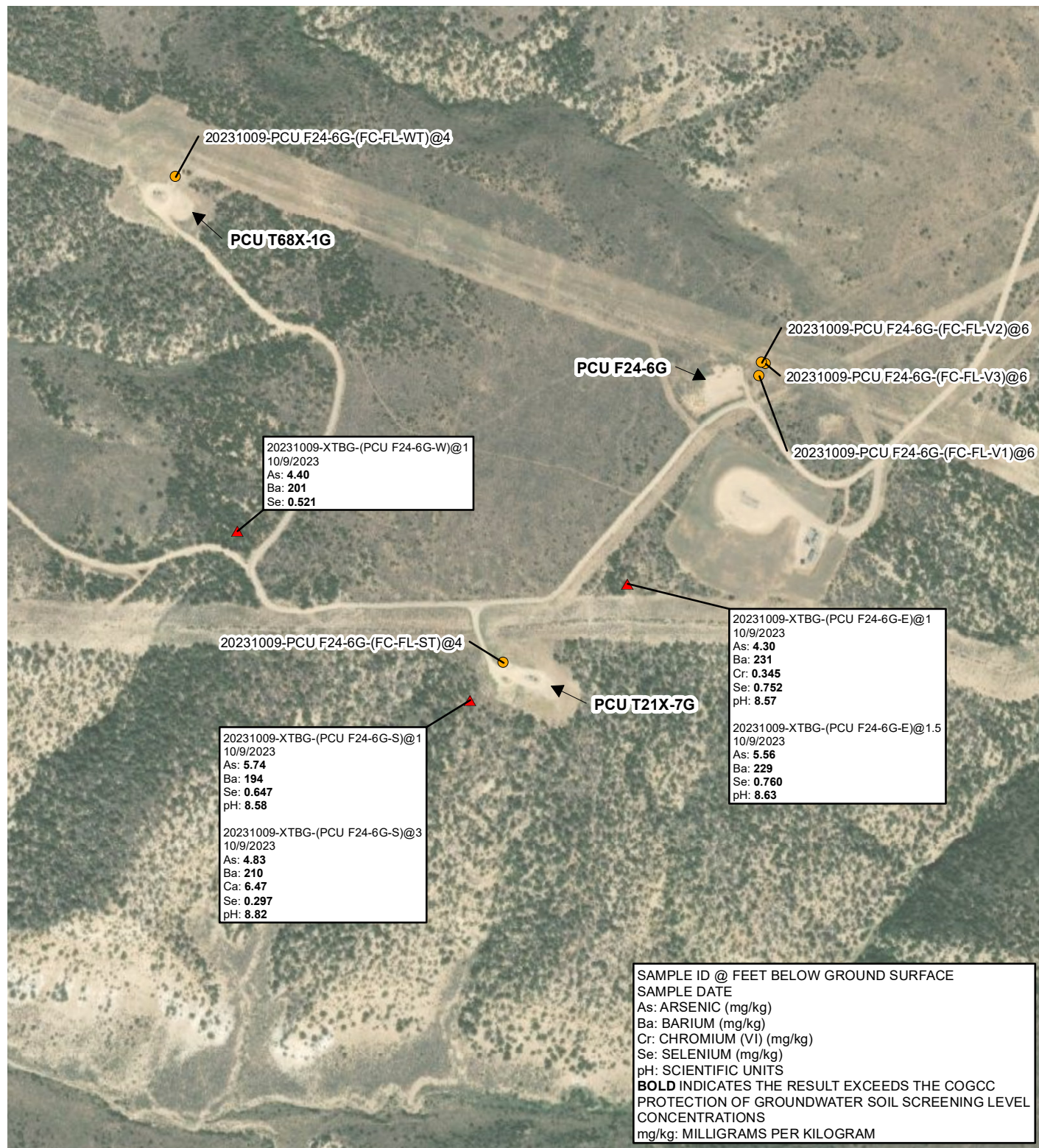


IMAGE COURTESY OF ESRI/MAXAR (2021)

LEGEND

- SOIL SAMPLE
- ▲ BACKGROUND SOIL SAMPLE

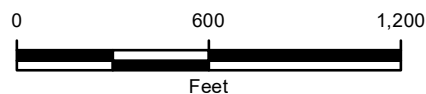


FIGURE 7
 SITE-SPECIFIC BACKGROUND
 SOIL ANALYTICAL EXCEEDANCE MAP
 USA PICEANCE CREEK F24-6G
 LOT 31 SEC 6-T2S-R96W
 RIO BLANCO COUNTY, COLORADO
CAERUS PICEANCE LLC



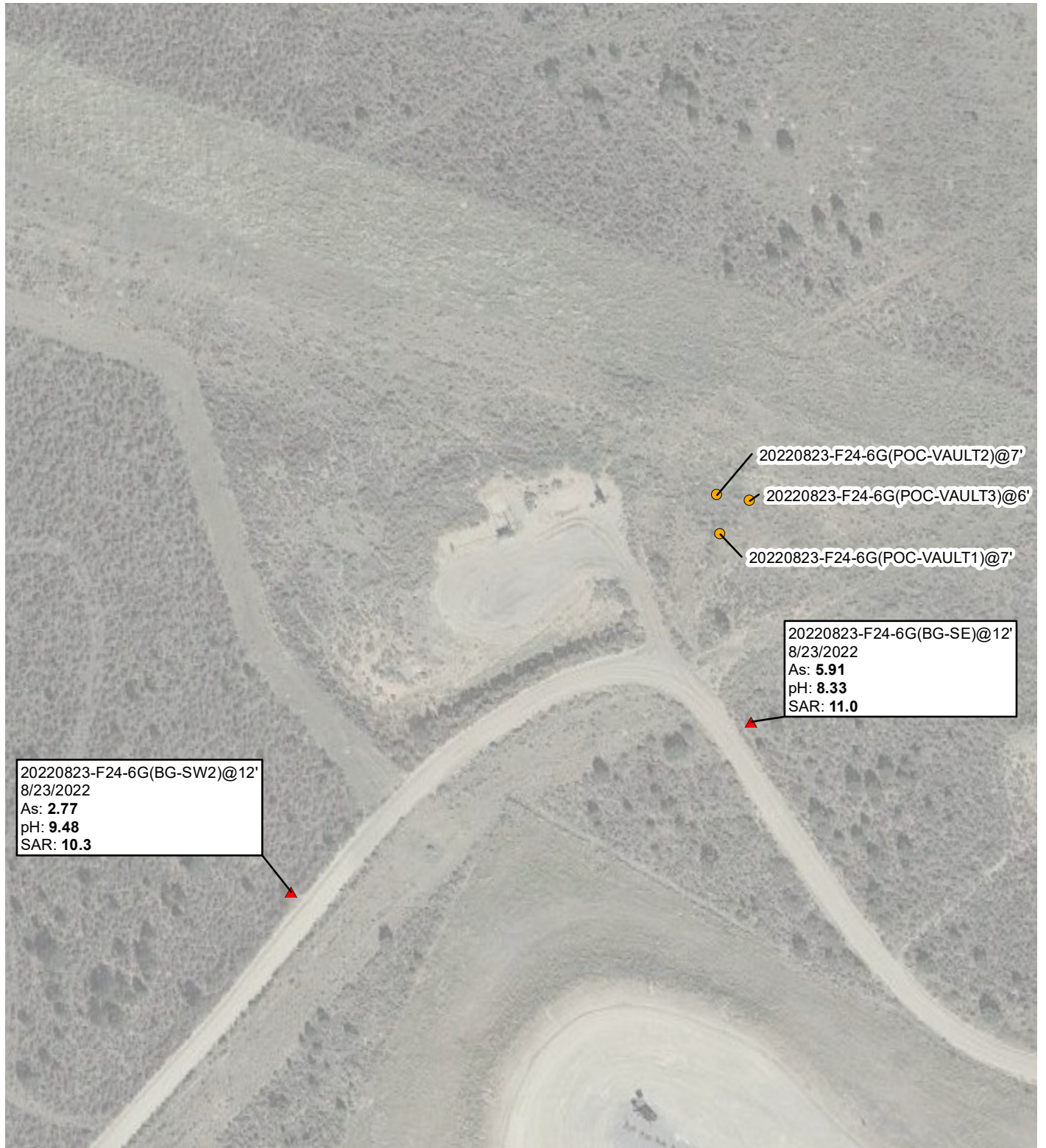


IMAGE COURTESY OF GOOGLE EARTH 2015

LEGEND

- SOIL SAMPLE
- ▲ BACKGROUND SOIL SAMPLE

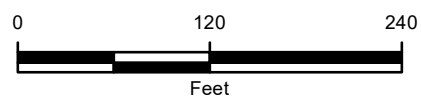


FIGURE 8
SITE MAP - 2022
USA PICEANCE CREEK F24-6G
LOT 31 SEC 6-T2S-R96W
RIO BLANCO COUNTY, COLORADO
CAERUS OIL AND GAS LLC



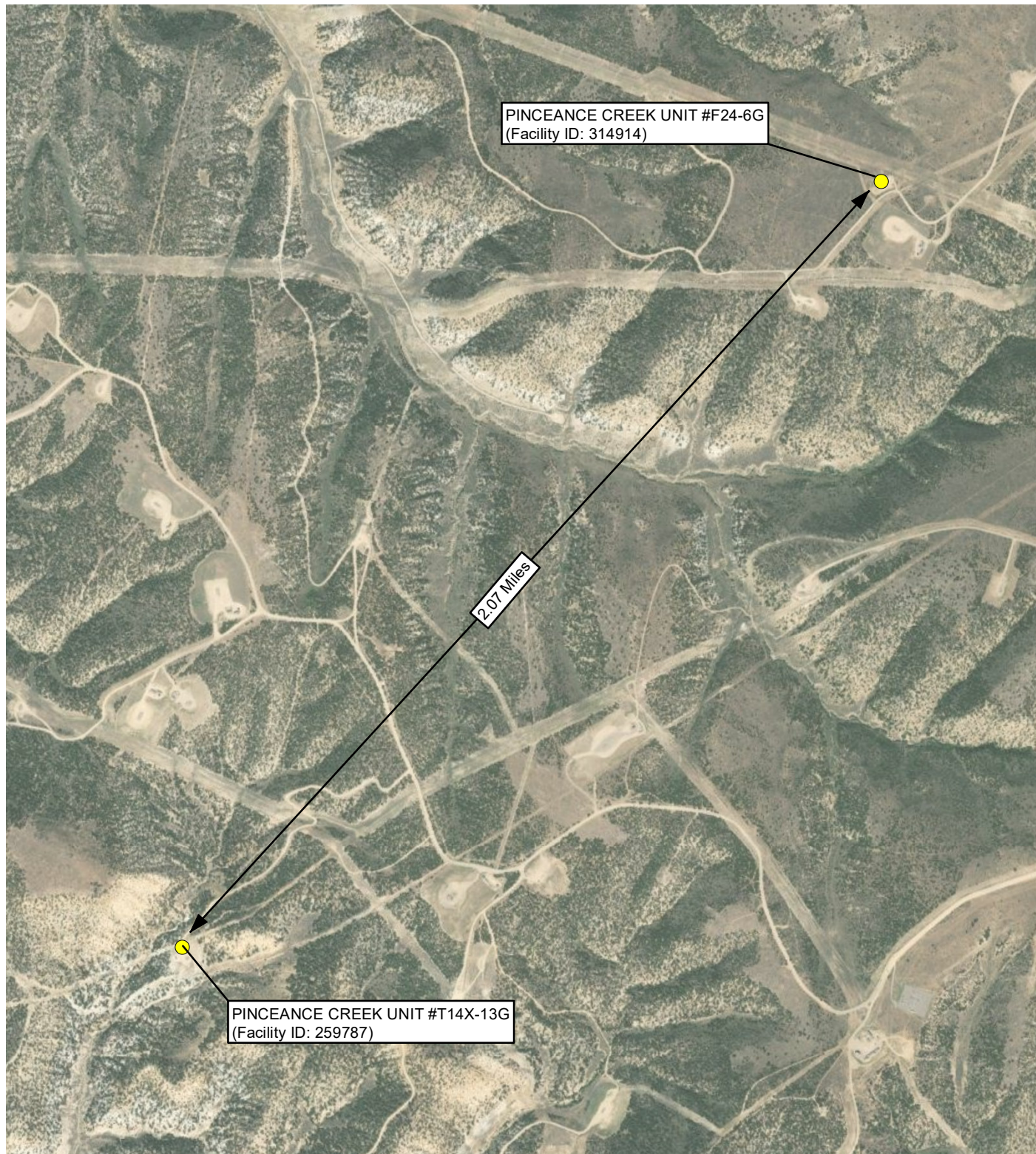
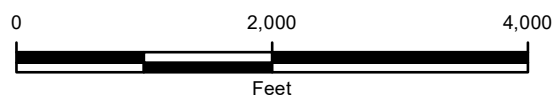


IMAGE COURTESY OF ESRI/USGS

LEGEND

● WELL



COLORADO

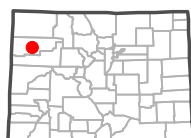


FIGURE 9
GEOGRAPHIC PROXIMITY LOCATION MAP
 USA PICEANCE CREEK F24-6G
 LOT 31 SEC 6-T2S-R96W
 RIO BLANCO COUNTY, COLORADO
CAERUS PICEANCE LLC

wsp

TABLES

TABLE 1

SOIL ANALYTICAL RESULTS

USA PICEANCE CREEK F24-6G

RIO BLANCO COUNTY, COLORADO

CAERUS PICEANCE LLC

PARAMETER	COGCC RESIDENTIAL SOIL SCREENING LEVEL CONCENTRATIONS	COGCC PROTECTION OF GROUNDWATER SOIL SCREENING LEVEL CONCENTRATIONS	UNITS	CONFIRMATION SOIL SAMPLES			
				20231009-PCU F24-6G-(FC-FL-ST)@4	20231009-PCU F24-6G-(FC-FL-WT)@4	20231009-PCU F24-6G-(FC-FL-V1)@6	20231009-PCU F24-6G-(FC-FL-V2)@6
Sample Date				10/9/2023	10/9/2023	10/9/2023	10/9/2023
Sample Depth Range (feet)				4	4	6	6
Sample Type				Confirmation	Confirmation	Confirmation	Confirmation
Arsenic	0.68	0.29 (M)	mg/kg	4.05	3.21	4.25	4.53
Barium	15,000	82 (M)	mg/kg	266	196	187	174
Boron	2	2	mg/l	0.207	0.146	0.185	0.203
Cadmium	71	0.38 (M)	mg/kg	0.284	0.161	0.140	0.146
Chromium (VI)	0.3	0.00067 (R)	mg/kg	<0.255	0.269	0.256	0.315
Copper	3,100	46 (M)	mg/kg	11.1	9.09	9.38	8.60
Lead	400	14 (M)	mg/kg	11.3	7.79	7.91	9.16
Nickel	1,500	26 (R)	mg/kg	16.0	12.3	12.6	14.4
Selenium	390	0.26 (M)	mg/kg	0.362	<0.180	<0.180	0.236
Silver	390	0.8 (R)	mg/kg	<0.0865	<0.0865	<0.0865	<0.0865
Zinc	23,000	370 (R)	mg/kg	32.5	32.7	82.9	451
EC	<4	<4	mmhos/cm	0.286	0.753	0.136	0.553
pH	6 - 8.3	6 - 8.3	SU	9.48	8.50	8.48	9.16
SAR	<6	<6	unitless	2.48	5.85	0.191	6.32
TPH-GRO			mg/kg	<0.0217	0.120	0.0614	<0.0217
TPH-DRO			mg/kg	2.71	2.28	2.28	3.40
TPH-ORO			mg/kg	10.1	36.1	9.26	13.7
TPH	500	500	mg/kg	12.8	52.4	11.6	17.1
Benzene	1.2	0.0026 (M)	mg/kg	0.000950	<0.000467	<0.000467	<0.000467
Toluene	490	0.69 (M)	mg/kg	<0.00130	<0.00130	<0.00130	<0.00130
Ethylbenzene	5.8	0.78 (M)	mg/kg	<0.000737	<0.000737	<0.000737	<0.000737
Total Xylenes	58	9.9 (M)	mg/kg	<0.000880	<0.000880	<0.000880	0.00141
1,2,4-trimethylbenzene	30	0.0081 (R)	mg/kg	<0.00158	<0.00158	<0.00158	<0.00158
1,3,5-trimethylbenzene	27	0.0087 (R)	mg/kg	<0.00200	<0.00200	<0.00200	<0.00200
Acenaphthene	360	0.55 (R)	mg/kg	<0.00209	<0.00209	<0.00209	<0.00209
Anthracene	1,800	5.8 (R)	mg/kg	<0.00230	<0.00230	<0.00230	<0.00230
Benzo(A)anthracene	1.1	0.011 (R)	mg/kg	<0.00173	<0.00173	<0.00173	<0.00173
Benzo(B)fluoranthene	1.1	0.3 (R)	mg/kg	<0.00153	<0.00153	<0.00153	<0.00153
Benzo(K)fluoranthene	11	2.9 (R)	mg/kg	<0.00215	<0.00215	<0.00215	<0.00215
Benzo(A)pyrene	0.11	0.24 (M)	mg/kg	<0.00179	<0.00179	<0.00179	<0.00179
Chrysene	110	9 (R)	mg/kg	<0.00232	<0.00232	<0.00232	<0.00232
Dibenzo(A,H)anthracene	0.11	0.096 (R)	mg/kg	<0.00172	<0.00172	<0.00172	<0.00172
Fluoranthene	240	8.9 (R)	mg/kg	<0.00227	<0.00227	<0.00227	<0.00227
Fluorene	240	0.54 (R)	mg/kg	<0.00205	<0.00205	<0.0205	<0.0205
Indeno(1,2,3,c-d)pyrene	1.1	0.98 (R)	mg/kg	<0.00181	<0.00181	<0.00181	<0.00181
1-methylnaphthalene	18	0.006 (R)	mg/kg	<0.00449	<0.00449	<0.00449	<0.00449
2-methylnaphthalene	24	0.019 (R)	mg/kg	<0.00427	<0.00427	<0.00427	<0.00427
Naphthalene	2	0.0038 (R)	mg/kg	<0.00408	<0.00408	<0.00408	<0.00408
Pyrene	180	1.3 (R)	mg/kg	<0.00200	<0.00200	<0.00200	<0.00200

NOTES:

less than - <

< - below laboratory method detection limit (MDL)

Indicates MDL value is greater than Protection of Groundwater Soil Screening Level Concentrations

BOLD - indicates result exceeds the COGCC concentration level

COGCC - Colorado Oil and Gas Conservation Commission

EC- electrical conductivity

mg/kg - milligrams per kilogram

mmhos/cm - millimhos per centimeter

SAR - sodium adsorption ratio

SU - standard unit

TPH-ORO - total petroleum hydrocarbons- oil range organics

TPH-GRO - total petroleum hydrocarbons-gasoline range organics

TPH-DRO - total petroleum hydrocarbons-diesel range organics

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

NA - analyte not analyzed

ND - analyte not detected

R - risk based

MCL - maximum contaminant level (M)

M - Based MCL

J- analyte is detected below reporting limits, concentration is an approximate value

TABLE 1

SOIL ANALYTICAL RESULTS

USA PICEANCE CREEK F24-6G

RIO BLANCO COUNTY, COLORADO

CAERUS PICEANCE LLC

PARAMETER	COGCC RESIDENTIAL SOIL SCREENING LEVEL CONCENTRATIONS	COGCC PROTECTION OF GROUNDWATER SOIL SCREENING LEVEL CONCENTRATIONS	BACKGROUND SOIL SAMPLES				
			20231009-XTBG-(PCU F24-6G-W)@1	20231009-XTBG-(PCU F24-6G-E)@1	20231009-XTBG-(PCU F24-6G-E)@1.5	20231009-XTBG-(PCU F24-6G-S)@1	20231009-XTBG-(PCU F24-6G-S)@3
Sample Date			10/9/2023	10/9/2023	10/9/2023	10/9/2023	10/9/2023
Sample Depth Range (feet)			1	1	1.5	1	3
Sample Type			Background	Background	Background	Background	Background
Arsenic	0.68	0.29 (M)	4.40	4.30	5.56	5.74	4.83
Barium	15,000	82 (M)	201	231	229	194	210
Boron	2	2	0.190	0.102	0.203	0.274	0.330
Cadmium	71	0.38 (M)	0.147	0.189	0.155	0.120	6.47
Chromium (VI)	0.3	0.00067 (R)	<0.255	0.345	<0.255	<0.255	<0.255
Copper	3,100	46 (M)	9.11	12.9	11.6	9.93	11.7
Lead	400	14 (M)	12.5	12.4	13.9	10.5	9.73
Nickel	1,500	26 (R)	16.2	16.4	15.3	16.3	12.5
Selenium	390	0.26 (M)	0.521	0.752	0.760	0.647	0.297
Silver	390	0.8 (R)	<0.0865	<0.0865	<0.0865	<0.0865	<0.0865
Zinc	23,000	370 (R)	0.740	55.2	52.5	43.1	46.9
EC	<4	<4	0.161	0.253	0.216	0.139	0.204
pH	6 - 8.3	6 - 8.3	8.15	8.57	8.63	8.58	8.82
SAR	<6	<6	0.0856	0.174	0.256	0.189	0.396
TPH-GRO			NA	NA	NA	NA	NA
TPH-DRO			NA	NA	NA	NA	NA
TPH-ORO			NA	NA	NA	NA	NA
TPH	500	500	NA	NA	NA	NA	NA
Benzene	1.2	0.0026 (M)	NA	NA	NA	NA	NA
Toluene	490	0.69 (M)	NA	NA	NA	NA	NA
Ethylbenzene	5.8	0.78 (M)	NA	NA	NA	NA	NA
Total Xylenes	58	9.9 (M)	NA	NA	NA	NA	NA
1,2,4-trimethylbenzene	30	0.0081 (R)	NA	NA	NA	NA	NA
1,3,5-trimethylbenzene	27	0.0087 (R)	NA	NA	NA	NA	NA
Acenaphthene	360	0.55 (R)	NA	NA	NA	NA	NA
Anthracene	1,800	5.8 (R)	NA	NA	NA	NA	NA
Benzo(A)anthracene	1.1	0.011 (R)	NA	NA	NA	NA	NA
Benzo(B)fluoranthene	1.1	0.3 (R)	NA	NA	NA	NA	NA
Benzo(K)fluoranthene	11	2.9 (R)	NA	NA	NA	NA	NA
Benzo(A)pyrene	0.11	0.24 (M)	NA	NA	NA	NA	NA
Chrysene	110	9 (R)	NA	NA	NA	NA	NA
Dibenzo(A,H)anthracene	0.11	0.096 (R)	NA	NA	NA	NA	NA
Fluoranthene	240	8.9 (R)	NA	NA	NA	NA	NA
Fluorene	240	0.54 (R)	NA	NA	NA	NA	NA
Indeno(1,2,3,c-d)pyrene	1.1	0.98 (R)	NA	NA	NA	NA	NA
1-methylnaphthalene	18	0.006 (R)	NA	NA	NA	NA	NA
2-methylnaphthalene	24	0.019 (R)	NA	NA	NA	NA	NA
Naphthalene	2	0.0038 (R)	NA	NA	NA	NA	NA
Pyrene	180	1.3 (R)	NA	NA	NA	NA	NA

NOTES:

less than - <

< - below laboratory method detection limit (MDL)

Indicates MDL value is greater than Protection of Groundwater Soil Screening Level Concentrations

BOLD - indicates result exceeds the COGCC concentration level

COGCC - Colorado Oil and Gas Conservation Commission

EC- electrical conductivity

mg/kg - milligrams per kilogram

mmhos/cm - millimhos per centimeter

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SU - standard unit

TPH-ORO - total petroleum hydrocarbons- oil range organics

TPH-GRO - total petroleum hydrocarbons-gasoline range organics

TPH-DRO - total petroleum hydrocarbons-diesel range organics

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

NA - analyte not analyzed

ND - analyte not detected

R - risk based

MCL - maximum contaminant level (M)

M - Based MCL

J- analyte is detected below reporting limits, concentration is an approximate value

TABLE 2

SOIL ANALYTICAL RESULTS
USA PICEANCE CREEK F24-6G
RIO BLANCO COUNTY, COLORADO
CAERUS PICEANCE LLC

PARAMETER	COGCC RESIDENTIAL SOIL SCREENING LEVEL CONCENTRATIONS	COGCC PROTECTION OF GROUNDWATER SOIL SCREENING LEVEL CONCENTRATIONS	UNITS	CONFIRMATION SOIL SAMPLES			BACKGROUND SOIL SAMPLES	
				20220823-F24-6G (POC-VAULT1) @ 7'	20220823-F24-6G (POC-VAULT2) @ 7'	20220823-F24-6G (POC-VAULT3) @ 6'	20220823-F24-6G (BG-SE) @ 12'	20220823-F24-6G (BG-SW2) @ 12'
Sample Date				8/23/2022	8/23/2022	8/23/2022	8/23/2022	8/23/2022
Sample Depth Range (feet)				7	7	7	12	12
Sample Type				Confirmation	Confirmation	Confirmation	Background	Background
Arsenic	0.68	0.29 (M)	mg/kg	4.47	5.42	5.11	5.91	2.77
Barium	15,000	82 (M)	mg/kg	277	263	220	247	142
Boron	2	2	mg/l	0.393	0.276	0.291	0.257	0.202
Cadmium	71	0.38 (M)	mg/kg	ND	ND	ND	ND	ND
Chromium (VI)	0.3	0.00067 (R)	mg/kg	ND	ND	ND	ND	ND
Copper	3,100	46 (M)	mg/kg	11.3	12.6	12.0	9.29	7.75
Lead	400	14 (M)	mg/kg	8.56	9.83	9.86	8.65	5.72
Nickel	1,500	26 (R)	mg/kg	15.8	18.3	16.9	14.4	13.3
Selenium	390	0.26 (M)	mg/kg	ND	ND	ND	ND	ND
Silver	390	0.8 (R)	mg/kg	ND	ND	ND	ND	ND
Zinc	23,000	370 (R)	mg/kg	48.2	57.3	135	36.5	27.8
EC	<4	<4	mmhos/cm	0.318	0.193	0.150	1.660	0.947
pH	6 - 8.3	6 - 8.3	SU	8.61	8.38	8.15	8.33	9.00
SAR	<6	<6	unitless	2.19	0.332	0.0957	11.0	10.3
TPH-GRO			mg/kg	ND	ND	ND	ND	ND
TPH-DRO			mg/kg	ND	ND	4.64	ND	ND
TPH-ORO			mg/kg	10.5	14.2	19.5	ND	ND
TPH	500	500	mg/kg	10.5	14.2	24.14	ND	ND
Benzene	1.2	0.0026 (M)	mg/kg	ND	ND	ND	ND	ND
Toluene	490	0.69 (M)	mg/kg	ND	ND	ND	ND	ND
Ethylbenzene	5.8	0.78 (M)	mg/kg	ND	ND	ND	ND	ND
Total Xylenes	58	9.9 (M)	mg/kg	ND	ND	ND	ND	ND
1,2,4-trimethylbenzene	30	0.0081 (R)	mg/kg	ND	ND	ND	ND	ND
1,3,5-trimethylbenzene	27	0.0087 (R)	mg/kg	ND	ND	ND	ND	ND
Acenaphthene	360	0.55 (R)	mg/kg	ND	ND	ND	ND	ND
Anthracene	1,800	5.8 (R)	mg/kg	ND	ND	ND	ND	ND
Benzo(A)anthracene	1.1	0.011 (R)	mg/kg	ND	ND	ND	ND	ND
Benzo(B)fluoranthene	1.1	0.3 (R)	mg/kg	ND	ND	ND	ND	ND
Benzo(K)fluoranthene	11	2.9 (R)	mg/kg	ND	ND	ND	ND	ND
Benzo(A)pyrene	0.11	0.24 (M)	mg/kg	ND	ND	ND	ND	ND
Chrysene	110	9 (R)	mg/kg	ND	ND	ND	ND	ND
Dibenzo(A,H)anthracene	0.11	0.096 (R)	mg/kg	ND	ND	ND	ND	ND
Fluoranthene	240	8.9 (R)	mg/kg	ND	ND	ND	ND	ND
Fluorene	240	0.54 (R)	mg/kg	ND	ND	ND	ND	ND
Indeno(1,2,3,c-d)pyrene	1.1	0.98 (R)	mg/kg	ND	ND	ND	ND	ND
1-methylnaphthalene	18	0.006 (R)	mg/kg	ND	ND	ND	ND	ND
2-methylnaphthalene	24	0.019 (R)	mg/kg	ND	ND	ND	ND	ND
Naphthalene	2	0.0038 (R)	mg/kg	ND	ND	ND	ND	ND
Pyrene	180	1.3 (R)	mg/kg	ND	ND	ND	ND	ND

NOTES:

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NA - analyte not analyzed

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R - risk based

MCL - maximum contaminant level (M)

M - Based MCL

J- analyte is detected below reporting limits, concentration is an approximate value

ENCLOSURE A – SOIL SCREENING PHOTOLOG

PHOTOGRAPHIC LOG		
Caerus Piceance LLC	USA Piceance Creek F24-6G	31406292.012

Photo No.	Date	
1	October 9, 2023	
Southern terminus sample collected below the 90. 20231009-PCU F24-6G-(FC-FL-ST)@4		

Photo No.	Date	
2	October 9, 2023	
Southern terminus excavation walls collected and screened.		

PHOTOGRAPHIC LOG		
Caerus Piceance LLC	USA Piceance Creek F24-6G	31406292.012


Photo No.	Date	
3	October 9, 2023	
Background sample location 20231009-XTBG-(PCU F24-6G-S) @1 and @3		

Photo No.	Date	
4	October 9, 2023	
Background sample location 20231009-XTBG-(PCU F24-6G-W)@1		


PHOTOGRAPHIC LOG		
Caerus Piceance LLC	USA Piceance Creek F24-6G	31406292.012

Photo No.	Date	
5	October 9, 2023	
Westernmost sample location 20231009-PCU F24-6G-(FC-FL-WT)@4		

Photo No.	Date	
6	October 9, 2023	
Background sample location 20231009-XTBG-(PCU F24-6G-E)@1 and @1.5		

PHOTOGRAPHIC LOG		
Caerus Piceance LLC	USA Piceance Creek F24-6G	31406292.012

Photo No.	Date	
7	October 9, 2023	
Vault 2 and 3 excavation footprint		

Photo No.	Date	
8	October 9, 2023	
Vault 1 excavation footprint		

PHOTOGRAPHIC LOG		
Caerus Piceance LLC	USA Piceance Creek F24-6G	31406292.012



Photo No.	Date	
9	October 9, 2023	
Vault 2 sample location 20231009-PCU F24-6G-(FC-FL-V2)@6		

Photo No.	Date	
10	October 9, 2023	
Vault 3 sample location 20231009-PCU F24-6G-(FC-FL-V3)@6		

PHOTOGRAPHIC LOG		
Caerus Piceance LLC	USA Piceance Creek F24-6G	31406292.012



Photo No.	Date	
11	October 9, 2023	
Vault 1 sample location 20231009-PCU F24-6G-(FC-FL-V1)@6		

Photo No.	Date	
12	October 9, 2023	
Vault 2 and 3 sample location sidewall samples collected and field screened.		



PHOTOGRAPHIC LOG		
Caerus Piceance LLC	USA Piceance Creek F24-6G	31406292.012

Photo No.	Date	
13	October 9, 2023	
Vault 1 sample location sidewall samples collected and field screened.		

ENCLOSURE B – LABORATORY ANALYTICAL REPORTS

Caerus Oil and Gas

Sample Delivery Group: L1665057
Samples Received: 10/11/2023
Project Number: USA PC F24-6G
Description: USA PC F24-6G Facility Decommissioning
Site: USA PC F24-6G
Report To: Jake J. / Brett M. / Blair R. / Andy V.
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:



Shane Gambill
Project Manager

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

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

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SAMPLE SUMMARY

20231009-PCU F24-6G-(FC-FL-ST)@4 L1665057-01 Solid

Collected by
Collected date/time
Received date/time

10/09/23 10:25 10/11/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2151266	1	10/18/23 16:06	10/18/23 16:06	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2150781	1	10/13/23 09:56	10/18/23 09:37	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2151280	1	10/14/23 12:15	10/14/23 14:03	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2150878	1	10/13/23 15:40	10/13/23 18:00	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2151267	1	10/15/23 10:48	10/17/23 19:11	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2150428	5	10/13/23 00:44	10/17/23 13:57	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2150381	1	10/12/23 09:33	10/12/23 23:04	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2150023	1	10/12/23 09:33	10/12/23 13:41	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2152137	1	10/17/23 05:14	10/17/23 13:10	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2152434	1	10/17/23 07:13	10/18/23 00:45	DSH	Mt. Juliet, TN

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

20231009-PCU F24-6G-(FC-FL-WT)@4 L1665057-02 Solid

Collected by
Collected date/time
Received date/time

10/09/23 12:20 10/11/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2151266	1	10/18/23 16:09	10/18/23 16:09	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2150781	1	10/13/23 09:56	10/18/23 09:42	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2151293	1	10/14/23 10:40	10/14/23 15:15	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2150707	1	10/13/23 10:50	10/13/23 16:52	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2151267	1	10/15/23 10:48	10/17/23 19:14	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2150428	5	10/13/23 00:44	10/17/23 14:00	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2150381	1	10/12/23 09:33	10/12/23 23:24	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2150023	1	10/12/23 09:33	10/12/23 14:00	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2152137	1	10/17/23 05:14	10/17/23 13:23	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2152434	1	10/17/23 07:13	10/18/23 01:05	DSH	Mt. Juliet, TN

20231009-PCU F24-6G-(FC-FL-V1)@6 L1665057-03 Solid

Collected by
Collected date/time
Received date/time

10/09/23 14:15 10/11/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2151266	1	10/18/23 16:12	10/18/23 16:12	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2150781	1	10/13/23 09:56	10/18/23 09:48	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2151293	1	10/14/23 10:40	10/14/23 15:15	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2150707	1	10/13/23 10:50	10/13/23 16:52	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2151267	1	10/15/23 10:48	10/17/23 19:17	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2150428	5	10/13/23 00:44	10/17/23 14:03	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2150381	1	10/12/23 09:33	10/12/23 23:44	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2150023	1	10/12/23 09:33	10/12/23 14:19	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2152137	1	10/17/23 05:14	10/17/23 11:29	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2152434	1	10/17/23 07:13	10/18/23 01:24	DSH	Mt. Juliet, TN

20231009-PCU F24-6G-(FC-FL-V2)@6 L1665057-04 Solid

Collected by
Collected date/time
Received date/time

10/09/23 14:05 10/11/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2151266	1	10/18/23 16:15	10/18/23 16:15	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2150781	1	10/13/23 09:56	10/18/23 09:53	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2151293	1	10/14/23 10:40	10/14/23 15:15	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2150707	1	10/13/23 10:50	10/13/23 16:52	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2151267	1	10/15/23 10:48	10/17/23 19:20	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2150428	5	10/13/23 00:44	10/17/23 14:07	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2150381	1	10/12/23 09:33	10/13/23 00:03	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2150023	1	10/12/23 09:33	10/12/23 14:38	DWR	Mt. Juliet, TN

SAMPLE SUMMARY

20231009-PCU F24-6G-(FC-FL-V2)@6 L1665057-04 Solid

Collected by

Collected date/time

Received date/time

10/09/23 14:05

10/11/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2152137	1	10/17/23 05:14	10/17/23 11:41	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2152434	1	10/17/23 07:13	10/18/23 01:44	DSH	Mt. Juliet, TN

¹Cp

²Tc

³Ss

20231009-PCU F24-6G-(FC-FL-V3)@6 L1665057-05 Solid

Collected by

Collected date/time

Received date/time

10/09/23 14:10

10/11/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2154689	1	10/21/23 14:40	10/21/23 14:40	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2150781	1	10/13/23 09:56	10/18/23 10:03	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2151293	1	10/14/23 10:40	10/14/23 15:15	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2150707	1	10/13/23 10:50	10/13/23 16:52	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2151267	1	10/15/23 10:48	10/17/23 19:23	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2150428	5	10/13/23 00:44	10/17/23 14:10	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2150388	1	10/12/23 09:33	10/12/23 23:07	NCD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2150023	1	10/12/23 09:33	10/12/23 14:57	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2152137	1	10/17/23 05:14	10/17/23 12:32	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2152434	1	10/17/23 07:13	10/18/23 02:03	DSH	Mt. Juliet, TN

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

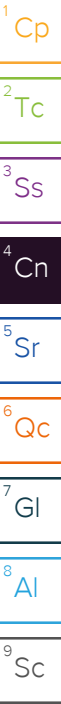
⁹Sc

CASE NARRATIVE

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



Shane Gambill
Project Manager



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.48		1	10/18/2023 16:06	WG2151266

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	10/18/2023 09:37	WG2150781

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	9.48	T8	1	10/14/2023 14:03	WG2151280

Sample Narrative:

L1665057-01 WG2151280: 9.48 at 20.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	286		10.0	1	10/13/2023 18:00	WG2150878

Sample Narrative:

L1665057-01 WG2150878: at 25C

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.207		0.0167	0.200	1	10/17/2023 19:11	WG2151267

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.05		0.100	1.00	5	10/17/2023 13:57	WG2150428
Barium	266		0.152	2.50	5	10/17/2023 13:57	WG2150428
Cadmium	0.284	J	0.0855	1.00	5	10/17/2023 13:57	WG2150428
Copper	11.1		0.132	5.00	5	10/17/2023 13:57	WG2150428
Lead	11.3		0.0990	2.00	5	10/17/2023 13:57	WG2150428
Nickel	16.0		0.197	2.50	5	10/17/2023 13:57	WG2150428
Selenium	0.362	J	0.180	2.50	5	10/17/2023 13:57	WG2150428
Silver	U		0.0865	0.500	5	10/17/2023 13:57	WG2150428
Zinc	32.5		0.740	25.0	5	10/17/2023 13:57	WG2150428

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	10/12/2023 23:04	WG2150381
(S) a,a,a-Trifluorotoluene(FID)	90.5			77.0-120		10/12/2023 23:04	WG2150381

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.000950	J	0.000467	0.00100	1	10/12/2023 13:41	WG2150023
Toluene	U		0.00130	0.00500	1	10/12/2023 13:41	WG2150023
Ethylbenzene	U		0.000737	0.00250	1	10/12/2023 13:41	WG2150023
Xylenes, Total	U		0.000880	0.00650	1	10/12/2023 13:41	WG2150023
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/12/2023 13:41	WG2150023
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/12/2023 13:41	WG2150023
(S) Toluene-d8	98.4			75.0-131		10/12/2023 13:41	WG2150023
(S) 4-Bromofluorobenzene	99.2			67.0-138		10/12/2023 13:41	WG2150023
(S) 1,2-Dichloroethane-d4	91.6			70.0-130		10/12/2023 13:41	WG2150023

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	2.71	J	1.61	4.00	1	10/17/2023 13:10	WG2152137
C28-C36 Motor Oil Range	10.1		0.274	4.00	1	10/17/2023 13:10	WG2152137
(S) o-Terphenyl	55.6			18.0-148		10/17/2023 13:10	WG2152137

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	10/18/2023 00:45	WG2152434
Anthracene	U		0.00230	0.00600	1	10/18/2023 00:45	WG2152434
Benzo(a)anthracene	U		0.00173	0.00600	1	10/18/2023 00:45	WG2152434
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/18/2023 00:45	WG2152434
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/18/2023 00:45	WG2152434
Benzo(a)pyrene	U		0.00179	0.00600	1	10/18/2023 00:45	WG2152434
Chrysene	U		0.00232	0.00600	1	10/18/2023 00:45	WG2152434
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/18/2023 00:45	WG2152434
Fluoranthene	U		0.00227	0.00600	1	10/18/2023 00:45	WG2152434
Fluorene	U		0.00205	0.00600	1	10/18/2023 00:45	WG2152434
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/18/2023 00:45	WG2152434
1-Methylnaphthalene	U		0.00449	0.0200	1	10/18/2023 00:45	WG2152434
2-Methylnaphthalene	U		0.00427	0.0200	1	10/18/2023 00:45	WG2152434
Naphthalene	U		0.00408	0.0200	1	10/18/2023 00:45	WG2152434
Pyrene	U		0.00200	0.00600	1	10/18/2023 00:45	WG2152434
(S) p-Terphenyl-d14	43.4			23.0-120		10/18/2023 00:45	WG2152434
(S) Nitrobenzene-d5	43.3			14.0-149		10/18/2023 00:45	WG2152434
(S) 2-Fluorobiphenyl	38.8			34.0-125		10/18/2023 00:45	WG2152434

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	5.85		1	10/18/2023 16:09	WG2151266

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.269	J	0.255	1.00	1	10/18/2023 09:42	WG2150781

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.50	T8	1	10/14/2023 15:15	WG2151293

Sample Narrative:
L1665057-02 WG2151293: 8.5 at 20.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	753		10.0	1	10/13/2023 16:52	WG2150707

Sample Narrative:
L1665057-02 WG2150707: at 25C

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.146	J	0.0167	0.200	1	10/17/2023 19:14	WG2151267

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.21		0.100	1.00	5	10/17/2023 14:00	WG2150428
Barium	196		0.152	2.50	5	10/17/2023 14:00	WG2150428
Cadmium	0.161	J	0.0855	1.00	5	10/17/2023 14:00	WG2150428
Copper	9.09		0.132	5.00	5	10/17/2023 14:00	WG2150428
Lead	7.79		0.0990	2.00	5	10/17/2023 14:00	WG2150428
Nickel	12.3		0.197	2.50	5	10/17/2023 14:00	WG2150428
Selenium	U		0.180	2.50	5	10/17/2023 14:00	WG2150428
Silver	U		0.0865	0.500	5	10/17/2023 14:00	WG2150428
Zinc	32.7		0.740	25.0	5	10/17/2023 14:00	WG2150428

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.120		0.0217	0.100	1	10/12/2023 23:24	WG2150381
(S) a,a,a-Trifluorotoluene(FID)	90.9			77.0-120		10/12/2023 23:24	WG2150381

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	10/12/2023 14:00	WG2150023
Toluene	U		0.00130	0.00500	1	10/12/2023 14:00	WG2150023
Ethylbenzene	U		0.000737	0.00250	1	10/12/2023 14:00	WG2150023
Xylenes, Total	U		0.000880	0.00650	1	10/12/2023 14:00	WG2150023
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/12/2023 14:00	WG2150023
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/12/2023 14:00	WG2150023
(S) Toluene-d8	97.7			75.0-131		10/12/2023 14:00	WG2150023
(S) 4-Bromofluorobenzene	101			67.0-138		10/12/2023 14:00	WG2150023
(S) 1,2-Dichloroethane-d4	93.5			70.0-130		10/12/2023 14:00	WG2150023

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	16.2		1.61	4.00	1	10/17/2023 13:23	WG2152137
C28-C36 Motor Oil Range	36.1		0.274	4.00	1	10/17/2023 13:23	WG2152137
(S) o-Terphenyl	59.3			18.0-148		10/17/2023 13:23	WG2152137

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	10/18/2023 01:05	WG2152434
Anthracene	U		0.00230	0.00600	1	10/18/2023 01:05	WG2152434
Benzo(a)anthracene	U		0.00173	0.00600	1	10/18/2023 01:05	WG2152434
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/18/2023 01:05	WG2152434
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/18/2023 01:05	WG2152434
Benzo(a)pyrene	U		0.00179	0.00600	1	10/18/2023 01:05	WG2152434
Chrysene	U		0.00232	0.00600	1	10/18/2023 01:05	WG2152434
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/18/2023 01:05	WG2152434
Fluoranthene	U		0.00227	0.00600	1	10/18/2023 01:05	WG2152434
Fluorene	U		0.00205	0.00600	1	10/18/2023 01:05	WG2152434
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/18/2023 01:05	WG2152434
1-Methylnaphthalene	U		0.00449	0.0200	1	10/18/2023 01:05	WG2152434
2-Methylnaphthalene	U		0.00427	0.0200	1	10/18/2023 01:05	WG2152434
Naphthalene	U		0.00408	0.0200	1	10/18/2023 01:05	WG2152434
Pyrene	U		0.00200	0.00600	1	10/18/2023 01:05	WG2152434
(S) p-Terphenyl-d14	63.4			23.0-120		10/18/2023 01:05	WG2152434
(S) Nitrobenzene-d5	67.9			14.0-149		10/18/2023 01:05	WG2152434
(S) 2-Fluorobiphenyl	58.6			34.0-125		10/18/2023 01:05	WG2152434

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.191		1	10/18/2023 16:12	WG2151266

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.256	J	0.255	1.00	1	10/18/2023 09:48	WG2150781

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.48	T8	1	10/14/2023 15:15	WG2151293

Sample Narrative:
L1665057-03 WG2151293: 8.48 at 20.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	136		10.0	1	10/13/2023 16:52	WG2150707

Sample Narrative:
L1665057-03 WG2150707: at 25C

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.185	J	0.0167	0.200	1	10/17/2023 19:17	WG2151267

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.25		0.100	1.00	5	10/17/2023 14:03	WG2150428
Barium	187		0.152	2.50	5	10/17/2023 14:03	WG2150428
Cadmium	0.140	J	0.0855	1.00	5	10/17/2023 14:03	WG2150428
Copper	9.38		0.132	5.00	5	10/17/2023 14:03	WG2150428
Lead	7.91		0.0990	2.00	5	10/17/2023 14:03	WG2150428
Nickel	12.6		0.197	2.50	5	10/17/2023 14:03	WG2150428
Selenium	U		0.180	2.50	5	10/17/2023 14:03	WG2150428
Silver	U		0.0865	0.500	5	10/17/2023 14:03	WG2150428
Zinc	82.9		0.740	25.0	5	10/17/2023 14:03	WG2150428

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0614	J	0.0217	0.100	1	10/12/2023 23:44	WG2150381
(S) a,a,a-Trifluorotoluene(FID)	91.3			77.0-120		10/12/2023 23:44	WG2150381

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	10/12/2023 14:19	WG2150023
Toluene	U		0.00130	0.00500	1	10/12/2023 14:19	WG2150023
Ethylbenzene	U		0.000737	0.00250	1	10/12/2023 14:19	WG2150023
Xylenes, Total	U		0.000880	0.00650	1	10/12/2023 14:19	WG2150023
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/12/2023 14:19	WG2150023
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/12/2023 14:19	WG2150023
(S) Toluene-d8	99.7			75.0-131		10/12/2023 14:19	WG2150023
(S) 4-Bromofluorobenzene	96.9			67.0-138		10/12/2023 14:19	WG2150023
(S) 1,2-Dichloroethane-d4	91.9			70.0-130		10/12/2023 14:19	WG2150023

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	2.28	J	1.61	4.00	1	10/17/2023 11:29	WG2152137
C28-C36 Motor Oil Range	9.26		0.274	4.00	1	10/17/2023 11:29	WG2152137
(S) o-Terphenyl	66.3			18.0-148		10/17/2023 11:29	WG2152137

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	10/18/2023 01:24	WG2152434
Anthracene	U		0.00230	0.00600	1	10/18/2023 01:24	WG2152434
Benzo(a)anthracene	U		0.00173	0.00600	1	10/18/2023 01:24	WG2152434
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/18/2023 01:24	WG2152434
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/18/2023 01:24	WG2152434
Benzo(a)pyrene	U		0.00179	0.00600	1	10/18/2023 01:24	WG2152434
Chrysene	U		0.00232	0.00600	1	10/18/2023 01:24	WG2152434
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/18/2023 01:24	WG2152434
Fluoranthene	U		0.00227	0.00600	1	10/18/2023 01:24	WG2152434
Fluorene	U		0.00205	0.00600	1	10/18/2023 01:24	WG2152434
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/18/2023 01:24	WG2152434
1-Methylnaphthalene	U		0.00449	0.0200	1	10/18/2023 01:24	WG2152434
2-Methylnaphthalene	U		0.00427	0.0200	1	10/18/2023 01:24	WG2152434
Naphthalene	U		0.00408	0.0200	1	10/18/2023 01:24	WG2152434
Pyrene	U		0.00200	0.00600	1	10/18/2023 01:24	WG2152434
(S) p-Terphenyl-d14	57.1			23.0-120		10/18/2023 01:24	WG2152434
(S) Nitrobenzene-d5	58.7			14.0-149		10/18/2023 01:24	WG2152434
(S) 2-Fluorobiphenyl	53.6			34.0-125		10/18/2023 01:24	WG2152434

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	6.32		1	10/18/2023 16:15	WG2151266

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.315	J	0.255	1.00	1	10/18/2023 09:53	WG2150781

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	9.16	T8	1	10/14/2023 15:15	WG2151293

Sample Narrative:
L1665057-04 WG2151293: 9.16 at 20.2C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	553		10.0	1	10/13/2023 16:52	WG2150707

Sample Narrative:
L1665057-04 WG2150707: at 25C

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.203		0.0167	0.200	1	10/17/2023 19:20	WG2151267

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.53		0.100	1.00	5	10/17/2023 14:07	WG2150428
Barium	174		0.152	2.50	5	10/17/2023 14:07	WG2150428
Cadmium	0.146	J	0.0855	1.00	5	10/17/2023 14:07	WG2150428
Copper	8.60		0.132	5.00	5	10/17/2023 14:07	WG2150428
Lead	9.16		0.0990	2.00	5	10/17/2023 14:07	WG2150428
Nickel	14.4		0.197	2.50	5	10/17/2023 14:07	WG2150428
Selenium	0.236	J	0.180	2.50	5	10/17/2023 14:07	WG2150428
Silver	U		0.0865	0.500	5	10/17/2023 14:07	WG2150428
Zinc	451		0.740	25.0	5	10/17/2023 14:07	WG2150428

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	10/13/2023 00:03	WG2150381
(S) a,a,a-Trifluorotoluene(FID)	89.0			77.0-120		10/13/2023 00:03	WG2150381

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	10/12/2023 14:38	WG2150023
Toluene	U		0.00130	0.00500	1	10/12/2023 14:38	WG2150023
Ethylbenzene	U		0.000737	0.00250	1	10/12/2023 14:38	WG2150023
Xylenes, Total	0.00141	J	0.000880	0.00650	1	10/12/2023 14:38	WG2150023
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/12/2023 14:38	WG2150023
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/12/2023 14:38	WG2150023
(S) Toluene-d8	99.2			75.0-131		10/12/2023 14:38	WG2150023
(S) 4-Bromofluorobenzene	102			67.0-138		10/12/2023 14:38	WG2150023
(S) 1,2-Dichloroethane-d4	92.6			70.0-130		10/12/2023 14:38	WG2150023

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	3.40	J	1.61	4.00	1	10/17/2023 11:41	WG2152137
C28-C36 Motor Oil Range	13.7		0.274	4.00	1	10/17/2023 11:41	WG2152137
(S) o-Terphenyl	65.1			18.0-148		10/17/2023 11:41	WG2152137

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	10/18/2023 01:44	WG2152434
Anthracene	U		0.00230	0.00600	1	10/18/2023 01:44	WG2152434
Benzo(a)anthracene	U		0.00173	0.00600	1	10/18/2023 01:44	WG2152434
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/18/2023 01:44	WG2152434
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/18/2023 01:44	WG2152434
Benzo(a)pyrene	U		0.00179	0.00600	1	10/18/2023 01:44	WG2152434
Chrysene	U		0.00232	0.00600	1	10/18/2023 01:44	WG2152434
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/18/2023 01:44	WG2152434
Fluoranthene	U		0.00227	0.00600	1	10/18/2023 01:44	WG2152434
Fluorene	U		0.00205	0.00600	1	10/18/2023 01:44	WG2152434
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/18/2023 01:44	WG2152434
1-Methylnaphthalene	U		0.00449	0.0200	1	10/18/2023 01:44	WG2152434
2-Methylnaphthalene	U		0.00427	0.0200	1	10/18/2023 01:44	WG2152434
Naphthalene	U		0.00408	0.0200	1	10/18/2023 01:44	WG2152434
Pyrene	U		0.00200	0.00600	1	10/18/2023 01:44	WG2152434
(S) p-Terphenyl-d14	63.6			23.0-120		10/18/2023 01:44	WG2152434
(S) Nitrobenzene-d5	68.0			14.0-149		10/18/2023 01:44	WG2152434
(S) 2-Fluorobiphenyl	60.3			34.0-125		10/18/2023 01:44	WG2152434

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.94		1	10/21/2023 14:40	WG2154689

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.285	J	0.255	1.00	1	10/18/2023 10:03	WG2150781

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.76	T8	1	10/14/2023 15:15	WG2151293

Sample Narrative:
L1665057-05 WG2151293: 8.76 at 20.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	254		10.0	1	10/13/2023 16:52	WG2150707

Sample Narrative:
L1665057-05 WG2150707: at 25C

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.361		0.0167	0.200	1	10/17/2023 19:23	WG2151267

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.38		0.100	1.00	5	10/17/2023 14:10	WG2150428
Barium	200		0.152	2.50	5	10/17/2023 14:10	WG2150428
Cadmium	0.178	J	0.0855	1.00	5	10/17/2023 14:10	WG2150428
Copper	9.48		0.132	5.00	5	10/17/2023 14:10	WG2150428
Lead	9.26		0.0990	2.00	5	10/17/2023 14:10	WG2150428
Nickel	14.4		0.197	2.50	5	10/17/2023 14:10	WG2150428
Selenium	0.268	J	0.180	2.50	5	10/17/2023 14:10	WG2150428
Silver	U		0.0865	0.500	5	10/17/2023 14:10	WG2150428
Zinc	1190		0.740	25.0	5	10/17/2023 14:10	WG2150428

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0858	J	0.0217	0.100	1	10/12/2023 23:07	WG2150388
(S) a,a,a-Trifluorotoluene(FID)	90.2			77.0-120		10/12/2023 23:07	WG2150388

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	10/12/2023 14:57	WG2150023
Toluene	U		0.00130	0.00500	1	10/12/2023 14:57	WG2150023
Ethylbenzene	U		0.000737	0.00250	1	10/12/2023 14:57	WG2150023
Xylenes, Total	0.000941	<u>J</u>	0.000880	0.00650	1	10/12/2023 14:57	WG2150023
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/12/2023 14:57	WG2150023
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/12/2023 14:57	WG2150023
(S) Toluene-d8	100			75.0-131		10/12/2023 14:57	WG2150023
(S) 4-Bromofluorobenzene	96.3			67.0-138		10/12/2023 14:57	WG2150023
(S) 1,2-Dichloroethane-d4	93.8			70.0-130		10/12/2023 14:57	WG2150023

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	7.10		1.61	4.00	1	10/17/2023 12:32	WG2152137
C28-C36 Motor Oil Range	22.9		0.274	4.00	1	10/17/2023 12:32	WG2152137
(S) o-Terphenyl	71.1			18.0-148		10/17/2023 12:32	WG2152137

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	10/18/2023 02:03	WG2152434
Anthracene	U		0.00230	0.00600	1	10/18/2023 02:03	WG2152434
Benzo(a)anthracene	U		0.00173	0.00600	1	10/18/2023 02:03	WG2152434
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/18/2023 02:03	WG2152434
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/18/2023 02:03	WG2152434
Benzo(a)pyrene	U		0.00179	0.00600	1	10/18/2023 02:03	WG2152434
Chrysene	U		0.00232	0.00600	1	10/18/2023 02:03	WG2152434
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/18/2023 02:03	WG2152434
Fluoranthene	U		0.00227	0.00600	1	10/18/2023 02:03	WG2152434
Fluorene	U		0.00205	0.00600	1	10/18/2023 02:03	WG2152434
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/18/2023 02:03	WG2152434
1-Methylnaphthalene	U		0.00449	0.0200	1	10/18/2023 02:03	WG2152434
2-Methylnaphthalene	U		0.00427	0.0200	1	10/18/2023 02:03	WG2152434
Naphthalene	U		0.00408	0.0200	1	10/18/2023 02:03	WG2152434
Pyrene	U		0.00200	0.00600	1	10/18/2023 02:03	WG2152434
(S) p-Terphenyl-d14	54.8			23.0-120		10/18/2023 02:03	WG2152434
(S) Nitrobenzene-d5	59.1			14.0-149		10/18/2023 02:03	WG2152434
(S) 2-Fluorobiphenyl	53.5			34.0-125		10/18/2023 02:03	WG2152434

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3987766-1 10/18/23 08:12

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

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1665055-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1665055-05 10/18/23 09:16 • (DUP) R3987766-7 10/18/23 09:22

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

L1665057-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1665057-04 10/18/23 09:53 • (DUP) R3987766-8 10/18/23 09:58

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	0.315	0.287	1	9.02	⬇	20

Laboratory Control Sample (LCS)

(LCS) R3987766-2 10/18/23 08:19

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	9.67	96.7	80.0-120	

L1665055-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1665055-03 10/18/23 08:35 • (MS) R3987766-3 10/18/23 08:40 • (MSD) R3987766-4 10/18/23 08:45

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Hexavalent Chromium	20.0	U	18.3	18.2	91.4	90.8	1	75.0-125			0.562	20

L1665055-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1665055-03 10/18/23 08:35 • (MS) R3987766-9 10/18/23 08:50

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	643	U	14.9	2.32	1	75.0-125	⬇

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

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

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

Sample Narrative:

OS: 8.42 at 21.4C

DUP: 8.41 at 21.2C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

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

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

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

Sample Narrative:

OS: 8.57 at 20.3C

DUP: 8.54 at 20.4C

Laboratory Control Sample (LCS)

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

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

Sample Narrative:

LCS: 9.99 at 20.9C

L1665055-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1665055-07 10/14/23 15:15 • (DUP) R3986252-2 10/14/23 15:15

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	pH	su		%		%
pH	9.08	9.04	1	0.442		1

Sample Narrative:

OS: 9.08 at 20.4C

DUP: 9.04 at 20.2C

L1665255-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1665255-01 10/14/23 15:15 • (DUP) R3986252-3 10/14/23 15:15

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	pH	su		%		%
pH	8.38	8.33	1	0.598		1

Sample Narrative:

OS: 8.38 at 20.1C

DUP: 8.33 at 20.3C

Laboratory Control Sample (LCS)

(LCS) R3986252-1 10/14/23 15:15

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

Sample Narrative:

LCS: 9.99 at 20.8C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3986105-1 10/13/23 16:52

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

L1665227-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1665227-03 10/13/23 16:52 • (DUP) R3986105-3 10/13/23 16:52

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	570	572	1	0.350		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1665252-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1665252-01 10/13/23 16:52 • (DUP) R3986105-4 10/13/23 16:52

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	2200	2220	1	0.633		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3986105-2 10/13/23 16:52

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	732	701	95.8	85.0-115	

Sample Narrative:

LCS: at 25C

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3986137-1 10/13/23 18:00

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

Sample Narrative:

BLANK: at 25C

L1665057-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1665057-01 10/13/23 18:00 • (DUP) R3986137-3 10/13/23 18:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	286	285	1	0.456		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1665257-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1665257-01 10/13/23 18:00 • (DUP) R3986137-4 10/13/23 18:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	272	266	1	1.93		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3986137-2 10/13/23 18:00

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	732	726	99.2	85.0-115	

Sample Narrative:

LCS: at 25C



Method Blank (MB)

(MB) R3987523-1 10/17/23 19:03

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) R3987523-2 10/17/23 19:05 • (LCSD) R3987523-3 10/17/23 19:08

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	1.04	105	104	80.0-120			1.17	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3987221-1 10/17/23 13:04

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

Laboratory Control Sample (LCS)

(LCS) R3987221-2 10/17/23 13:07

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	99.5	99.5	80.0-120	
Barium	100	93.9	93.9	80.0-120	
Cadmium	100	97.4	97.4	80.0-120	
Copper	100	88.3	88.3	80.0-120	
Lead	100	92.6	92.6	80.0-120	
Nickel	100	98.8	98.8	80.0-120	
Selenium	100	99.7	99.7	80.0-120	
Silver	20.0	19.5	97.3	80.0-120	
Zinc	100	94.5	94.5	80.0-120	

L1665262-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1665262-01 10/17/23 13:10 • (MS) R3987221-5 10/17/23 13:20 • (MSD) R3987221-6 10/17/23 13:24

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	10.4	94.6	97.2	84.2	86.8	5	75.0-125			2.75	20
Barium	100	1620	1860	1320	237	0.000	5	75.0-125	V	J3 V	33.9	20
Cadmium	100	0.462	86.4	88.3	85.9	87.9	5	75.0-125			2.21	20
Copper	100	16.6	89.0	91.3	72.3	74.7	5	75.0-125	J6	J6	2.60	20
Lead	100	11.6	92.7	95.3	81.1	83.7	5	75.0-125			2.75	20
Nickel	100	13.8	95.3	94.3	81.4	80.5	5	75.0-125			1.02	20
Selenium	100	0.477	87.6	86.6	87.1	86.1	5	75.0-125			1.13	20
Silver	20.0	U	16.8	17.5	84.0	87.6	5	75.0-125			4.27	20
Zinc	100	45.0	125	128	80.0	82.7	5	75.0-125			2.11	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3985798-3 10/12/23 22:08

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

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

(LCS) R3985798-1 10/12/23 20:42 • (LCSD) R3985798-2 10/12/23 21:01

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 %
TPH (GC/FID) Low Fraction	5.50	6.02	6.05	109	110	72.0-127			0.497	20
(S) a,a,a-Trifluorotoluene(FID)				103	103	77.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

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

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	93.5			77.0-120

Laboratory Control Sample (LCS)

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

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

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

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

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

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

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

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.130	0.130	104	104	70.0-123			0.000	20
Toluene	0.125	0.117	0.117	93.6	93.6	75.0-121			0.000	20
Ethylbenzene	0.125	0.111	0.107	88.8	85.6	74.0-126			3.67	20
Xylenes, Total	0.375	0.314	0.320	83.7	85.3	72.0-127			1.89	20
1,2,4-Trimethylbenzene	0.125	0.119	0.125	95.2	100	70.0-126			4.92	20
1,3,5-Trimethylbenzene	0.125	0.122	0.130	97.6	104	73.0-127			6.35	20
(S) Toluene-d8				97.2	96.6	75.0-131				
(S) 4-Bromofluorobenzene				97.4	95.1	67.0-138				
(S) 1,2-Dichloroethane-d4				95.4	95.8	70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

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

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	0.362	J	0.274	4.00
(S) o-Terphenyl	59.6			18.0-148

Laboratory Control Sample (LCS)

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

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

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

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

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	49.2	30.8	59.8	49.3	58.9	37.8	1	50.0-150		J6	19.2	20
(S) o-Terphenyl					44.1	40.5		18.0-148				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

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

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	U		0.00209	0.00600
Anthracene	U		0.00230	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
Naphthalene	U		0.00408	0.0200
Pyrene	U		0.00200	0.00600
(S) p-Terphenyl-d14	78.8			23.0-120
(S) Nitrobenzene-d5	69.2			14.0-149
(S) 2-Fluorobiphenyl	70.9			34.0-125

1
Cp

2
Tc

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Ss

4
Cn

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Sr

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Qc

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Gl

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Al

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Sc

Laboratory Control Sample (LCS)

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

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

Laboratory Control Sample (LCS)

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

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

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

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

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

Sample Narrative:
OS: Surrogate failure due to matrix interference

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

ACCREDITATIONS & LOCATIONS

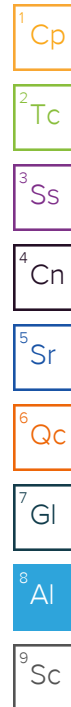
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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

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

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

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



[illegible]

Caerus Oil and Gas

Sample Delivery Group: L1665058
Samples Received: 10/11/2023
Project Number: USA PC F24-6G
Description: USA PC F24-6G Facility Decommissioning
Site: USA PC F24-6G
Report To: Jake J. / Brett M. / Blair R. / Andy V.
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:



Chris Ward
Project Manager

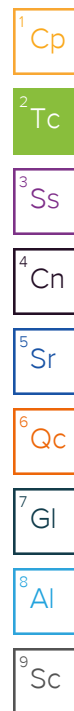
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Pace Analytical National

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

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SAMPLE SUMMARY

20231009-XTBG-(PCU F24-6G-W)@1 L1665058-01 Solid

Collected by Ben Hermann
Collected date/time 10/09/23 11:50
Received date/time 10/11/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2151266	1	10/18/23 16:17	10/18/23 16:17	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2148961	1	10/12/23 12:34	10/16/23 05:32	VSS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2151280	1	10/14/23 12:15	10/14/23 14:03	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2150712	1	10/13/23 10:50	10/13/23 14:48	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2151267	1	10/15/23 10:48	10/17/23 19:26	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2149661	25	10/12/23 00:31	10/12/23 15:23	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2149661	5	10/12/23 00:31	10/12/23 15:01	JPD	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

20231009-XTBG-(PCU F24-6G-E)@1 L1665058-02 Solid

Collected by Ben Hermann
Collected date/time 10/09/23 13:05
Received date/time 10/11/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2151266	1	10/18/23 16:20	10/18/23 16:20	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2148961	1	10/12/23 12:34	10/16/23 02:38	VSS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2151280	1	10/14/23 12:15	10/14/23 14:03	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2150712	1	10/13/23 10:50	10/13/23 14:48	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2151267	1	10/15/23 10:48	10/17/23 19:29	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2149661	25	10/12/23 00:31	10/12/23 15:26	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2149661	5	10/12/23 00:31	10/12/23 15:04	JPD	Mt. Juliet, TN

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

20231009-XTBG-(PCU F24-6G-E)@1.5 L1665058-03 Solid

Collected by Ben Hermann
Collected date/time 10/09/23 13:10
Received date/time 10/11/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2151266	1	10/18/23 16:23	10/18/23 16:23	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2148961	1	10/12/23 12:34	10/16/23 02:44	VSS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2151280	1	10/14/23 12:15	10/14/23 14:03	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2150712	1	10/13/23 10:50	10/13/23 14:48	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2151267	1	10/15/23 10:48	10/17/23 19:37	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2149661	25	10/12/23 00:31	10/12/23 15:30	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2149661	5	10/12/23 00:31	10/12/23 15:07	JPD	Mt. Juliet, TN

20231009-XTBG-(PCU F24-6G-S)@1 L1665058-04 Solid

Collected by Ben Hermann
Collected date/time 10/09/23 11:10
Received date/time 10/11/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2151266	1	10/18/23 16:26	10/18/23 16:26	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2148961	1	10/12/23 12:34	10/16/23 02:49	VSS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2151280	1	10/14/23 12:15	10/14/23 14:03	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2150712	1	10/13/23 10:50	10/13/23 14:48	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2151267	1	10/15/23 10:48	10/17/23 19:40	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2149661	25	10/12/23 00:31	10/12/23 15:33	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2149661	5	10/12/23 00:31	10/12/23 15:11	JPD	Mt. Juliet, TN

20231009-XTBG-(PCU F24-6G-S)@3 L1665058-05 Solid

Collected by Ben Hermann
Collected date/time 10/09/23 11:15
Received date/time 10/11/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2151266	1	10/18/23 16:29	10/18/23 16:29	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2148961	1	10/12/23 12:34	10/16/23 05:37	VSS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2151280	1	10/14/23 12:15	10/14/23 14:03	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2150712	1	10/13/23 10:50	10/13/23 14:48	NTG	Mt. Juliet, TN

SAMPLE SUMMARY

20231009-XTBG-(PCU F24-6G-S)@3 L1665058-05 Solid

Collected by
Ben Hermann

Collected date/time
10/09/23 11:15

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

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2151267	1	10/15/23 10:48	10/17/23 19:43	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2149660	5	10/12/23 00:26	10/12/23 13:28	JPD	Mt. Juliet, TN

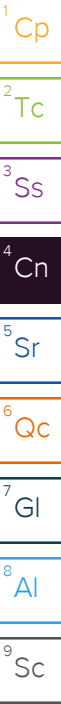
¹Cp ${}^2\text{Tc}$ 3S_1 ${}^4\text{Cn}$ ${}^5\text{Sr}$ ${}^6\text{Qc}$ ${}^7\text{Gf}$ ${}^8\text{Al}$ ${}^9\text{Sc}$

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	0.0856		1	10/18/2023 16:17	WG2151266

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	10/16/2023 05:32	WG2148961

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.15	T8	1	10/14/2023 14:03	WG2151280

Sample Narrative:
L1665058-01 WG2151280: 8.15 at 20.2C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	161		10.0	1	10/13/2023 14:48	WG2150712

Sample Narrative:
L1665058-01 WG2150712: at 25C

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.190	J	0.0167	0.200	1	10/17/2023 19:26	WG2151267

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.40		0.100	1.00	5	10/12/2023 15:01	WG2149661
Barium	201		0.760	12.5	25	10/12/2023 15:23	WG2149661
Cadmium	0.147	J	0.0855	1.00	5	10/12/2023 15:01	WG2149661
Copper	9.11		0.132	5.00	5	10/12/2023 15:01	WG2149661
Lead	12.5		0.0990	2.00	5	10/12/2023 15:01	WG2149661
Nickel	16.2		0.197	2.50	5	10/12/2023 15:01	WG2149661
Selenium	0.521	J	0.180	2.50	5	10/12/2023 15:01	WG2149661
Silver	U		0.0865	0.500	5	10/12/2023 15:01	WG2149661
Zinc	43.6		0.740	25.0	5	10/12/2023 15:01	WG2149661

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.174		1	10/18/2023 16:20	WG2151266

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.345	J	0.255	1.00	1	10/16/2023 02:38	WG2148961

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.57	T8	1	10/14/2023 14:03	WG2151280

Sample Narrative:
L1665058-02 WG2151280: 8.57 at 20.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	253		10.0	1	10/13/2023 14:48	WG2150712

Sample Narrative:
L1665058-02 WG2150712: at 25C

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.102	J	0.0167	0.200	1	10/17/2023 19:29	WG2151267

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.30		0.100	1.00	5	10/12/2023 15:04	WG2149661
Barium	231		0.760	12.5	25	10/12/2023 15:26	WG2149661
Cadmium	0.189	J	0.0855	1.00	5	10/12/2023 15:04	WG2149661
Copper	12.9		0.132	5.00	5	10/12/2023 15:04	WG2149661
Lead	12.4		0.0990	2.00	5	10/12/2023 15:04	WG2149661
Nickel	16.4		0.197	2.50	5	10/12/2023 15:04	WG2149661
Selenium	0.752	J	0.180	2.50	5	10/12/2023 15:04	WG2149661
Silver	U		0.0865	0.500	5	10/12/2023 15:04	WG2149661
Zinc	55.2		0.740	25.0	5	10/12/2023 15:04	WG2149661

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.256		1	10/18/2023 16:23	WG2151266

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	10/16/2023 02:44	WG2148961

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.63	T8	1	10/14/2023 14:03	WG2151280

Sample Narrative:
L1665058-03 WG2151280: 8.63 at 20.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	216		10.0	1	10/13/2023 14:48	WG2150712

Sample Narrative:
L1665058-03 WG2150712: at 25C

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.203		0.0167	0.200	1	10/17/2023 19:37	WG2151267

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.56		0.100	1.00	5	10/12/2023 15:07	WG2149661
Barium	229		0.760	12.5	25	10/12/2023 15:30	WG2149661
Cadmium	0.155	J	0.0855	1.00	5	10/12/2023 15:07	WG2149661
Copper	11.6		0.132	5.00	5	10/12/2023 15:07	WG2149661
Lead	13.9		0.0990	2.00	5	10/12/2023 15:07	WG2149661
Nickel	15.3		0.197	2.50	5	10/12/2023 15:07	WG2149661
Selenium	0.760	J	0.180	2.50	5	10/12/2023 15:07	WG2149661
Silver	U		0.0865	0.500	5	10/12/2023 15:07	WG2149661
Zinc	52.5		0.740	25.0	5	10/12/2023 15:07	WG2149661

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.189		1	10/18/2023 16:26	WG2151266

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	10/16/2023 02:49	WG2148961

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.58	T8	1	10/14/2023 14:03	WG2151280

Sample Narrative:
L1665058-04 WG2151280: 8.58 at 20.2C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	139		10.0	1	10/13/2023 14:48	WG2150712

Sample Narrative:
L1665058-04 WG2150712: at 25C

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.274		0.0167	0.200	1	10/17/2023 19:40	WG2151267

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.74		0.100	1.00	5	10/12/2023 15:11	WG2149661
Barium	194		0.760	12.5	25	10/12/2023 15:33	WG2149661
Cadmium	0.120	J	0.0855	1.00	5	10/12/2023 15:11	WG2149661
Copper	9.93		0.132	5.00	5	10/12/2023 15:11	WG2149661
Lead	10.5		0.0990	2.00	5	10/12/2023 15:11	WG2149661
Nickel	16.3		0.197	2.50	5	10/12/2023 15:11	WG2149661
Selenium	0.647	J	0.180	2.50	5	10/12/2023 15:11	WG2149661
Silver	U		0.0865	0.500	5	10/12/2023 15:11	WG2149661
Zinc	43.1		0.740	25.0	5	10/12/2023 15:11	WG2149661

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.396		1	10/18/2023 16:29	WG2151266

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	10/16/2023 05:37	WG2148961

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.82	T8	1	10/14/2023 14:03	WG2151280

Sample Narrative:
L1665058-05 WG2151280: 8.82 at 20.2C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	204		10.0	1	10/13/2023 14:48	WG2150712

Sample Narrative:
L1665058-05 WG2150712: at 25C

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.330		0.0167	0.200	1	10/17/2023 19:43	WG2151267

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.83		0.100	1.00	5	10/12/2023 13:28	WG2149660
Barium	210		0.152	2.50	5	10/12/2023 13:28	WG2149660
Cadmium	6.47		0.0855	1.00	5	10/12/2023 13:28	WG2149660
Copper	11.7		0.132	5.00	5	10/12/2023 13:28	WG2149660
Lead	9.73		0.0990	2.00	5	10/12/2023 13:28	WG2149660
Nickel	12.5		0.197	2.50	5	10/12/2023 13:28	WG2149660
Selenium	0.297	J	0.180	2.50	5	10/12/2023 13:28	WG2149660
Silver	U		0.0865	0.500	5	10/12/2023 13:28	WG2149660
Zinc	46.9		0.740	25.0	5	10/12/2023 13:28	WG2149660

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

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

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

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

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

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

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

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

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

Laboratory Control Sample (LCS)

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

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

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

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

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Hexavalent Chromium	20.0	2.06	4.63	4.41	12.9	11.7	1	75.0-125	J6	J6	5.07	20

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

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

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

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

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

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.42	8.41	1	0.119		1

Sample Narrative:

OS: 8.42 at 21.4C

DUP: 8.41 at 21.2C

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

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

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	pH	su		%		%
pH	8.57	8.54	1	0.351		1

Sample Narrative:

OS: 8.57 at 20.3C

DUP: 8.54 at 20.4C

Laboratory Control Sample (LCS)

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

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

Sample Narrative:

LCS: 9.99 at 20.9C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

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

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

Sample Narrative:

BLANK: at 25C

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

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

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

Sample Narrative:

OS: at 25C

DUP: at 25C

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

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

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

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

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

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

Sample Narrative:

LCS: at 25C



Method Blank (MB)

(MB) R3987523-1 10/17/23 19:03

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) R3987523-2 10/17/23 19:05 • (LCSD) R3987523-3 10/17/23 19:08

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	1.04	105	104	80.0-120			1.17	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3985448-1 10/12/23 13:02

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

Laboratory Control Sample (LCS)

(LCS) R3985448-2 10/12/23 13:05

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	92.7	92.7	80.0-120	
Barium	100	91.1	91.1	80.0-120	
Cadmium	100	92.0	92.0	80.0-120	
Copper	100	84.0	84.0	80.0-120	
Lead	100	89.9	89.9	80.0-120	
Nickel	100	90.5	90.5	80.0-120	
Selenium	100	93.0	93.0	80.0-120	
Silver	20.0	18.7	93.7	80.0-120	
Zinc	100	88.1	88.1	80.0-120	

L1665072-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1665072-01 10/12/23 13:08 • (MS) R3985448-5 10/12/23 13:18 • (MSD) R3985448-6 10/12/23 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 %
Arsenic	100	2.93	90.7	85.5	87.7	82.5	5	75.0-125			5.91	20
Barium	100	60.0	137	127	76.6	67.4	5	75.0-125		J6	6.98	20
Cadmium	100	0.847	92.7	88.4	91.9	87.6	5	75.0-125			4.72	20
Copper	100	14.3	92.6	92.2	78.3	77.8	5	75.0-125			0.454	20
Lead	100	13.6	99.7	99.0	86.1	85.4	5	75.0-125			0.715	20
Nickel	100	17.7	102	94.9	84.0	77.2	5	75.0-125			6.94	20
Selenium	100	0.605	97.0	90.7	96.4	90.1	5	75.0-125			6.65	20
Silver	20.0	0.120	18.9	18.0	93.7	89.2	5	75.0-125			4.95	20
Zinc	100	70.5	151	146	80.9	75.2	5	75.0-125			3.81	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3985456-1 10/12/23 13:22

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00
Barium	U		0.152	2.50
Cadmium	U		0.0855	1.00
Copper	U		0.133	5.00
Lead	U		0.0990	2.00
Nickel	U		0.197	2.50
Selenium	U		0.180	2.50
Silver	U		0.0865	0.500
Zinc	1.12	U	0.740	25.0

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

Laboratory Control Sample (LCS)

(LCS) R3985456-2 10/12/23 13:25

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	104	104	80.0-120	
Barium	100	97.2	97.2	80.0-120	
Cadmium	100	98.5	98.5	80.0-120	
Copper	100	91.4	91.4	80.0-120	
Lead	100	97.6	97.6	80.0-120	
Nickel	100	99.9	99.9	80.0-120	
Selenium	100	99.7	99.7	80.0-120	
Silver	20.0	20.5	103	80.0-120	
Zinc	100	102	102	80.0-120	

⁷Gl

⁸Al

⁹Sc

L1664954-23 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1664954-23 10/12/23 13:29 • (MS) R3985456-5 10/12/23 13:39 • (MSD) R3985456-6 10/12/23 13:42

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	0.661	88.7	89.1	88.0	88.4	5	75.0-125			0.445	20
Barium	100	14.3	96.1	100	81.8	85.9	5	75.0-125	E	E	4.13	20
Cadmium	100	U	87.8	84.0	87.8	84.0	5	75.0-125			4.40	20
Copper	100	15.3	91.3	94.1	76.0	78.8	5	75.0-125			3.06	20
Lead	100	0.815	85.9	81.1	85.1	80.3	5	75.0-125			5.71	20
Nickel	100	0.321	86.7	86.7	86.3	86.4	5	75.0-125			0.0219	20
Selenium	100	U	84.5	74.1	84.5	74.1	5	75.0-125		J6	13.1	20
Silver	20.0	0.0891	18.6	17.6	92.5	87.8	5	75.0-125			5.20	20
Zinc	100	24.9	104	113	78.7	87.8	5	75.0-125			8.34	20

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

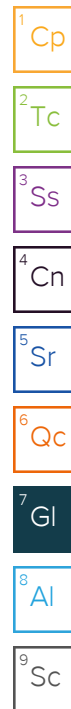
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
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.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
T8	Sample(s) received past/too close to holding time expiration.



ACCREDITATIONS & LOCATIONS

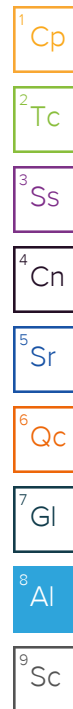
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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

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

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

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



[illegible]

Caerus Oil and Gas

Sample Delivery Group: L1529302
Samples Received: 08/25/2022
Project Number: USA PC F24-6G
Description: USA PC F24-6G Facility Decommissioning
Site: USA PC F24-6G
Report To: Brett Middleton
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:



Chris Ward
Project Manager

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



Pace Analytical National

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

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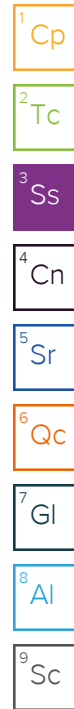
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¹ Cp
² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc

SAMPLE SUMMARY

20220823-F24-6G (POC-VAULT1) @ 7' L1529302-01 Solid

				Collected by	Collected date/time	Received date/time
				Kevin Fletcher	08/23/22 14:10	08/25/22 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1918176	1	08/30/22 23:25	08/30/22 23:25	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1920921	1	09/07/22 17:49	09/09/22 08:25	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1920025	1	09/01/22 16:00	09/01/22 18:00	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1924186	1	09/14/22 08:38	09/16/22 09:10	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1918579	1	08/31/22 15:35	09/01/22 11:12	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1920370	1	09/05/22 08:25	09/08/22 14:11	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1918583	5	08/31/22 15:36	09/01/22 01:05	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1917405	1	08/26/22 16:45	08/28/22 08:03	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1918054	1	08/26/22 16:45	08/29/22 17:18	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1918107	1	08/30/22 07:33	08/30/22 16:55	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1918108	1	08/29/22 13:17	08/29/22 20:57	JMB	Mt. Juliet, TN



20220823-F24-6G (POC-VAULT2) @ 7' L1529302-02 Solid

				Collected by	Collected date/time	Received date/time
				Kevin Fletcher	08/23/22 14:20	08/25/22 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1918176	1	08/30/22 23:28	08/30/22 23:28	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1920921	1	09/07/22 17:49	09/09/22 08:40	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1920025	1	09/01/22 16:00	09/01/22 18:00	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1924186	1	09/14/22 08:38	09/16/22 09:10	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1918579	1	08/31/22 15:35	09/01/22 11:15	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1920370	1	09/05/22 08:25	09/08/22 14:13	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1918583	5	08/31/22 15:36	09/01/22 01:09	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1917405	1	08/26/22 16:45	08/28/22 08:23	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1918054	1	08/26/22 16:45	08/29/22 17:38	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1918107	1	08/30/22 07:33	08/30/22 17:08	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1918108	1	08/29/22 13:17	08/29/22 21:17	JMB	Mt. Juliet, TN

20220823-F24-6G (POC-VAULT3) @ 6' L1529302-03 Solid

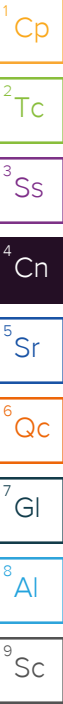
				Collected by	Collected date/time	Received date/time
				Kevin Fletcher	08/23/22 14:30	08/25/22 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1918176	1	08/30/22 23:30	08/30/22 23:30	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1920921	1	09/07/22 17:49	09/09/22 08:45	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1920030	1	09/03/22 07:00	09/03/22 09:00	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1924186	1	09/14/22 08:38	09/16/22 09:10	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1918579	1	08/31/22 15:35	09/01/22 11:18	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1920370	1	09/05/22 08:25	09/08/22 14:16	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1918583	5	08/31/22 15:36	09/01/22 01:12	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1917405	1	08/26/22 16:45	08/28/22 08:44	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1918054	1	08/26/22 16:45	08/29/22 17:57	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1918107	1	08/30/22 07:33	08/30/22 17:21	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1918108	1	08/29/22 13:17	08/29/22 21:36	JMB	Mt. Juliet, TN

CASE NARRATIVE

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



Chris Ward
Project Manager



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.19		1	08/30/2022 23:25	WG1918176

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	09/09/2022 08:25	WG1920921

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.61	T8	1	09/01/2022 18:00	WG1920025

Sample Narrative:

L1529302-01 WG1920025: 8.61 at 20.2C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	318		10.0	1	09/16/2022 09:10	WG1924186

Sample Narrative:

L1529302-01 WG1924186: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	277		0.500	1	09/01/2022 11:12	WG1918579
Cadmium	ND		0.500	1	09/01/2022 11:12	WG1918579
Copper	11.3		2.00	1	09/01/2022 11:12	WG1918579
Lead	8.56		0.500	1	09/01/2022 11:12	WG1918579
Nickel	15.8		2.00	1	09/01/2022 11:12	WG1918579
Selenium	ND		2.00	1	09/01/2022 11:12	WG1918579
Silver	ND		1.00	1	09/01/2022 11:12	WG1918579
Zinc	48.2		5.00	1	09/01/2022 11:12	WG1918579

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

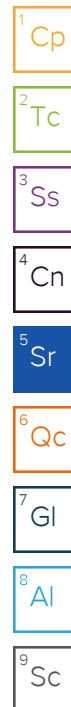
Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.393		0.200	1	09/08/2022 14:11	WG1920370

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	4.47		1.00	5	09/01/2022 01:05	WG1918583

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	08/28/2022 08:03	WG1917405
(S) a,a,a-Trifluorotoluene(FID)	91.4		77.0-120		08/28/2022 08:03	WG1917405



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	08/29/2022 17:18	WG1918054
Toluene	ND		0.00500	1	08/29/2022 17:18	WG1918054
Ethylbenzene	ND		0.00250	1	08/29/2022 17:18	WG1918054
Xylenes, Total	ND		0.00650	1	08/29/2022 17:18	WG1918054
1,2,4-Trimethylbenzene	ND		0.00500	1	08/29/2022 17:18	WG1918054
1,3,5-Trimethylbenzene	ND		0.00500	1	08/29/2022 17:18	WG1918054
(S) Toluene-d8	108		75.0-131		08/29/2022 17:18	WG1918054
(S) 4-Bromofluorobenzene	76.0		67.0-138		08/29/2022 17:18	WG1918054
(S) 1,2-Dichloroethane-d4	103		70.0-130		08/29/2022 17:18	WG1918054

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	08/30/2022 16:55	WG1918107
C28-C36 Motor Oil Range	10.5		4.00	1	08/30/2022 16:55	WG1918107
(S) o-Terphenyl	43.8		18.0-148		08/30/2022 16:55	WG1918107

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.00600	1	08/29/2022 20:57	WG1918108
Anthracene	ND		0.00600	1	08/29/2022 20:57	WG1918108
Benzo(a)anthracene	ND		0.00600	1	08/29/2022 20:57	WG1918108
Benzo(b)fluoranthene	ND		0.00600	1	08/29/2022 20:57	WG1918108
Benzo(k)fluoranthene	ND		0.00600	1	08/29/2022 20:57	WG1918108
Benzo(a)pyrene	ND		0.00600	1	08/29/2022 20:57	WG1918108
Chrysene	ND		0.00600	1	08/29/2022 20:57	WG1918108
Dibenz(a,h)anthracene	ND		0.00600	1	08/29/2022 20:57	WG1918108
Fluoranthene	ND		0.00600	1	08/29/2022 20:57	WG1918108
Fluorene	ND		0.00600	1	08/29/2022 20:57	WG1918108
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	08/29/2022 20:57	WG1918108
1-Methylnaphthalene	ND		0.0200	1	08/29/2022 20:57	WG1918108
2-Methylnaphthalene	ND		0.0200	1	08/29/2022 20:57	WG1918108
Naphthalene	ND		0.0200	1	08/29/2022 20:57	WG1918108
Pyrene	ND		0.00600	1	08/29/2022 20:57	WG1918108
(S) p-Terphenyl-d14	72.1		23.0-120		08/29/2022 20:57	WG1918108
(S) Nitrobenzene-d5	65.7		14.0-149		08/29/2022 20:57	WG1918108
(S) 2-Fluorobiphenyl	71.2		34.0-125		08/29/2022 20:57	WG1918108

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.332		1	08/30/2022 23:28	WG1918176

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	09/09/2022 08:40	WG1920921

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.38	T8	1	09/01/2022 18:00	WG1920025

Sample Narrative:

L1529302-02 WG1920025: 8.38 at 19.9C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	193		10.0	1	09/16/2022 09:10	WG1924186

Sample Narrative:

L1529302-02 WG1924186: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	263		0.500	1	09/01/2022 11:15	WG1918579
Cadmium	ND		0.500	1	09/01/2022 11:15	WG1918579
Copper	12.6		2.00	1	09/01/2022 11:15	WG1918579
Lead	9.83		0.500	1	09/01/2022 11:15	WG1918579
Nickel	18.3		2.00	1	09/01/2022 11:15	WG1918579
Selenium	ND		2.00	1	09/01/2022 11:15	WG1918579
Silver	ND		1.00	1	09/01/2022 11:15	WG1918579
Zinc	57.3		5.00	1	09/01/2022 11:15	WG1918579

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.276		0.200	1	09/08/2022 14:13	WG1920370

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	5.42		1.00	5	09/01/2022 01:09	WG1918583

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	08/28/2022 08:23	WG1917405
(S) a,a,a-Trifluorotoluene(FID)	92.3		77.0-120		08/28/2022 08:23	WG1917405

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	08/29/2022 17:38	WG1918054
Toluene	ND		0.00500	1	08/29/2022 17:38	WG1918054
Ethylbenzene	ND		0.00250	1	08/29/2022 17:38	WG1918054
Xylenes, Total	ND		0.00650	1	08/29/2022 17:38	WG1918054
1,2,4-Trimethylbenzene	ND		0.00500	1	08/29/2022 17:38	WG1918054
1,3,5-Trimethylbenzene	ND		0.00500	1	08/29/2022 17:38	WG1918054
(S) Toluene-d8	104		75.0-131		08/29/2022 17:38	WG1918054
(S) 4-Bromofluorobenzene	78.8		67.0-138		08/29/2022 17:38	WG1918054
(S) 1,2-Dichloroethane-d4	104		70.0-130		08/29/2022 17:38	WG1918054

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	08/30/2022 17:08	WG1918107
C28-C36 Motor Oil Range	14.2		4.00	1	08/30/2022 17:08	WG1918107
(S) o-Terphenyl	37.1		18.0-148		08/30/2022 17:08	WG1918107

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.00600	1	08/29/2022 21:17	WG1918108
Anthracene	ND		0.00600	1	08/29/2022 21:17	WG1918108
Benzo(a)anthracene	ND		0.00600	1	08/29/2022 21:17	WG1918108
Benzo(b)fluoranthene	ND		0.00600	1	08/29/2022 21:17	WG1918108
Benzo(k)fluoranthene	ND		0.00600	1	08/29/2022 21:17	WG1918108
Benzo(a)pyrene	ND		0.00600	1	08/29/2022 21:17	WG1918108
Chrysene	ND		0.00600	1	08/29/2022 21:17	WG1918108
Dibenz(a,h)anthracene	ND		0.00600	1	08/29/2022 21:17	WG1918108
Fluoranthene	ND		0.00600	1	08/29/2022 21:17	WG1918108
Fluorene	ND		0.00600	1	08/29/2022 21:17	WG1918108
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	08/29/2022 21:17	WG1918108
1-Methylnaphthalene	ND		0.0200	1	08/29/2022 21:17	WG1918108
2-Methylnaphthalene	ND		0.0200	1	08/29/2022 21:17	WG1918108
Naphthalene	ND		0.0200	1	08/29/2022 21:17	WG1918108
Pyrene	ND		0.00600	1	08/29/2022 21:17	WG1918108
(S) p-Terphenyl-d14	72.2		23.0-120		08/29/2022 21:17	WG1918108
(S) Nitrobenzene-d5	69.2		14.0-149		08/29/2022 21:17	WG1918108
(S) 2-Fluorobiphenyl	72.3		34.0-125		08/29/2022 21:17	WG1918108

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.0957		1	08/30/2022 23:30	WG1918176

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	09/09/2022 08:45	WG1920921

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.15	T8	1	09/03/2022 09:00	WG1920030

Sample Narrative:

L1529302-03 WG1920030: 8.15 at 21.7C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	150		10.0	1	09/16/2022 09:10	WG1924186

Sample Narrative:

L1529302-03 WG1924186: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	220		0.500	1	09/01/2022 11:18	WG1918579
Cadmium	ND		0.500	1	09/01/2022 11:18	WG1918579
Copper	12.0		2.00	1	09/01/2022 11:18	WG1918579
Lead	9.86		0.500	1	09/01/2022 11:18	WG1918579
Nickel	16.9		2.00	1	09/01/2022 11:18	WG1918579
Selenium	ND		2.00	1	09/01/2022 11:18	WG1918579
Silver	ND		1.00	1	09/01/2022 11:18	WG1918579
Zinc	135		5.00	1	09/01/2022 11:18	WG1918579

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.291		0.200	1	09/08/2022 14:16	WG1920370

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	5.11		1.00	5	09/01/2022 01:12	WG1918583

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	08/28/2022 08:44	WG1917405
(S) a,a,a-Trifluorotoluene(FID)	91.3		77.0-120		08/28/2022 08:44	WG1917405

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	08/29/2022 17:57	WG1918054
Toluene	ND		0.00500	1	08/29/2022 17:57	WG1918054
Ethylbenzene	ND		0.00250	1	08/29/2022 17:57	WG1918054
Xylenes, Total	ND		0.00650	1	08/29/2022 17:57	WG1918054
1,2,4-Trimethylbenzene	ND		0.00500	1	08/29/2022 17:57	WG1918054
1,3,5-Trimethylbenzene	ND		0.00500	1	08/29/2022 17:57	WG1918054
(S) Toluene-d8	106		75.0-131		08/29/2022 17:57	WG1918054
(S) 4-Bromofluorobenzene	76.3		67.0-138		08/29/2022 17:57	WG1918054
(S) 1,2-Dichloroethane-d4	106		70.0-130		08/29/2022 17:57	WG1918054

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	4.64		4.00	1	08/30/2022 17:21	WG1918107
C28-C36 Motor Oil Range	19.5		4.00	1	08/30/2022 17:21	WG1918107
(S) o-Terphenyl	41.6		18.0-148		08/30/2022 17:21	WG1918107

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.00600	1	08/29/2022 21:36	WG1918108
Anthracene	ND		0.00600	1	08/29/2022 21:36	WG1918108
Benzo(a)anthracene	ND		0.00600	1	08/29/2022 21:36	WG1918108
Benzo(b)fluoranthene	ND		0.00600	1	08/29/2022 21:36	WG1918108
Benzo(k)fluoranthene	ND		0.00600	1	08/29/2022 21:36	WG1918108
Benzo(a)pyrene	ND		0.00600	1	08/29/2022 21:36	WG1918108
Chrysene	ND		0.00600	1	08/29/2022 21:36	WG1918108
Dibenz(a,h)anthracene	ND		0.00600	1	08/29/2022 21:36	WG1918108
Fluoranthene	ND		0.00600	1	08/29/2022 21:36	WG1918108
Fluorene	ND		0.00600	1	08/29/2022 21:36	WG1918108
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	08/29/2022 21:36	WG1918108
1-Methylnaphthalene	ND		0.0200	1	08/29/2022 21:36	WG1918108
2-Methylnaphthalene	ND		0.0200	1	08/29/2022 21:36	WG1918108
Naphthalene	ND		0.0200	1	08/29/2022 21:36	WG1918108
Pyrene	ND		0.00600	1	08/29/2022 21:36	WG1918108
(S) p-Terphenyl-d14	84.1		23.0-120		08/29/2022 21:36	WG1918108
(S) Nitrobenzene-d5	77.6		14.0-149		08/29/2022 21:36	WG1918108
(S) 2-Fluorobiphenyl	82.9		34.0-125		08/29/2022 21:36	WG1918108

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3836808-1 09/09/22 07:31

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

L1529301-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1529301-01 09/09/22 08:14 • (DUP) R3836808-3 09/09/22 08:19

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

L1529928-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1529928-02 09/09/22 10:30 • (DUP) R3836808-8 09/09/22 10:35

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

Laboratory Control Sample (LCS)

(LCS) R3836808-2 09/09/22 07:38

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	9.81	98.1	80.0-120	

L1529928-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1529928-01 09/09/22 09:27 • (MS) R3836808-4 09/09/22 10:10 • (MSD) R3836808-5 09/09/22 10:15

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Hexavalent Chromium	20.0	ND	14.5	15.5	72.6	77.6	1	75.0-125	J6		6.67	20

L1529928-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1529928-01 09/09/22 09:27 • (MS) R3836808-7 09/09/22 10:25

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	638	ND	762	119	50	75.0-125	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1529291-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1529291-02 09/01/22 18:00 • (DUP) R3833117-2 09/01/22 18:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	pH	su		%		%
pH	7.98	7.95	1	0.377		1

Sample Narrative:

OS: 7.98 at 20.7C

DUP: 7.95 at 20.9C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1529302-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1529302-01 09/01/22 18:00 • (DUP) R3833117-3 09/01/22 18:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	pH	su		%		%
pH	8.61	8.61	1	0.000		1

Sample Narrative:

OS: 8.61 at 20.2C

DUP: 8.61 at 20.3C

Laboratory Control Sample (LCS)

(LCS) R3833117-1 09/01/22 18:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	9.90	99.0	99.0-101	

Sample Narrative:

LCS: 9.9 at 20.9C

L1529164-35 Original Sample (OS) • Duplicate (DUP)

(OS) L1529164-35 09/03/22 09:00 • (DUP) R3833546-2 09/03/22 09:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.25	8.24	1	0.121		1

Sample Narrative:

OS: 8.25 at 22C

DUP: 8.24 at 22.1C

L1529329-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1529329-04 09/03/22 09:00 • (DUP) R3833546-3 09/03/22 09:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.13	8.13	1	0.000		1

Sample Narrative:

OS: 8.13 at 21.7C

DUP: 8.13 at 21.7C

Laboratory Control Sample (LCS)

(LCS) R3833546-1 09/03/22 09:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	9.90	99.0	99.0-101	

Sample Narrative:

LCS: 9.9 at 21.9C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3837900-1 09/16/22 09:10

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

L1531542-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1531542-01 09/16/22 09:10 • (DUP) R3837900-3 09/16/22 09:10

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	2100	2100	1	0.000		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1532204-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1532204-02 09/16/22 09:10 • (DUP) R3837900-4 09/16/22 09:10

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	1030	1030	1	0.194		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3837900-2 09/16/22 09:10

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	1120	1060	94.5	85.0-115	

Sample Narrative:

LCS: at 25C

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3832955-1 09/01/22 10:29

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

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

Laboratory Control Sample (LCS)

(LCS) R3832955-2 09/01/22 10:31

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	100	100	80.0-120	
Cadmium	100	95.5	95.5	80.0-120	
Copper	100	98.6	98.6	80.0-120	
Lead	100	97.8	97.8	80.0-120	
Nickel	100	96.8	96.8	80.0-120	
Selenium	100	97.8	97.8	80.0-120	
Silver	20.0	19.2	95.8	80.0-120	
Zinc	100	94.3	94.3	80.0-120	

7
Gl

8
Al

9
Sc

L1530091-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1530091-01 09/01/22 10:34 • (MS) R3832955-5 09/01/22 10:42 • (MSD) R3832955-6 09/01/22 10:45

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	119	188	220	68.9	101	1	75.0-125	J6		15.7	20
Cadmium	100	ND	95.1	96.0	94.8	95.6	1	75.0-125			0.922	20
Copper	100	12.6	114	114	101	101	1	75.0-125			0.137	20
Lead	100	16.6	113	113	96.0	96.6	1	75.0-125			0.495	20
Nickel	100	13.6	113	111	99.2	97.7	1	75.0-125			1.37	20
Selenium	100	ND	96.3	97.4	96.3	97.4	1	75.0-125			1.13	20
Silver	20.0	ND	18.8	18.7	93.8	93.6	1	75.0-125			0.182	20
Zinc	100	54.5	154	147	99.5	92.2	1	75.0-125			4.86	20

Method Blank (MB)

(MB) R3835174-1 09/08/22 13:54

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) R3835174-2 09/08/22 13:57 • (LCSD) R3835174-3 09/08/22 13:59

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	0.984	0.982	98.4	98.2	80.0-120			0.206	20

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Cp

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Qc

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Method Blank (MB)

(MB) R3832714-1 09/01/22 00:11

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) R3832714-2 09/01/22 00:19

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	93.4	93.4	80.0-120	

L1530091-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1530091-01 09/01/22 00:22 • (MS) R3832714-5 09/01/22 00:32 • (MSD) R3832714-6 09/01/22 00:35

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	7.44	94.3	95.1	86.9	87.7	5	75.0-125			0.815	20

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Al

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Method Blank (MB)

(MB) R3832547-2 08/27/22 23:00

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	93.5			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3832547-1 08/27/22 22:03

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.94	108	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			107	77.0-120	

L1528872-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1528872-01 08/27/22 23:21 • (MS) R3832547-3 08/28/22 10:58 • (MSD) R3832547-4 08/28/22 11:19

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 %
TPH (GC/FID) Low Fraction	5.45	0.516	3.10	2.25	47.4	31.5	1	10.0-151		J3	31.8	28
(S) a,a,a-Trifluorotoluene(FID)					87.8	89.5		77.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3832836-2 08/29/22 11:41

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	109			75.0-131
(S) 4-Bromofluorobenzene	80.4			67.0-138
(S) 1,2-Dichloroethane-d4	95.4			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3832836-1 08/29/22 10:23

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.115	92.0	70.0-123	
Toluene	0.125	0.118	94.4	75.0-121	
Ethylbenzene	0.125	0.111	88.8	74.0-126	
Xylenes, Total	0.375	0.313	83.5	72.0-127	
1,2,4-Trimethylbenzene	0.125	0.105	84.0	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.123	98.4	73.0-127	
(S) Toluene-d8			105	75.0-131	
(S) 4-Bromofluorobenzene			75.6	67.0-138	
(S) 1,2-Dichloroethane-d4			105	70.0-130	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3832321-1 08/30/22 12:19

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	57.4			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3832321-2 08/30/22 12:32

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	29.4	58.8	50.0-150	
(S) o-Terphenyl			66.5	18.0-148	

L1529261-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1529261-08 08/30/22 12:59 • (MS) R3832321-3 08/30/22 13:12 • (MSD) R3832321-4 08/30/22 13:31

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	48.8	ND	21.0	31.9	43.0	65.1	1	50.0-150	J6	J3	41.2	20
(S) o-Terphenyl					43.8	59.2		18.0-148				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3832061-2 08/29/22 17:20

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	U		0.00209	0.00600
Anthracene	U		0.00230	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
Naphthalene	U		0.00408	0.0200
Pyrene	U		0.00200	0.00600
(S) p-Terphenyl-d14	87.8			23.0-120
(S) Nitrobenzene-d5	75.8			14.0-149
(S) 2-Fluorobiphenyl	82.0			34.0-125

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Laboratory Control Sample (LCS)

(LCS) R3832061-1 08/29/22 17:00

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0713	89.1	50.0-120	
Anthracene	0.0800	0.0717	89.6	50.0-126	
Benzo(a)anthracene	0.0800	0.0708	88.5	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0664	83.0	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0658	82.3	49.0-125	
Benzo(a)pyrene	0.0800	0.0583	72.9	42.0-120	
Chrysene	0.0800	0.0700	87.5	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0637	79.6	47.0-125	
Fluoranthene	0.0800	0.0747	93.4	49.0-129	
Fluorene	0.0800	0.0685	85.6	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0678	84.8	46.0-125	
1-Methylnaphthalene	0.0800	0.0698	87.3	51.0-121	
2-Methylnaphthalene	0.0800	0.0724	90.5	50.0-120	
Naphthalene	0.0800	0.0688	86.0	50.0-120	
Pyrene	0.0800	0.0633	79.1	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R3832061-1 08/29/22 17:00

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
(S) p-Terphenyl-d14			94.0	23.0-120	
(S) Nitrobenzene-d5			94.1	14.0-149	
(S) 2-Fluorobiphenyl			94.7	34.0-125	

L1529301-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1529301-01 08/29/22 17:39 • (MS) R3832061-3 08/29/22 17:59 • (MSD) R3832061-4 08/29/22 18:19

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Acenaphthene	0.0784	ND	0.0564	0.0585	71.9	74.6	1	14.0-127			3.66	27
Anthracene	0.0784	ND	0.0571	0.0572	72.8	73.0	1	10.0-145			0.175	30
Benzo(a)anthracene	0.0784	ND	0.0559	0.0563	71.3	71.8	1	10.0-139			0.713	30
Benzo(b)fluoranthene	0.0784	ND	0.0519	0.0527	66.2	67.2	1	10.0-140			1.53	36
Benzo(k)fluoranthene	0.0784	ND	0.0513	0.0527	65.4	67.2	1	10.0-137			2.69	31
Benzo(a)pyrene	0.0784	ND	0.0572	0.0596	73.0	76.0	1	10.0-141			4.11	31
Chrysene	0.0784	ND	0.0552	0.0573	70.4	73.1	1	10.0-145			3.73	30
Dibenz(a,h)anthracene	0.0784	ND	0.0498	0.0530	63.5	67.6	1	10.0-132			6.23	31
Fluoranthene	0.0784	ND	0.0598	0.0588	76.3	75.0	1	10.0-153			1.69	33
Fluorene	0.0784	ND	0.0553	0.0559	70.5	71.3	1	11.0-130			1.08	29
Indeno(1,2,3-cd)pyrene	0.0784	ND	0.0538	0.0554	68.6	70.7	1	10.0-137			2.93	32
1-Methylnaphthalene	0.0784	ND	0.0557	0.0583	71.0	74.4	1	10.0-142			4.56	28
2-Methylnaphthalene	0.0784	ND	0.0575	0.0591	73.3	75.4	1	10.0-137			2.74	28
Naphthalene	0.0784	ND	0.0533	0.0546	68.0	69.6	1	10.0-135			2.41	27
Pyrene	0.0784	ND	0.0505	0.0522	64.4	66.6	1	10.0-148			3.31	35
(S) p-Terphenyl-d14					74.2	76.9		23.0-120				
(S) Nitrobenzene-d5					73.8	75.3		14.0-149				
(S) 2-Fluorobiphenyl					77.4	80.3		34.0-125				

1Cp

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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.
T8	Sample(s) received past/too close to holding time expiration.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

ACCREDITATIONS & LOCATIONS

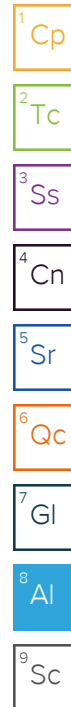
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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

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

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

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



Caerus Oil and Gas

Sample Delivery Group: L1529298
Samples Received: 08/25/2022
Project Number: USA PC F24-6G
Description: USA PC F24-6G Facility Decommissioning
Site: USA PC F24-6G
Report To: Brett Middleton
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:



Chris Ward
Project Manager

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

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

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SAMPLE SUMMARY

20220823-F24-6G (BG-SE) @ 12' L1529298-01 Solid

Collected by
Kevin Fletcher

Collected date/time
08/23/22 13:20

Received date/time
08/25/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1918176	1	08/30/22 23:13	08/30/22 23:13	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1920921	1	09/07/22 17:49	09/09/22 07:59	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1920025	1	09/01/22 16:00	09/01/22 18:00	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1923754	1	09/10/22 15:00	09/13/22 12:40	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1919105	1	09/01/22 18:09	09/04/22 13:04	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1917807	1	08/29/22 10:52	09/01/22 13:20	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1919104	5	09/01/22 17:59	09/02/22 16:46	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1919575	1	08/26/22 16:45	09/01/22 06:43	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1918054	1	08/26/22 16:45	08/29/22 16:40	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1918107	1	08/30/22 07:33	08/30/22 15:43	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1918108	1	08/29/22 13:17	08/29/22 20:37	JMB	Mt. Juliet, TN

¹Cp

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CASE NARRATIVE

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



Chris Ward
Project Manager

¹ Cp

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³ Ss

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⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	11.0		1	08/30/2022 23:13	WG1918176

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	09/09/2022 07:59	WG1920921

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.33	T8	1	09/01/2022 18:00	WG1920025

Sample Narrative:

L1529298-01 WG1920025: 8.33 at 19.9C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	1660		10.0	1	09/13/2022 12:40	WG1923754

Sample Narrative:

L1529298-01 WG1923754: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	247		0.500	1	09/04/2022 13:04	WG1919105
Cadmium	ND		0.500	1	09/04/2022 13:04	WG1919105
Copper	9.29		2.00	1	09/04/2022 13:04	WG1919105
Lead	8.65		0.500	1	09/04/2022 13:04	WG1919105
Nickel	14.4		2.00	1	09/04/2022 13:04	WG1919105
Selenium	ND		2.00	1	09/04/2022 13:04	WG1919105
Silver	ND		1.00	1	09/04/2022 13:04	WG1919105
Zinc	36.5		5.00	1	09/04/2022 13:04	WG1919105

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

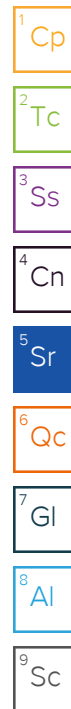
Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.257		0.200	1	09/01/2022 13:20	WG1917807

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	5.91		1.00	5	09/02/2022 16:46	WG1919104

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	09/01/2022 06:43	WG1919575
(S) a,a,a-Trifluorotoluene(FID)	94.9		77.0-120		09/01/2022 06:43	WG1919575



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	08/29/2022 16:40	WG1918054
Toluene	ND		0.00500	1	08/29/2022 16:40	WG1918054
Ethylbenzene	ND		0.00250	1	08/29/2022 16:40	WG1918054
Xylenes, Total	ND		0.00650	1	08/29/2022 16:40	WG1918054
1,2,4-Trimethylbenzene	ND		0.00500	1	08/29/2022 16:40	WG1918054
1,3,5-Trimethylbenzene	ND		0.00500	1	08/29/2022 16:40	WG1918054
(S) Toluene-d8	106		75.0-131		08/29/2022 16:40	WG1918054
(S) 4-Bromofluorobenzene	84.3		67.0-138		08/29/2022 16:40	WG1918054
(S) 1,2-Dichloroethane-d4	104		70.0-130		08/29/2022 16:40	WG1918054

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	08/30/2022 15:43	WG1918107
C28-C36 Motor Oil Range	ND		4.00	1	08/30/2022 15:43	WG1918107
(S) o-Terphenyl	55.4		18.0-148		08/30/2022 15:43	WG1918107

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.00600	1	08/29/2022 20:37	WG1918108
Anthracene	ND		0.00600	1	08/29/2022 20:37	WG1918108
Benzo(a)anthracene	ND		0.00600	1	08/29/2022 20:37	WG1918108
Benzo(b)fluoranthene	ND		0.00600	1	08/29/2022 20:37	WG1918108
Benzo(k)fluoranthene	ND		0.00600	1	08/29/2022 20:37	WG1918108
Benzo(a)pyrene	ND		0.00600	1	08/29/2022 20:37	WG1918108
Chrysene	ND		0.00600	1	08/29/2022 20:37	WG1918108
Dibenz(a,h)anthracene	ND		0.00600	1	08/29/2022 20:37	WG1918108
Fluoranthene	ND		0.00600	1	08/29/2022 20:37	WG1918108
Fluorene	ND		0.00600	1	08/29/2022 20:37	WG1918108
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	08/29/2022 20:37	WG1918108
1-Methylnaphthalene	ND		0.0200	1	08/29/2022 20:37	WG1918108
2-Methylnaphthalene	ND		0.0200	1	08/29/2022 20:37	WG1918108
Naphthalene	ND		0.0200	1	08/29/2022 20:37	WG1918108
Pyrene	ND		0.00600	1	08/29/2022 20:37	WG1918108
(S) p-Terphenyl-d14	82.9		23.0-120		08/29/2022 20:37	WG1918108
(S) Nitrobenzene-d5	67.7		14.0-149		08/29/2022 20:37	WG1918108
(S) 2-Fluorobiphenyl	75.7		34.0-125		08/29/2022 20:37	WG1918108

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3836808-1 09/09/22 07:31

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

L1529301-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1529301-01 09/09/22 08:14 • (DUP) R3836808-3 09/09/22 08:19

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

L1529928-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1529928-02 09/09/22 10:30 • (DUP) R3836808-8 09/09/22 10:35

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

Laboratory Control Sample (LCS)

(LCS) R3836808-2 09/09/22 07:38

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	9.81	98.1	80.0-120	

L1529928-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1529928-01 09/09/22 09:27 • (MS) R3836808-4 09/09/22 10:10 • (MSD) R3836808-5 09/09/22 10:15

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Hexavalent Chromium	20.0	ND	14.5	15.5	72.6	77.6	1	75.0-125	J6		6.67	20

L1529928-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1529928-01 09/09/22 09:27 • (MS) R3836808-7 09/09/22 10:25

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	638	ND	762	119	50	75.0-125	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1529291-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1529291-02 09/01/22 18:00 • (DUP) R3833117-2 09/01/22 18:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	pH	su		%		%
pH	7.98	7.95	1	0.377		1

Sample Narrative:

OS: 7.98 at 20.7C

DUP: 7.95 at 20.9C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1529302-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1529302-01 09/01/22 18:00 • (DUP) R3833117-3 09/01/22 18:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	pH	su		%		%
pH	8.61	8.61	1	0.000		1

Sample Narrative:

OS: 8.61 at 20.2C

DUP: 8.61 at 20.3C

Laboratory Control Sample (LCS)

(LCS) R3833117-1 09/01/22 18:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	9.90	99.0	99.0-101	

Sample Narrative:

LCS: 9.9 at 20.9C

Method Blank (MB)

(MB) R3836523-1 09/13/22 12:40

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

L1528876-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1528876-07 09/13/22 12:40 • (DUP) R3836523-3 09/13/22 12:40

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	176	173	1	1.55		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1529291-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1529291-04 09/13/22 12:40 • (DUP) R3836523-4 09/13/22 12:40

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	237	237	1	0.0421		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3836523-2 09/13/22 12:40

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	1120	1120	99.6	85.0-115	

Sample Narrative:

LCS: at 25C

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3833700-1 09/04/22 12:45

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

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3833700-2 09/04/22 12:47

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	97.1	97.1	80.0-120	
Cadmium	100	93.8	93.8	80.0-120	
Copper	100	93.3	93.3	80.0-120	
Lead	100	93.6	93.6	80.0-120	
Nickel	100	93.4	93.4	80.0-120	
Selenium	100	95.8	95.8	80.0-120	
Silver	20.0	17.8	89.1	80.0-120	
Zinc	100	91.6	91.6	80.0-120	

L1530247-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1530247-04 09/04/22 12:50 • (MS) R3833700-5 09/04/22 12:58 • (MSD) R3833700-6 09/04/22 13:01

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 %
Barium	100	181	286	279	104	97.2	1	75.0-125			2.56	20
Cadmium	100	ND	105	89.2	105	88.9	1	75.0-125			16.7	20
Copper	100	15.2	121	106	106	91.0	1	75.0-125			13.5	20
Lead	100	9.64	117	101	108	91.0	1	75.0-125			15.2	20
Nickel	100	17.7	125	108	107	90.6	1	75.0-125			14.2	20
Selenium	100	ND	100	84.1	100	84.1	1	75.0-125			17.7	20
Silver	20.0	ND	20.0	16.9	99.9	84.4	1	75.0-125			16.8	20
Zinc	100	45.9	139	121	93.1	75.3	1	75.0-125			13.7	20

Method Blank (MB)

(MB) R3833105-1 09/01/22 12:55

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) R3833105-2 09/01/22 12:57 • (LCSD) R3833105-3 09/01/22 13:00

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	1.09	106	109	80.0-120			2.13	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3833510-1 09/02/22 16:24

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

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

Laboratory Control Sample (LCS)

(LCS) R3833510-2 09/02/22 16:27

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	97.3	97.3	80.0-120	

⁷Gl

⁸Al

⁹Sc

L1530247-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1530247-04 09/02/22 16:30 • (MS) R3833510-5 09/02/22 16:40 • (MSD) R3833510-6 09/02/22 16:43

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 %
Arsenic	100	5.12	105	92.9	100	87.8	5	75.0-125			12.4	20

Method Blank (MB)

(MB) R3832970-1 09/01/22 03:59

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	96.1			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3832970-2 09/01/22 04:40

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.38	97.8	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			103	77.0-120	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3832836-2 08/29/22 11:41

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	109			75.0-131
(S) 4-Bromofluorobenzene	80.4			67.0-138
(S) 1,2-Dichloroethane-d4	95.4			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3832836-1 08/29/22 10:23

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.115	92.0	70.0-123	
Toluene	0.125	0.118	94.4	75.0-121	
Ethylbenzene	0.125	0.111	88.8	74.0-126	
Xylenes, Total	0.375	0.313	83.5	72.0-127	
1,2,4-Trimethylbenzene	0.125	0.105	84.0	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.123	98.4	73.0-127	
(S) Toluene-d8			105	75.0-131	
(S) 4-Bromofluorobenzene			75.6	67.0-138	
(S) 1,2-Dichloroethane-d4			105	70.0-130	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3832321-1 08/30/22 12:19

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	57.4			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3832321-2 08/30/22 12:32

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	29.4	58.8	50.0-150	
(S) o-Terphenyl			66.5	18.0-148	

L1529261-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1529261-08 08/30/22 12:59 • (MS) R3832321-3 08/30/22 13:12 • (MSD) R3832321-4 08/30/22 13:31

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	48.8	ND	21.0	31.9	43.0	65.1	1	50.0-150	J6	J3	41.2	20
(S) o-Terphenyl					43.8	59.2		18.0-148				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3832061-2 08/29/22 17:20

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	U		0.00209	0.00600
Anthracene	U		0.00230	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
Naphthalene	U		0.00408	0.0200
Pyrene	U		0.00200	0.00600
(S) p-Terphenyl-d14	87.8			23.0-120
(S) Nitrobenzene-d5	75.8			14.0-149
(S) 2-Fluorobiphenyl	82.0			34.0-125

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Laboratory Control Sample (LCS)

(LCS) R3832061-1 08/29/22 17:00

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0713	89.1	50.0-120	
Anthracene	0.0800	0.0717	89.6	50.0-126	
Benzo(a)anthracene	0.0800	0.0708	88.5	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0664	83.0	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0658	82.3	49.0-125	
Benzo(a)pyrene	0.0800	0.0583	72.9	42.0-120	
Chrysene	0.0800	0.0700	87.5	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0637	79.6	47.0-125	
Fluoranthene	0.0800	0.0747	93.4	49.0-129	
Fluorene	0.0800	0.0685	85.6	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0678	84.8	46.0-125	
1-Methylnaphthalene	0.0800	0.0698	87.3	51.0-121	
2-Methylnaphthalene	0.0800	0.0724	90.5	50.0-120	
Naphthalene	0.0800	0.0688	86.0	50.0-120	
Pyrene	0.0800	0.0633	79.1	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R3832061-1 08/29/22 17:00

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
(S) p-Terphenyl-d14			94.0	23.0-120	
(S) Nitrobenzene-d5			94.1	14.0-149	
(S) 2-Fluorobiphenyl			94.7	34.0-125	

L1529301-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1529301-01 08/29/22 17:39 • (MS) R3832061-3 08/29/22 17:59 • (MSD) R3832061-4 08/29/22 18:19

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.0784	ND	0.0564	0.0585	71.9	74.6	1	14.0-127			3.66	27
Anthracene	0.0784	ND	0.0571	0.0572	72.8	73.0	1	10.0-145			0.175	30
Benzo(a)anthracene	0.0784	ND	0.0559	0.0563	71.3	71.8	1	10.0-139			0.713	30
Benzo(b)fluoranthene	0.0784	ND	0.0519	0.0527	66.2	67.2	1	10.0-140			1.53	36
Benzo(k)fluoranthene	0.0784	ND	0.0513	0.0527	65.4	67.2	1	10.0-137			2.69	31
Benzo(a)pyrene	0.0784	ND	0.0572	0.0596	73.0	76.0	1	10.0-141			4.11	31
Chrysene	0.0784	ND	0.0552	0.0573	70.4	73.1	1	10.0-145			3.73	30
Dibenz(a,h)anthracene	0.0784	ND	0.0498	0.0530	63.5	67.6	1	10.0-132			6.23	31
Fluoranthene	0.0784	ND	0.0598	0.0588	76.3	75.0	1	10.0-153			1.69	33
Fluorene	0.0784	ND	0.0553	0.0559	70.5	71.3	1	11.0-130			1.08	29
Indeno(1,2,3-cd)pyrene	0.0784	ND	0.0538	0.0554	68.6	70.7	1	10.0-137			2.93	32
1-Methylnaphthalene	0.0784	ND	0.0557	0.0583	71.0	74.4	1	10.0-142			4.56	28
2-Methylnaphthalene	0.0784	ND	0.0575	0.0591	73.3	75.4	1	10.0-137			2.74	28
Naphthalene	0.0784	ND	0.0533	0.0546	68.0	69.6	1	10.0-135			2.41	27
Pyrene	0.0784	ND	0.0505	0.0522	64.4	66.6	1	10.0-148			3.31	35
(S) p-Terphenyl-d14					74.2	76.9		23.0-120				
(S) Nitrobenzene-d5					73.8	75.3		14.0-149				
(S) 2-Fluorobiphenyl					77.4	80.3		34.0-125				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

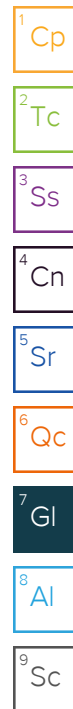
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location.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

Abbreviations and Definitions

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

Qualifier Description

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.
T8	Sample(s) received past/too close to holding time expiration.



ACCREDITATIONS & LOCATIONS

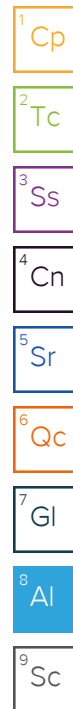
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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

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

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

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



Caerus Oil and Gas

Sample Delivery Group: L1529301
Samples Received: 08/25/2022
Project Number: USA PC F24-6G
Description: USA PC F24-6G Facility Decommissioning
Site: USA PC F24-6G
Report To: Brett Middleton
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:



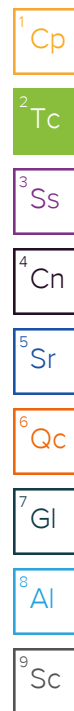
Chris Ward
Project Manager

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

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

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SAMPLE SUMMARY

20220823-F24-6G (BG-SW2) @ 12' L1529301-01 Solid

Collected by
Kevin Fletcher

Collected date/time
08/23/22 14:05

Received date/time
08/25/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1918176	1	08/30/22 23:22	08/30/22 23:22	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1920921	1	09/07/22 17:49	09/09/22 08:14	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1920025	1	09/01/22 16:00	09/01/22 18:00	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1924186	1	09/14/22 08:38	09/16/22 09:10	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1918588	1	08/30/22 15:45	08/31/22 14:16	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1920370	1	09/05/22 08:25	09/08/22 14:08	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1918592	5	08/30/22 15:46	08/31/22 02:03	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1917405	1	08/26/22 16:45	08/28/22 07:42	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1918054	1	08/26/22 16:45	08/29/22 16:59	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1918107	1	08/30/22 07:33	08/30/22 16:28	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1918108	1	08/29/22 13:17	08/29/22 17:39	JMB	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

CASE NARRATIVE

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



Chris Ward
Project Manager



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	10.3		1	08/30/2022 23:22	WG1918176

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	09/09/2022 08:14	WG1920921

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	9.00	T8	1	09/01/2022 18:00	WG1920025

Sample Narrative:

L1529301-01 WG1920025: 9 at 19.8C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	947		10.0	1	09/16/2022 09:10	WG1924186

Sample Narrative:

L1529301-01 WG1924186: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	142		0.500	1	08/31/2022 14:16	WG1918588
Cadmium	ND		0.500	1	08/31/2022 14:16	WG1918588
Copper	7.75		2.00	1	08/31/2022 14:16	WG1918588
Lead	5.72		0.500	1	08/31/2022 14:16	WG1918588
Nickel	13.3		2.00	1	08/31/2022 14:16	WG1918588
Selenium	ND		2.00	1	08/31/2022 14:16	WG1918588
Silver	ND		1.00	1	08/31/2022 14:16	WG1918588
Zinc	27.8		5.00	1	08/31/2022 14:16	WG1918588

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

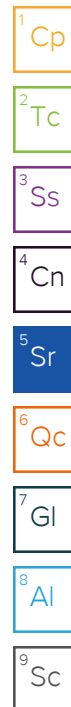
Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.202		0.200	1	09/08/2022 14:08	WG1920370

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	2.77		1.00	5	08/31/2022 02:03	WG1918592

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	08/28/2022 07:42	WG1917405
(S) a,a,a-Trifluorotoluene(FID)	92.1		77.0-120		08/28/2022 07:42	WG1917405



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	08/29/2022 16:59	WG1918054
Toluene	ND		0.00500	1	08/29/2022 16:59	WG1918054
Ethylbenzene	ND		0.00250	1	08/29/2022 16:59	WG1918054
Xylenes, Total	ND		0.00650	1	08/29/2022 16:59	WG1918054
1,2,4-Trimethylbenzene	ND		0.00500	1	08/29/2022 16:59	WG1918054
1,3,5-Trimethylbenzene	ND		0.00500	1	08/29/2022 16:59	WG1918054
(S) Toluene-d8	105		75.0-131		08/29/2022 16:59	WG1918054
(S) 4-Bromofluorobenzene	81.1		67.0-138		08/29/2022 16:59	WG1918054
(S) 1,2-Dichloroethane-d4	99.5		70.0-130		08/29/2022 16:59	WG1918054

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	08/30/2022 16:28	WG1918107
C28-C36 Motor Oil Range	ND		4.00	1	08/30/2022 16:28	WG1918107
(S) o-Terphenyl	53.0		18.0-148		08/30/2022 16:28	WG1918107

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.00600	1	08/29/2022 17:39	WG1918108
Anthracene	ND		0.00600	1	08/29/2022 17:39	WG1918108
Benzo(a)anthracene	ND		0.00600	1	08/29/2022 17:39	WG1918108
Benzo(b)fluoranthene	ND		0.00600	1	08/29/2022 17:39	WG1918108
Benzo(k)fluoranthene	ND		0.00600	1	08/29/2022 17:39	WG1918108
Benzo(a)pyrene	ND		0.00600	1	08/29/2022 17:39	WG1918108
Chrysene	ND		0.00600	1	08/29/2022 17:39	WG1918108
Dibenz(a,h)anthracene	ND		0.00600	1	08/29/2022 17:39	WG1918108
Fluoranthene	ND		0.00600	1	08/29/2022 17:39	WG1918108
Fluorene	ND		0.00600	1	08/29/2022 17:39	WG1918108
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	08/29/2022 17:39	WG1918108
1-Methylnaphthalene	ND		0.0200	1	08/29/2022 17:39	WG1918108
2-Methylnaphthalene	ND		0.0200	1	08/29/2022 17:39	WG1918108
Naphthalene	ND		0.0200	1	08/29/2022 17:39	WG1918108
Pyrene	ND		0.00600	1	08/29/2022 17:39	WG1918108
(S) p-Terphenyl-d14	80.0		23.0-120		08/29/2022 17:39	WG1918108
(S) Nitrobenzene-d5	74.7		14.0-149		08/29/2022 17:39	WG1918108
(S) 2-Fluorobiphenyl	77.2		34.0-125		08/29/2022 17:39	WG1918108

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3836808-1 09/09/22 07:31

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

L1529301-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1529301-01 09/09/22 08:14 • (DUP) R3836808-3 09/09/22 08:19

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

L1529928-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1529928-02 09/09/22 10:30 • (DUP) R3836808-8 09/09/22 10:35

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

Laboratory Control Sample (LCS)

(LCS) R3836808-2 09/09/22 07:38

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	9.81	98.1	80.0-120	

L1529928-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1529928-01 09/09/22 09:27 • (MS) R3836808-4 09/09/22 10:10 • (MSD) R3836808-5 09/09/22 10:15

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Hexavalent Chromium	20.0	ND	14.5	15.5	72.6	77.6	1	75.0-125	J6		6.67	20

L1529928-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1529928-01 09/09/22 09:27 • (MS) R3836808-7 09/09/22 10:25

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	638	ND	762	119	50	75.0-125	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1529291-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1529291-02 09/01/22 18:00 • (DUP) R3833117-2 09/01/22 18:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	pH	su		%		%
pH	7.98	7.95	1	0.377		1

Sample Narrative:

OS: 7.98 at 20.7C

DUP: 7.95 at 20.9C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1529302-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1529302-01 09/01/22 18:00 • (DUP) R3833117-3 09/01/22 18:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	pH	su		%		%
pH	8.61	8.61	1	0.000		1

Sample Narrative:

OS: 8.61 at 20.2C

DUP: 8.61 at 20.3C

Laboratory Control Sample (LCS)

(LCS) R3833117-1 09/01/22 18:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	9.90	99.0	99.0-101	

Sample Narrative:

LCS: 9.9 at 20.9C

Method Blank (MB)

(MB) R3837900-1 09/16/22 09:10

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

L1531542-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1531542-01 09/16/22 09:10 • (DUP) R3837900-3 09/16/22 09:10

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	2100	2100	1	0.000		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1532204-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1532204-02 09/16/22 09:10 • (DUP) R3837900-4 09/16/22 09:10

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	1030	1030	1	0.194		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3837900-2 09/16/22 09:10

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	1120	1060	94.5	85.0-115	

Sample Narrative:

LCS: at 25C



Method Blank (MB)

(MB) R3832626-1 08/31/22 13:29

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) R3832626-2 08/31/22 13:32

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	102	102	80.0-120	
Cadmium	100	98.5	98.5	80.0-120	
Copper	100	99.4	99.4	80.0-120	
Lead	100	98.1	98.1	80.0-120	
Nickel	100	98.4	98.4	80.0-120	
Selenium	100	98.8	98.8	80.0-120	
Silver	20.0	18.5	92.5	80.0-120	
Zinc	100	97.1	97.1	80.0-120	

L1529737-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1529737-04 08/31/22 13:34 • (MS) R3832626-5 08/31/22 13:43 • (MSD) R3832626-6 08/31/22 13:45

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	125	232	214	106	88.2	1	75.0-125			8.06	20
Cadmium	100	ND	90.9	92.0	90.6	91.7	1	75.0-125			1.20	20
Copper	100	10.6	105	104	94.2	93.3	1	75.0-125			0.874	20
Lead	100	13.2	105	104	91.9	91.0	1	75.0-125			0.843	20
Nickel	100	13.9	107	108	93.0	93.7	1	75.0-125			0.696	20
Selenium	100	ND	90.9	92.2	90.9	92.2	1	75.0-125			1.46	20
Silver	20.0	ND	17.1	17.4	85.7	86.9	1	75.0-125			1.42	20
Zinc	100	54.5	135	133	80.6	78.7	1	75.0-125			1.36	20

1

Cp

2

Tc

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Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3835174-1 09/08/22 13:54

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

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

(LCS) R3835174-2 09/08/22 13:57 • (LCSD) R3835174-3 09/08/22 13:59

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	0.984	0.982	98.4	98.2	80.0-120			0.206	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3832320-1 08/31/22 01:03

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) R3832320-2 08/31/22 01:07

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	92.0	92.0	80.0-120	

L1529737-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1529737-04 08/31/22 01:10 • (MS) R3832320-5 08/31/22 01:20 • (MSD) R3832320-6 08/31/22 01:23

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	5.05	85.9	87.1	80.9	82.0	5	75.0-125			1.32	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3832547-2 08/27/22 23:00

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	93.5			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3832547-1 08/27/22 22:03

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.94	108	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			107	77.0-120	

L1528872-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1528872-01 08/27/22 23:21 • (MS) R3832547-3 08/28/22 10:58 • (MSD) R3832547-4 08/28/22 11:19

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 %
TPH (GC/FID) Low Fraction	5.45	0.516	3.10	2.25	47.4	31.5	1	10.0-151		J3	31.8	28
(S) a,a,a-Trifluorotoluene(FID)					87.8	89.5		77.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3832836-2 08/29/22 11:41

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	109			75.0-131
(S) 4-Bromofluorobenzene	80.4			67.0-138
(S) 1,2-Dichloroethane-d4	95.4			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3832836-1 08/29/22 10:23

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.115	92.0	70.0-123	
Toluene	0.125	0.118	94.4	75.0-121	
Ethylbenzene	0.125	0.111	88.8	74.0-126	
Xylenes, Total	0.375	0.313	83.5	72.0-127	
1,2,4-Trimethylbenzene	0.125	0.105	84.0	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.123	98.4	73.0-127	
(S) Toluene-d8			105	75.0-131	
(S) 4-Bromofluorobenzene			75.6	67.0-138	
(S) 1,2-Dichloroethane-d4			105	70.0-130	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3832321-1 08/30/22 12:19

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	57.4			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3832321-2 08/30/22 12:32

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	29.4	58.8	50.0-150	
(S) o-Terphenyl			66.5	18.0-148	

L1529261-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1529261-08 08/30/22 12:59 • (MS) R3832321-3 08/30/22 13:12 • (MSD) R3832321-4 08/30/22 13:31

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	48.8	ND	21.0	31.9	43.0	65.1	1	50.0-150	J6	J3	41.2	20
(S) o-Terphenyl					43.8	59.2		18.0-148				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3832061-2 08/29/22 17:20

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	U		0.00209	0.00600
Anthracene	U		0.00230	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
Naphthalene	U		0.00408	0.0200
Pyrene	U		0.00200	0.00600
(S) p-Terphenyl-d14	87.8			23.0-120
(S) Nitrobenzene-d5	75.8			14.0-149
(S) 2-Fluorobiphenyl	82.0			34.0-125

1
Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

Laboratory Control Sample (LCS)

(LCS) R3832061-1 08/29/22 17:00

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0713	89.1	50.0-120	
Anthracene	0.0800	0.0717	89.6	50.0-126	
Benzo(a)anthracene	0.0800	0.0708	88.5	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0664	83.0	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0658	82.3	49.0-125	
Benzo(a)pyrene	0.0800	0.0583	72.9	42.0-120	
Chrysene	0.0800	0.0700	87.5	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0637	79.6	47.0-125	
Fluoranthene	0.0800	0.0747	93.4	49.0-129	
Fluorene	0.0800	0.0685	85.6	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0678	84.8	46.0-125	
1-Methylnaphthalene	0.0800	0.0698	87.3	51.0-121	
2-Methylnaphthalene	0.0800	0.0724	90.5	50.0-120	
Naphthalene	0.0800	0.0688	86.0	50.0-120	
Pyrene	0.0800	0.0633	79.1	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R3832061-1 08/29/22 17:00

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
(S) p-Terphenyl-d14			94.0	23.0-120	
(S) Nitrobenzene-d5			94.1	14.0-149	
(S) 2-Fluorobiphenyl			94.7	34.0-125	

L1529301-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1529301-01 08/29/22 17:39 • (MS) R3832061-3 08/29/22 17:59 • (MSD) R3832061-4 08/29/22 18:19

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.0784	ND	0.0564	0.0585	71.9	74.6	1	14.0-127			3.66	27
Anthracene	0.0784	ND	0.0571	0.0572	72.8	73.0	1	10.0-145			0.175	30
Benzo(a)anthracene	0.0784	ND	0.0559	0.0563	71.3	71.8	1	10.0-139			0.713	30
Benzo(b)fluoranthene	0.0784	ND	0.0519	0.0527	66.2	67.2	1	10.0-140			1.53	36
Benzo(k)fluoranthene	0.0784	ND	0.0513	0.0527	65.4	67.2	1	10.0-137			2.69	31
Benzo(a)pyrene	0.0784	ND	0.0572	0.0596	73.0	76.0	1	10.0-141			4.11	31
Chrysene	0.0784	ND	0.0552	0.0573	70.4	73.1	1	10.0-145			3.73	30
Dibenz(a,h)anthracene	0.0784	ND	0.0498	0.0530	63.5	67.6	1	10.0-132			6.23	31
Fluoranthene	0.0784	ND	0.0598	0.0588	76.3	75.0	1	10.0-153			1.69	33
Fluorene	0.0784	ND	0.0553	0.0559	70.5	71.3	1	11.0-130			1.08	29
Indeno(1,2,3-cd)pyrene	0.0784	ND	0.0538	0.0554	68.6	70.7	1	10.0-137			2.93	32
1-Methylnaphthalene	0.0784	ND	0.0557	0.0583	71.0	74.4	1	10.0-142			4.56	28
2-Methylnaphthalene	0.0784	ND	0.0575	0.0591	73.3	75.4	1	10.0-137			2.74	28
Naphthalene	0.0784	ND	0.0533	0.0546	68.0	69.6	1	10.0-135			2.41	27
Pyrene	0.0784	ND	0.0505	0.0522	64.4	66.6	1	10.0-148			3.31	35
(S) p-Terphenyl-d14					74.2	76.9		23.0-120				
(S) Nitrobenzene-d5					73.8	75.3		14.0-149				
(S) 2-Fluorobiphenyl					77.4	80.3		34.0-125				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

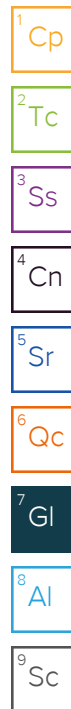
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location.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

Abbreviations and Definitions

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

Qualifier Description

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.
T8	Sample(s) received past/too close to holding time expiration.



ACCREDITATIONS & LOCATIONS

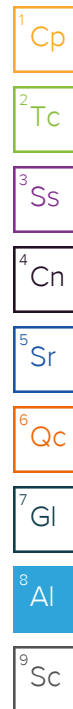
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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

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

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

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



Condition:
NCF / OK

Caerus Oil and Gas

Sample Delivery Group: L1563777
Samples Received: 12/03/2022
Project Number: PCU T14X-13G
Description: PCU T14X-13G (Facility ID:259787)
Site: 259787
Report To: Brett Middleton
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:



Chris Ward
Project Manager

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

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¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

SAMPLE SUMMARY

20221201-PCU T14X-13G (PW) L1563777-01 WW

Collected by
Korey Kennedy

Collected date/time
12/01/22 09:05

Received date/time
12/03/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500H+ B-2011	WG1969368	1	12/06/22 09:53	12/06/22 09:53	KAD	Mt. Juliet, TN

¹Cp ${}^2\text{Tc}$ 3S_1 ${}^4\text{Cn}$ ^5Sr ${}^6\text{Qc}$ ${}^7\text{Gf}$ ${}^8\text{Al}$ ${}^9\text{Sc}$

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: 12/07/22 10:17

Project Narrative

Report reissued to update sample ID



Wet Chemistry by Method 4500H+ B-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	5.86	T8	1	12/06/2022 09:53	WG1969368

Sample Narrative:

L1563777-01 WG1969368: 5.86 at 20C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1563247-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1563247-09 12/06/22 09:53 • (DUP) R3868517-2 12/06/22 09:53

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.64	7.62	1	0.262		1

Sample Narrative:

OS: 7.64 at 20.5C

DUP: 7.62 at 20.3C

L1563794-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1563794-01 12/06/22 09:53 • (DUP) R3868517-3 12/06/22 09:53

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.33	7.30	1	0.410		1

Sample Narrative:

OS: 7.33 at 20.1C

DUP: 7.3 at 20.1C

Laboratory Control Sample (LCS)

(LCS) R3868517-1 12/06/22 09:53

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	9.91	99.1	99.0-101	

Sample Narrative:

LCS: 9.91 at 20.7C



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

Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
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

T8	Sample(s) received past/too close to holding time expiration.
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¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

ACCREDITATIONS & LOCATIONS

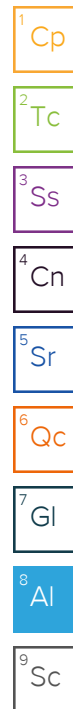
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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

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

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

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



[illegible]

