February 7, 2022

Blair Rollins
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Report of Work Completed – Remedial Investigation

Location Name	DUNN-67S92W /9NWNE (B9E)
COGCC Location ID	334833
COGCC Remediation Project #	19022
Legal Description	NWNE Sec. 9 T7S-R92W
Coordinates (Lat/Long)	39.466700 / -107.668480
County	Garfield

Mr. Rollins,

Confluence Compliance Companies, LLC (Confluence) prepared this Report of Work Completed (ROWC) for Caerus Oil & Gas LLC (Caerus) to document recent investigation activities associated with plans to plug and abandon (P&A) the DUNN 9-1C well at the B9E well pad (Location). The Location is 5.7 miles south-southwest of Silt, Colorado in Garfield County, as illustrated in the attached Topographic Location Map. Additional information on the Location and the associated remediation project is provided in the title block above, the attached Site Diagrams, soil boring logs, and laboratory analytical reports. This ROWC provides background on the Location, methods used to complete the site investigation, results of the investigation, and recommendations for how to proceed with this information.

Background

Prior to initiation of onsite activities, Caerus submitted a COGCC eForm 27 (document # 402722447) to notify the COGCC of planned site investigation activities associated with P&A of the Dunn 9-1C natural gas well and decommissioning of the associated flowline on the Location.

Methodology

On July 14, 2021, Confluence oversaw initial excavation and sampling activities associated with the wellhead abandonment. Investigation activities were directed by Confluence personnel who characterized soil using visual and olfactory observations and field-screened soil samples for volatile organic compounds (VOC) using a photoionization detector (PID). During excavation, historical drill cuttings were encountered. Samples were submitted for laboratory analysis to characterize investigated soil at the Location. P&A activities were postponed pending laboratory results from the characterization samples.

On October 13, 2021, Confluence returned to the Location to delineate pH exceedances observed in the initial characterization samples and complete P&A sampling activities. Using excavation equipment, five potholes were advanced to depths of 6 to 15 feet below ground surface (bgs). Soil was characterized and field screened from each pothole. Samples were collected from the terminus

of each pothole for laboratory analysis. To complete the proposed P&A sampling, one soil sample was collected from soil directly beneath where the abandoned flowline connected to the wellhead. Additionally, background soil samples were collected from comparable nearby non-impacted soil to establish native soil conditions for pH, electrical conductivity (EC), and sodium adsorption ratio (SAR) per Rule 915.e.(2).D.

All investigation soil samples were placed in laboratory provided jars, packed on ice, and shipped for laboratory analysis of constituents listed in COGCC Table 915-1. Sample locations are illustrated in the attached Site Diagram.

Results

These results summarize observations from onsite investigation efforts and associated laboratory analytical results. For organizational and presentation purposes, the results summary is divided between general observations of lithology and hydrogeology for the entire Location and soil boring activities.

Collected spatial data are depicted in the attached Site Diagrams. Laboratory analytical reports are attached and summarized in the Laboratory Results Summary Table.

Lithology and Hydrogeology

Lithology at the Location is characterized by well-drained sandy loam. According to the USGS [1] and NRCS [2], the spill investigation area is found within the Potts loam. Groundwater is expected to flow northeast toward Dry Hollow Creek and ultimately into the Colorado River, located 4.9 miles north of the Location.

Investigation Results

Laboratory results for the P&A and flowline abandonment characterization efforts indicated compliance with all COGCC Table 915-1 analytical constituents except for the following arsenic, pH, and SAR results:

- Arsenic exceedances range from 2.43 milligrams per kilogram (mg/kg) at the wellhead excavation (Base@10') to 49.8 mg/kg at the base of the wellhead excavation at 15 feet bgs.
- pH exceedances range from 8.45 at 15 feet bgs in the wellhead excavation to 10.2 at the base of the wellhead excavation at 15 feet bgs.
- One SAR exceedance was identified in PH_N at 9.93.

Analysis and Recommendations

Although arsenic, pH, and SAR values above COGCC Table 915-1 standards remain within the investigation area, background values and other considerations may allow closure of the project with no additional onsite activities. Confluence recommends the following constituent-specific approaches for this project. Background data collected from the M7E well pad indicates an arsenic concentration of 40.7 mg/kg. Although the M7E is 2.5 miles west of the Location, it is located within the same soil type: Potts loam. Confluence recommends that Caerus request that the COGCC consider this background data as representative of the Location. Based on Footnote 11 of COGCC Table 915-1, Confluence also recommends requesting alternative allowable concentrations for arsenic equivalent to 1.25 times the background concentration of 40.7 mg/kg, which equals 50.89 mg/kg.

Based on these data, laboratory results of final excavation samples indicate COGCC Table 915-1 exceedances of pH and SAR remain in the investigation area. However, Confluence recommends that Caerus request closure of Remediation Project Number 19022 under Rule 915.b based on the depth of potentially impacted soils, moisture regime, and temporal and background conditions at the Location. The presence of these constituents poses no greater concern at this location than naturally occurring challenges to revegetation efforts. A Reclamation Plan will address potential impacts to revegetation efforts and final reclamation success resulting from burial and final onsite disposition of soil with elevated concentrations of designated inorganic constituents of concern that could affect soil suitability for reclamation.

Conclusions

Confluence is grateful for the opportunity to support you with this project. If you have any questions about the methods, results, or recommendations presented here, please do not hesitate to contact me.

Regards,

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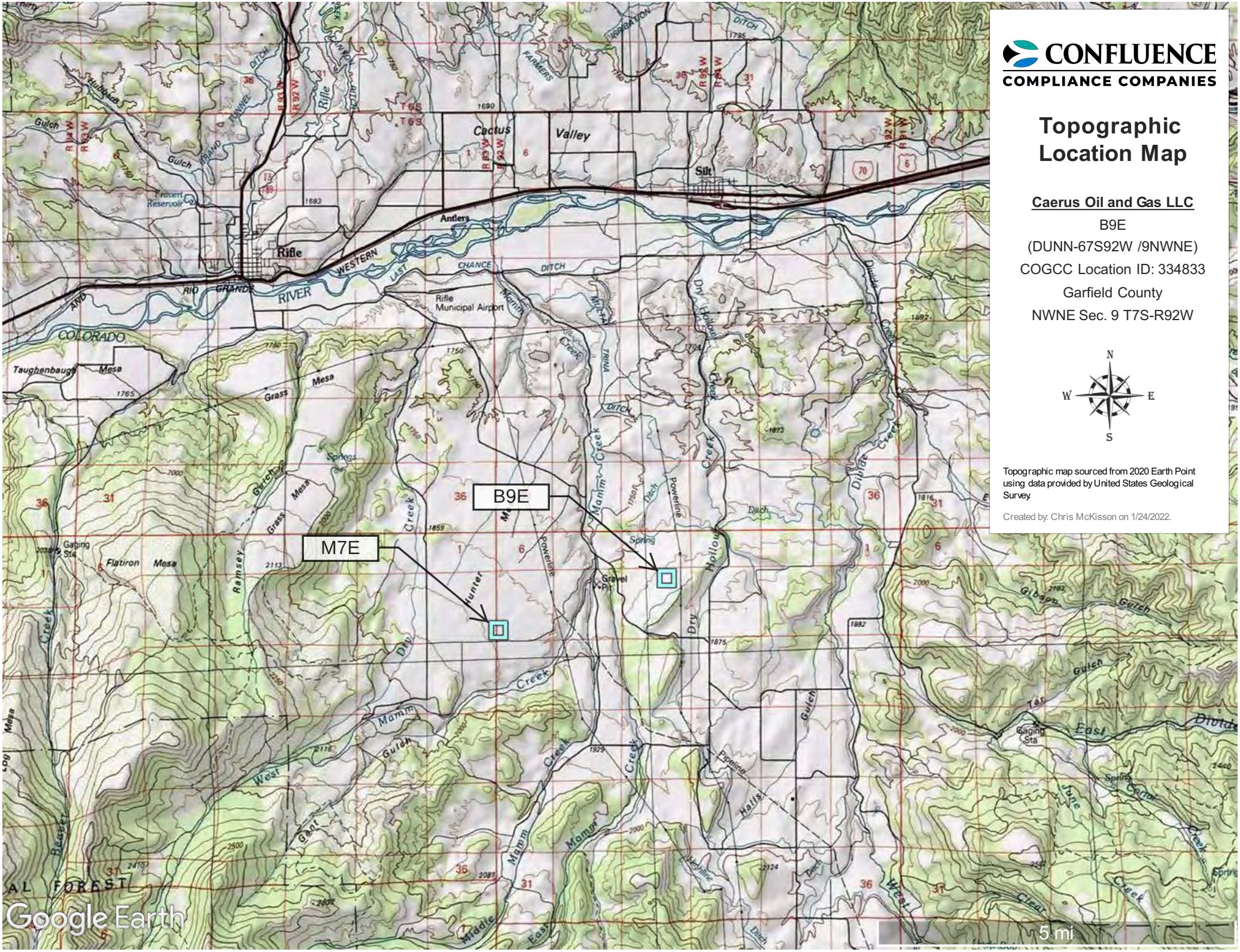
Attachments

- Topographic Location Map
- Site Diagram – Background Samples
- Site Diagram – Investigation Samples
- Laboratory Results Summary Table
- Laboratory Analytical Reports

References

1. USGS Staff, United States Geological Service, United States Department of Interior. National Geologic Map Database. Available online at the following link: https://ngmdb.usgs.gov/Prodesc/proddesc_68589.htm. Accessed [10/29/2021].
2. Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at the following link: http://websoilsurvey.sc.egov.usda.gov/. Accessed [10/29/2021].



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COMPLIANCE COMPANIES

Topographic Location Map

Caerus Oil and Gas LLC

B9E

(DUNN-67S92W /9NWNE)

COGCC Location ID: 334833

Garfield County

NWNE Sec. 9 T7S-R92W

N
W E
S

Topographic map sourced from 2020 Earth Point using data provided by United States Geological Survey

Created by: Chris McKisson on 1/24/2022.

CONFLUENCE
COMPLIANCE COMPANIES

Site Diagram
Background Samples

Caerus Oil and Gas LLC
B9E
(DUNN-67S92W /9NWNE)
COGCC Location ID: 334833
Garfield County
NWNE Sec. 9 T7S-R92W

N
W E
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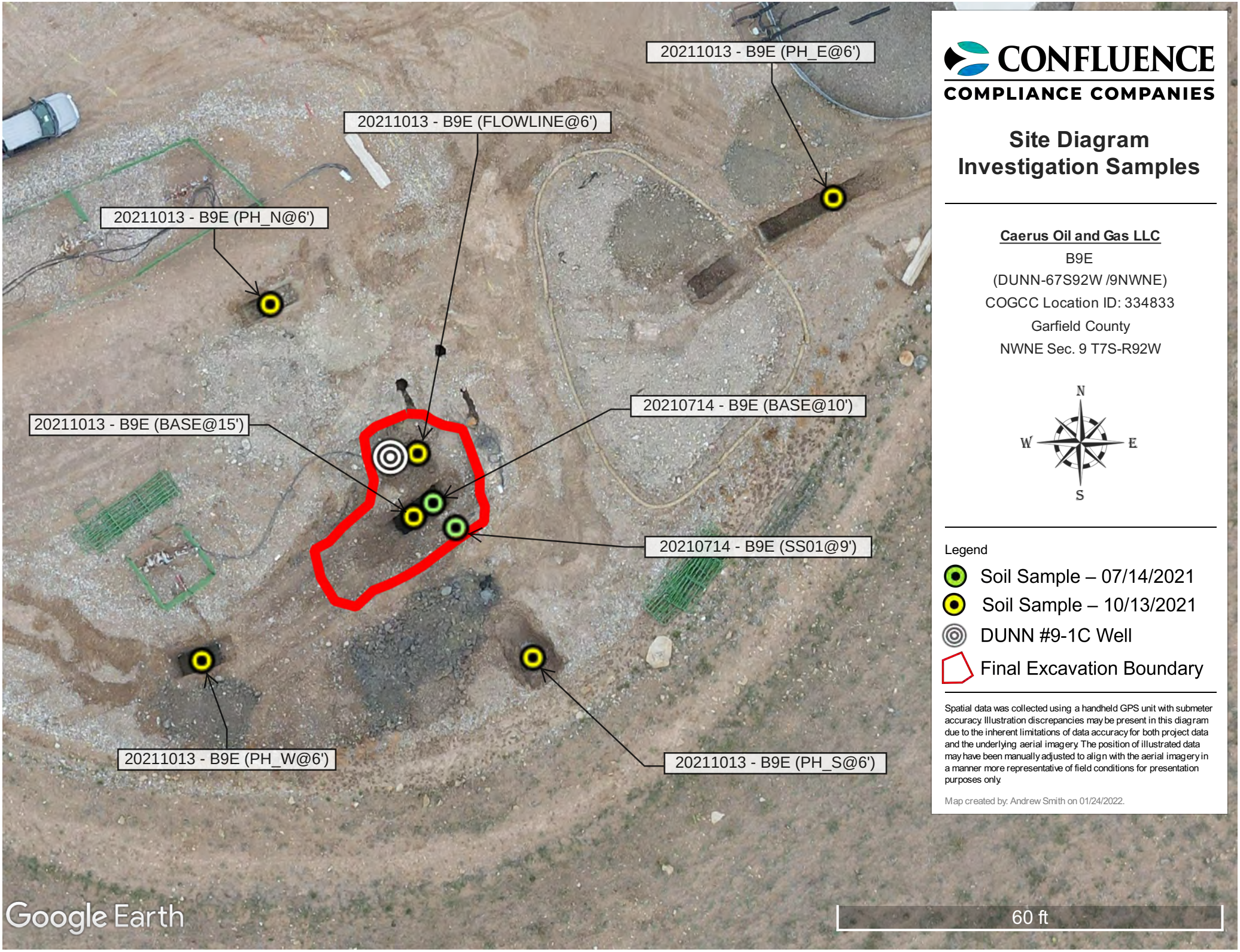
Legend

- Background Sample– 07/14/2021
- Background Sample – 10/13/2021
- Final Excavation Extent – 10/13/2021

Spatial data was collected using a handheld GPS unit with submeter accuracy. Illustration discrepancies may be present in this diagram due to the inherent limitations of data accuracy for both project data and the underlying aerial imagery. The position of illustrated data may have been manually adjusted to align with the aerial imagery in a manner more representative of field conditions for presentation purposes only.

Map created by: Andrew Smith on 10/26/2021.



CONFLUENCE
COMPLIANCE COMPANIES

Site Diagram
Investigation Samples

Caerus Oil and Gas LLC
B9E
(DUNN-67S92W /9NWNE)
COGCC Location ID: 334833
Garfield County
NWNE Sec. 9 T7S-R92W

N
W E
S

Legend

- Soil Sample – 07/14/2021
- Soil Sample – 10/13/2021
- DUNN #9-1C Well
- Final Excavation Boundary

Spatial data was collected using a handheld GPS unit with submeter accuracy. Illustration discrepancies may be present in this diagram due to the inherent limitations of data accuracy for both project data and the underlying aerial imagery. The position of illustrated data may have been manually adjusted to align with the aerial imagery in a manner more representative of field conditions for presentation purposes only.

Map created by: Andrew Smith on 01/24/2022.

CONFLUENCE

Laboratory Results Summary Table - Soil
B9E

1/26/2022

			Soil Screening and Remediation Limits	Organic Compounds (mg/kg [ppm])																			
			COGCC Table 915-1 Residential -->	500	NA	NA	NA	1.2	490	5.8	58	30	27	360	1800	1.1	0.11	1.1	11	110	0.11	240	240
Location	Sample Date	Solid/Soil Source (Equipment) (Vault/Sump, Separator, Tank Battery, Dump Line, Pit, Cuttings, Background, etc.)	Sample ID	TPH (total volatile and extractable petroleum hydrocarbons) (GRO+DRO+ORO)	TPH-GRO (C6-C10) Low Fraction	TPH-DRO (C10-C28) High Fraction	TPH-ORO (C28-C36) High Fraction	Benzene	Toluene	Ethylbenzene	Xylenes - total (sum of o-, m-, p- isomers)	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Acenaphthene	Anthracene	Benzo(A)anthracene	Benzo(A)pyrene	Benzo(B)fluoranthene	Benzo(K)fluoranthene	Chrysene	Dibenzo(A,H)anthracene	Fluoranthene	Fluorene
B9E	7/14/2021	Historical Pit	20210714-B9E (SS01@9')	129.17	7.63	113	8.54	0.0322	0.00413	0.0304	0.390	0.402	0.227	<0.00600	0.118	0.0163	<0.00600	<0.00600	<0.00600	0.0224	<0.00600	0.116	0.491
B9E	7/14/2021	Historical Pit	20210714-B9E (BASE@10')	16.55	0.142	5.41	11.00	0.00113	<0.00500	0.00113	0.0027	<0.0050	<0.0050	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
B9E	10/13/2021	Historical Pit	20211013-B9E (PH_N@6')	0.618	0.0409	<4.00	0.577	<0.00100	<0.00500	<0.00250	<0.00650	<0.00500	<0.00500	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
B9E	10/13/2021	Historical Pit	20211013-B9E (PH_W@6')	24.1	0.0637	11.4	12.6	<0.00100	<0.00500	<0.00250	<0.00650	<0.00500	<0.00500	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	0.00322
B9E	10/13/2021	Historical Pit	20211013-B9E (BASE@15')	4.39	<0.100	1.80	2.59	<0.00100	<0.00500	<0.00250	<0.00650	<0.00500	<0.00500	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
B9E	10/13/2021	Historical Pit	20211013-B9E (PH_S@6')	256	0.359	129	127	0.000668	0.00161	<0.00250	0.00656	0.00832	0.00403	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	0.00811
B9E	10/13/2021	Historical Pit	20211013-B9E (PH_E@6')	41.7	0.0318	15.8	25.9	<0.00100	<0.00500	<0.00250	<0.00650	<0.00500	<0.00500	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
B9E	10/13/2021	Flowline	20211013-B9E (Flowline@6')	88.4	0.0371	46.8	41.6	<0.00100	<0.00500	<0.00250	0.0020	<0.00500	<0.00500	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
B9E	7/14/2021	Background	20210714-B9E (BGN@3')	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B9E	7/14/2021	Background	20210714-B9E (BGW@1')	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B9E	7/14/2021	Background	20210714-B9E (BGS@2')	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B9E	7/14/2021	Background	20210714-B9E (BGE@8")	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B9E	10/13/2021	Background	20211013-B9E (BGE2@1.5')	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B9E	10/13/2021	Background	20211013-B9E (BGE3@2')	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	111313-M7E (BGSW)-A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	111313-M7E (BGSW)-B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	111313-M7E (BGSW)-C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	111313-M7E (BGSW)-D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	111313-M7E (BGSW)-E	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	111313-M7E (BGW)-A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	111313-M7E (BGW)-B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	111313-M7E (BGW)-C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	111313-M7E (BGW)-D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	111313-M7E (BGW)-E	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	111313-M7E (BGMID)-A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	111313-M7E (BGMID)-B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	111313-M7E (BGMID)-C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	111313-M7E (BGMID)-D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	111313-M7E (BGMID)-E	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	111313-M7E (BGE)-A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	111313-M7E (BGE)-B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	111313-M7E (BGE)-C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	111313-M7E (BGE)-D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	111313-M7E (BGE)-E	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	111313-M7E (BGN)-A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	111313-M7E (BGN)-B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	111313-M7E (BGN)-C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	111313-M7E (BGN)-D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	111313-M7E (BGN)-E	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Orange Fill = Exceedance
Dark Gray Italics = Below Reporting Detection Limit (RDL)
"NA" = Not Analyzed
mg/kg = milligrams per kilogram / parts per million

CONFLUENCE

Laboratory Results Summary Table - Soil
B9E

1/26/2022

Soil Screening and Remediation Limits											Soil Suitability for Reclamation				Metals (mg/kg [ppm])								
COGCC Table 915-1 Residential -->				1.1	18	24	2	180	4	6	6-8.3	2	0.68	15000	71	0.3	3100	400	1500	390	390	23000
Location	Sample Date	Solid/Soil Source (Equipment) [Vault/Sump, Separator, Tank Battery, Dump Line, Pit, Cuttings, Background, etc.]	Sample ID	Indeno(1,2,3,C,D)pyrene	1- Methylnaphthalene	2- Methylnaphthalene	Naphthalene	Pyrene	EC (Specific Conductance) (millimhos/centimeter) (by saturated paste method)	SAR (Sodium Adsorption Ratio) (calculation) (by saturated paste method)	pH (pH Units) (by saturated paste method)	Boron - Hot Water Soluble (mg/L)	Arsenic	Barium	Cadmium (mg/kg)	Chromium (VI)	Copper	Lead	Nickel	Selenium	Silver	Zinc
B9E	7/14/2021	Historical Pit	**20210714-B9E (SS01@9')**	<0.00600	**2.02**	**2.97**	**0.371**	**0.314**	**1.210**	**5.43**	**9.67**	**0.800**	**2.52**	**14300**	<2.50	<1.00	**15.4**	**15.7**	**9.67**	**1.84**	<1.00	**86.2**
B9E	7/14/2021	Historical Pit	**20210714-B9E (BASE@10')**	<0.00600	<0.0200	<0.0200	<0.0200	<0.0200	**0.417**	**3.90**	**10.2**	**0.415**	**2.43**	**176**	**0.243**	<1.00	**10.2**	**7.28**	**15.5**	<2.00	<1.00	**46.3**
B9E	10/13/2021	Historical Pit	**20211013-B9E (PH_N@6')**	<0.00600	<0.0200	<0.0200	<0.0200	<0.0200	**0.778**	**9.93**	**9.12**	**0.438**	**2.57**	**494**	**0.253**	<1.00	**8.73**	**8.75**	**11.5**	<2.00	<1.00	**39.1**
B9E	10/13/2021	Historical Pit	**20211013-B9E (PH_W@6')**	<0.00600	**0.0143**	**0.0308**	**0.00917**	**0.00449**	**0.757**	**3.93**	**8.08**	**0.504**	**9.65**	**1330**	**0.0563**	<1.00	**9.66**	**11.2**	**7.30**	<2.00	<1.00	**33.1**
B9E	10/13/2021	Historical Pit	**20211013-B9E (BASE@15')**	<0.00600	<0.0200	<0.0200	<0.0200	<0.0200	**0.560**	**3.73**	**8.45**	**1.28**	**49.8**	**186**	**0.553**	<1.00	**28.7**	**39.7**	**13.5**	**1.72**	<1.00	**57.3**
B9E	10/13/2021	Historical Pit	**20211013-B9E (PH_S@6')**	<0.00600	**0.0235**	**0.0383**	**0.00910**	**0.00373**	**0.561**	**2.44**	**9.06**	**0.450**	**6.61**	**2870**	<0.0500	<1.00	**8.98**	**10.5**	**6.65**	**1.15**	<1.00	**29.7**
B9E	10/13/2021	Historical Pit	**20211013-B9E (PH_E@6')**	<0.00600	<0.0200	**0.00511**	<0.0200	<0.0200	**1.130**	**1.96**	**8.11**	**0.518**	**10.5**	**2300**	<0.0500	<1.00	**8.04**	**9.68**	**6.55**	<2.00	<1.00	**26.4**
B9E	10/13/2021	Flowline	**20211013-B9E (Flowline@6')**	<0.00600	<0.00600	<0.0200	<0.0200	<0.0200	**0.689**	**2.38**	**7.84**	**0.485**	**6.15**	**483**	**0.185**	<1.00	**10.3**	**7.57**	**8.84**	<2.00	<1.00	**25.8**
B9E	7/14/2021	Background	**20210714-B9E (BGN@3')**	NA	NA	NA	NA	NA	**0.241**	**0.508**	**8.28**	NA	**4.87**	NA	NA	NA	NA	NA	NA	NA	NA	NA
B9E	7/14/2021	Background	**20210714-B9E (BGW@1')**	NA	NA	NA	NA	NA	**0.295**	**0.269**	**8.07**	NA	**4.69**	NA	NA	NA	NA	NA	NA	NA	NA	NA
B9E	7/14/2021	Background	**20210714-B9E (BGS@2')**	NA	NA	NA	NA	NA	**0.283**	**0.103**	**8.12**	NA	**5.94**	NA	NA	NA	NA	NA	NA	NA	NA	NA
B9E	7/14/2021	Background	**20210714-B9E (BGE@8")**	NA	NA	NA	NA	NA	**0.317**	**0.0660**	**8.20**	NA	**6.23**	NA	NA	NA	NA	NA	NA	NA	NA	NA
B9E	10/13/2021	Background	**20211013-B9E (BGE2@1.5')**	NA	NA	NA	NA	NA	**2.620**	**0.527**	**9.21**	NA	**3.78**	NA	NA	NA	NA	NA	NA	NA	NA	NA
B9E	10/13/2021	Background	**20211013-B9E (BGE3@2')**	NA	NA	NA	NA	NA	**0.598**	**0.321**	**9.50**	NA	**1.85**	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	**111313-M7E (BGSW)-A**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.05**	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	**111313-M7E (BGSW)-B**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.02**	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	**111313-M7E (BGSW)-C**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.93**	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	**111313-M7E (BGSW)-D**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.98**	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	**111313-M7E (BGSW)-E**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.21**	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	**111313-M7E (BGW)-A**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.87**	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	**111313-M7E (BGW)-B**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.98**	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	**111313-M7E (BGW)-C**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.06**	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	**111313-M7E (BGW)-D**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.97**	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	**111313-M7E (BGW)-E**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.07**	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	**111313-M7E (BGMID)-A**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.27**	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	**111313-M7E (BGMID)-B**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.16**	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	**111313-M7E (BGMID)-C**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.99**	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	**111313-M7E (BGMID)-D**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.97**	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	**111313-M7E (BGMID)-E**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.36**	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	**111313-M7E (BGE)-A**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.97**	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	**111313-M7E (BGE)-B**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**3.41**	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	**111313-M7E (BGE)-C**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**3.46**	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	**111313-M7E (BGE)-D**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**4.19**	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	**111313-M7E (BGE)-E**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**4.60**	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	**111313-M7E (BGN)-A**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**5.47**	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	**111313-M7E (BGN)-B**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**5.16**	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	**111313-M7E (BGN)-C**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**5.05**	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	**111313-M7E (BGN)-D**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**40.7**	NA	NA	NA	NA	NA	NA	NA	NA	NA
M7E	11/13/2013	Background	**111313-M7E (BGN)-E**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**5.12**	NA	NA	NA	NA	NA	NA	NA	NA	NA

Confluence Compliance Companies, LLC
info@confluence-cc.com

Orange Fill = Exceedance
Dark Gray Italics = Below Reporting Detection Limit (RDL)
"NA" = Not Analyzed
mg/kg = milligrams per kilogram / parts per million

ANALYTICAL REPORT

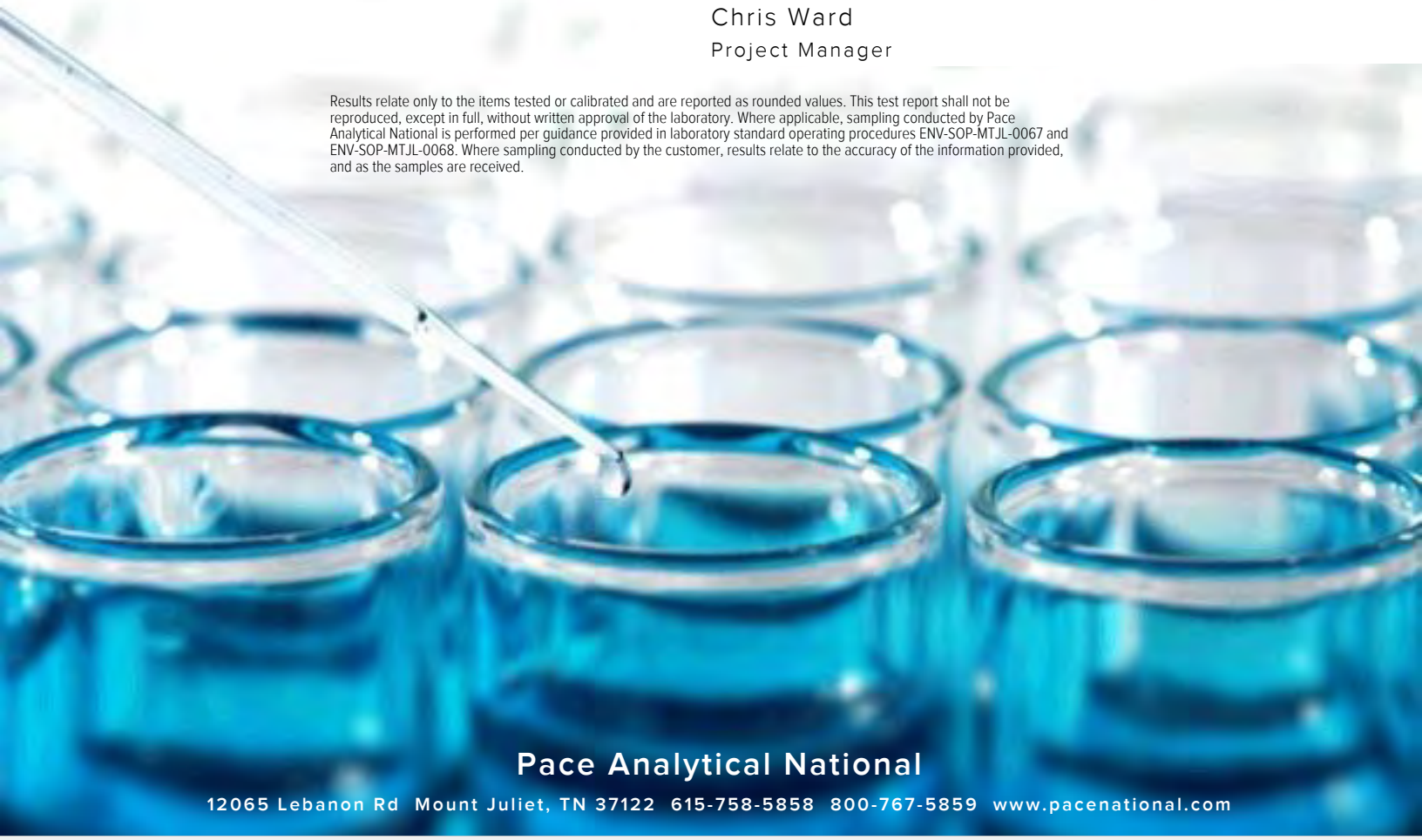
July 26, 2021

Caerus Oil and Gas

Sample Delivery Group:	L1378744
Samples Received:	07/15/2021
Project Number:	
Description:	B9E P&A
Site:	COG-0117
Report To:	Brett Middleton 143 Diamond Avenue Parachute, CO 81635

Entire Report Reviewed By: Chris Ward

Chris Ward
Project Manager



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

TABLE OF CONTENTS

20210714-B9E (BASE@10') L1378744-01 Solid

Collected by: Andrew Smith
Collected date/time: 07/14/21 08:40
Received date/time: 07/15/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1707577	1	07/24/21 18:54	07/24/21 18:54	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1707677	1	07/20/21 10:58	07/21/21 16:09	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1707432	1	07/19/21 14:47	07/19/21 17:42	KAB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1708162	1	07/21/21 11:26	07/21/21 14:54	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1706953	1	07/19/21 06:43	07/20/21 22:24	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1707906	5	07/22/21 16:32	07/24/21 20:20	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1706954	5	07/19/21 06:38	07/19/21 22:36	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1707036	1	07/15/21 20:38	07/17/21 16:43	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1706774	1	07/15/21 20:38	07/16/21 21:07	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1708808	1	07/23/21 02:58	07/23/21 11:55	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1708860	1	07/21/21 14:19	07/21/21 18:51	AAT	Mt. Juliet, TN

20210714-B9E (SS01@9') L1378744-02 Solid

Collected by: Andrew Smith
Collected date/time: 07/14/21 08:50
Received date/time: 07/15/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1707577	1	07/24/21 18:56	07/24/21 18:56	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1707677	1	07/20/21 10:58	07/21/21 16:15	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1707432	1	07/19/21 14:47	07/19/21 17:42	KAB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1708162	1	07/21/21 11:26	07/21/21 14:54	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1706953	1	07/19/21 06:43	07/20/21 22:27	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1706953	5	07/19/21 06:43	07/21/21 08:26	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1707906	5	07/22/21 16:32	07/24/21 20:22	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1706954	5	07/19/21 06:38	07/19/21 22:39	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1707036	1	07/15/21 20:38	07/17/21 17:05	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1706774	1	07/15/21 20:38	07/16/21 21:28	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1708808	1	07/23/21 02:58	07/23/21 12:08	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1708860	1	07/21/21 14:19	07/21/21 19:08	AAT	Mt. Juliet, TN

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 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	3.90		1	07/24/2021 18:54	WG1707577

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	07/21/2021 16:09	WG1707677

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	10.2	T8	1	07/19/2021 17:42	WG1707432

Sample Narrative:

L1378744-01 WG1707432: 10.24 at 22.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	417		10.0	1	07/21/2021 14:54	WG1708162

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	176		0.0852	0.500	1	07/20/2021 22:24	WG1706953
Cadmium	0.243	J	0.0471	0.500	1	07/20/2021 22:24	WG1706953
Copper	10.2		0.400	2.00	1	07/20/2021 22:24	WG1706953
Lead	7.28		0.208	0.500	1	07/20/2021 22:24	WG1706953
Nickel	15.5		0.132	2.00	1	07/20/2021 22:24	WG1706953
Selenium	U		0.764	2.00	1	07/20/2021 22:24	WG1706953
Silver	U		0.127	1.00	1	07/20/2021 22:24	WG1706953
Zinc	46.3		0.832	5.00	1	07/20/2021 22:24	WG1706953

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.415	J	0.0835	1.00	5	07/24/2021 20:20	WG1707906

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.43		0.100	1.00	5	07/19/2021 22:36	WG1706954

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	0.142		0.0217	0.100	1	07/17/2021 16:43	WG1707036
(S) a,a,a-Trifluorotoluene(FID)	*98.5*			*77.0-120*		*07/17/2021 16:43*	WG1707036

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	0.00113		0.000467	0.00100	1	07/16/2021 21:07	WG1706774
Toluene	U		0.00130	0.00500	1	07/16/2021 21:07	WG1706774
Ethylbenzene	0.00113	J	0.000737	0.00250	1	07/16/2021 21:07	WG1706774
Xylenes, Total	0.00270	J	0.000880	0.00650	1	07/16/2021 21:07	WG1706774
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/16/2021 21:07	WG1706774
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/16/2021 21:07	WG1706774
(S) Toluene-d8	*101*			*75.0-131*		*07/16/2021 21:07*	WG1706774
(S) 4-Bromofluorobenzene	*89.1*			*67.0-138*		*07/16/2021 21:07*	WG1706774
(S) 1,2-Dichloroethane-d4	*103*			*70.0-130*		*07/16/2021 21:07*	WG1706774

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	5.41		1.61	4.00	1	07/23/2021 11:55	WG1708808
C28-C36 Motor Oil Range	11.0		0.274	4.00	1	07/23/2021 11:55	WG1708808
(S) o-Terphenyl	*51.5*			*18.0-148*		*07/23/2021 11:55*	WG1708808

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	07/21/2021 18:51	WG1708860
Acenaphthene	U		0.00209	0.00600	1	07/21/2021 18:51	WG1708860
Acenaphthylene	U		0.00216	0.00600	1	07/21/2021 18:51	WG1708860
Benzo(a)anthracene	U		0.00173	0.00600	1	07/21/2021 18:51	WG1708860
Benzo(a)pyrene	U		0.00179	0.00600	1	07/21/2021 18:51	WG1708860
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/21/2021 18:51	WG1708860
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	07/21/2021 18:51	WG1708860
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/21/2021 18:51	WG1708860
Chrysene	U		0.00232	0.00600	1	07/21/2021 18:51	WG1708860
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/21/2021 18:51	WG1708860
Fluoranthene	U		0.00227	0.00600	1	07/21/2021 18:51	WG1708860
Fluorene	U		0.00205	0.00600	1	07/21/2021 18:51	WG1708860
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/21/2021 18:51	WG1708860
Naphthalene	U		0.00408	0.0200	1	07/21/2021 18:51	WG1708860
Phenanthrene	0.00357	J	0.00231	0.00600	1	07/21/2021 18:51	WG1708860
Pyrene	U		0.00200	0.00600	1	07/21/2021 18:51	WG1708860
1-Methylnaphthalene	U		0.00449	0.0200	1	07/21/2021 18:51	WG1708860
2-Methylnaphthalene	U		0.00427	0.0200	1	07/21/2021 18:51	WG1708860
2-Chloronaphthalene	U		0.00466	0.0200	1	07/21/2021 18:51	WG1708860
(S) p-Terphenyl-d14	*100*			*23.0-120*		*07/21/2021 18:51*	WG1708860
(S) Nitrobenzene-d5	*72.6*			*14.0-149*		*07/21/2021 18:51*	WG1708860
(S) 2-Fluorobiphenyl	*77.1*			*34.0-125*		*07/21/2021 18:51*	WG1708860

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	5.43		1	07/24/2021 18:56	WG1707577

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	07/21/2021 16:15	WG1707677

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	9.67	T8	1	07/19/2021 17:42	WG1707432

Sample Narrative:

L1378744-02 WG1707432: 9.67 at 22.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	1210		10.0	1	07/21/2021 14:54	WG1708162

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	14300		0.426	2.50	5	07/21/2021 08:26	WG1706953
Cadmium	U		0.236	2.50	5	07/21/2021 08:26	WG1706953
Copper	15.4		0.400	2.00	1	07/20/2021 22:27	WG1706953
Lead	15.7		0.208	0.500	1	07/20/2021 22:27	WG1706953
Nickel	9.67		0.132	2.00	1	07/20/2021 22:27	WG1706953
Selenium	1.84	J	0.764	2.00	1	07/20/2021 22:27	WG1706953
Silver	U		0.127	1.00	1	07/20/2021 22:27	WG1706953
Zinc	86.2		0.832	5.00	1	07/20/2021 22:27	WG1706953

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.800	J	0.0835	1.00	5	07/24/2021 20:22	WG1707906

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.52		0.100	1.00	5	07/19/2021 22:39	WG1706954

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	7.63		0.0217	0.100	1	07/17/2021 17:05	WG1707036
(S) a,a,a-Trifluorotoluene(FID)	*81.7*			*77.0-120*		*07/17/2021 17:05*	WG1707036

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	0.0322		0.000467	0.00100	1	07/16/2021 21:28	WG1706774
Toluene	0.00413	J	0.00130	0.00500	1	07/16/2021 21:28	WG1706774
Ethylbenzene	0.0304		0.000737	0.00250	1	07/16/2021 21:28	WG1706774
Xylenes, Total	0.390		0.000880	0.00650	1	07/16/2021 21:28	WG1706774
1,2,4-Trimethylbenzene	0.402		0.00158	0.00500	1	07/16/2021 21:28	WG1706774
1,3,5-Trimethylbenzene	0.227		0.00200	0.00500	1	07/16/2021 21:28	WG1706774
(S) Toluene-d8	*105*			*75.0-131*		*07/16/2021 21:28*	WG1706774
(S) 4-Bromofluorobenzene	*118*			*67.0-138*		*07/16/2021 21:28*	WG1706774
(S) 1,2-Dichloroethane-d4	*102*			*70.0-130*		*07/16/2021 21:28*	WG1706774

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	113		1.61	4.00	1	07/23/2021 12:08	WG1708808
C28-C36 Motor Oil Range	8.54		0.274	4.00	1	07/23/2021 12:08	WG1708808
(S) o-Terphenyl	*70.8*			*18.0-148*		*07/23/2021 12:08*	WG1708808

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	0.118		0.00230	0.00600	1	07/21/2021 19:08	WG1708860
Acenaphthene	0.377		0.00209	0.00600	1	07/21/2021 19:08	WG1708860
Acenaphthylene	U		0.00216	0.00600	1	07/21/2021 19:08	WG1708860
Benzo(a)anthracene	0.0163		0.00173	0.00600	1	07/21/2021 19:08	WG1708860
Benzo(a)pyrene	U		0.00179	0.00600	1	07/21/2021 19:08	WG1708860
Benzo(b)fluoranthene	0.00300	J	0.00153	0.00600	1	07/21/2021 19:08	WG1708860
Benzo(g,h,i)perylene	0.00326	J	0.00177	0.00600	1	07/21/2021 19:08	WG1708860
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/21/2021 19:08	WG1708860
Chrysene	0.0224		0.00232	0.00600	1	07/21/2021 19:08	WG1708860
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/21/2021 19:08	WG1708860
Fluoranthene	0.116		0.00227	0.00600	1	07/21/2021 19:08	WG1708860
Fluorene	0.491		0.00205	0.00600	1	07/21/2021 19:08	WG1708860
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/21/2021 19:08	WG1708860
Naphthalene	0.371		0.00408	0.0200	1	07/21/2021 19:08	WG1708860
Phenanthrene	2.64		0.00231	0.00600	1	07/21/2021 19:08	WG1708860
Pyrene	0.314		0.00200	0.00600	1	07/21/2021 19:08	WG1708860
1-Methylnaphthalene	2.02		0.00449	0.0200	1	07/21/2021 19:08	WG1708860
2-Methylnaphthalene	2.97		0.00427	0.0200	1	07/21/2021 19:08	WG1708860
2-Chloronaphthalene	U		0.00466	0.0200	1	07/21/2021 19:08	WG1708860
(S) p-Terphenyl-d14	*103*			*23.0-120*		*07/21/2021 19:08*	WG1708860
(S) Nitrobenzene-d5	*99.4*			*14.0-149*		*07/21/2021 19:08*	WG1708860
(S) 2-Fluorobiphenyl	*59.4*			*34.0-125*		*07/21/2021 19:08*	WG1708860

Method Blank (MB)

(MB) R3682221-1 07/21/21 11:57

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

L1378541-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1378541-01 07/21/21 15:23 • (DUP) R3682221-3 07/21/21 15:28

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

Laboratory Control Sample (LCS)

(LCS) R3682221-2 07/21/21 12:02

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	10.0	10.4	104	80.0-120	

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

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

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.88	7.92	1	0.506		1

Sample Narrative:

OS: 7.88 at 22.6C

DUP: 7.92 at 22.7C

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

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

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	10.2	10.2	1	0.0977		1

Sample Narrative:

OS: 10.24 at 22.5C

DUP: 10.23 at 22.5C

Laboratory Control Sample (LCS)

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

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

Sample Narrative:

LCS: 10.05 at 22.6C

Method Blank (MB)

(MB) R3682230-1 07/21/21 14:54

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

L1378762-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1378762-04 07/21/21 14:54 • (DUP) R3682230-3 07/21/21 14:54

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	283	260	1	8.58		20

L1379873-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1379873-09 07/21/21 14:54 • (DUP) R3682230-4 07/21/21 14:54

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	84.8	88.4	1	4.16		20

Laboratory Control Sample (LCS)

(LCS) R3682230-2 07/21/21 14:54

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	899	904	101	85.0-115	

Method Blank (MB)

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

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Barium	U		0.0852	0.500
Cadmium	U		0.0471	0.500
Copper	U		0.400	2.00
Lead	0.328	J	0.208	0.500
Nickel	U		0.132	2.00
Selenium	U		0.764	2.00
Silver	U		0.127	1.00
Zinc	U		0.832	5.00

Laboratory Control Sample (LCS)

(LCS) R3681881-2 07/20/21 21:41

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

Method Blank (MB)

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

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

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

QUALITY CONTROL SUMMARY

L1378744-01,02

Method Blank (MB)

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

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

Laboratory Control Sample (LCS)

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

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

Method Blank (MB)

(MB) R3681896-2 07/17/21 15:38

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)	*106*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3681896-1 07/17/21 14:55

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.65	84.5	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*94.7*	*77.0-120*	

Method Blank (MB)

(MB) R3682657-3 07/16/21 15:19

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*95.9*			*75.0-131*
(S) 4-Bromofluorobenzene	*85.8*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*96.1*			*70.0-130*

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

(LCS) R3682657-1 07/16/21 13:55 • (LCSD) R3682657-2 07/16/21 14:16

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.129	0.123	103	98.4	70.0-123			4.76	20
Ethylbenzene	0.125	0.117	0.118	93.6	94.4	74.0-126			0.851	20
Toluene	0.125	0.121	0.112	96.8	89.6	75.0-121			7.73	20
1,2,4-Trimethylbenzene	0.125	0.122	0.118	97.6	94.4	70.0-126			3.33	20
1,3,5-Trimethylbenzene	0.125	0.119	0.108	95.2	86.4	73.0-127			9.69	20
Xylenes, Total	0.375	0.357	0.358	95.2	95.5	72.0-127			0.280	20
(S) Toluene-d8				*94.1*	*89.0*	*75.0-131*				
(S) 4-Bromofluorobenzene				*83.7*	*96.9*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*105*	*106*	*70.0-130*				

Method Blank (MB)

(MB) R3683263-1 07/23/21 09:30

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	*56.8*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3683263-2 07/23/21 09:43

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	37.2	74.4	50.0-150	
(S) o-Terphenyl			*80.8*	*18.0-148*	

Method Blank (MB)

(MB) R3682508-2 07/21/21 18:33

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) Nitrobenzene-d5	*77.7*			*14.0-149*
(S) 2-Fluorobiphenyl	*86.2*			*34.0-125*
(S) p-Terphenyl-d14	*121*	J1		*23.0-120*

Laboratory Control Sample (LCS)

(LCS) R3682508-1 07/21/21 18:16

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0640	80.0	50.0-126	
Acenaphthene	0.0800	0.0662	82.8	50.0-120	
Acenaphthylene	0.0800	0.0663	82.9	50.0-120	
Benzo(a)anthracene	0.0800	0.0668	83.5	45.0-120	
Benzo(a)pyrene	0.0800	0.0512	64.0	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0764	95.5	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0674	84.3	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0713	89.1	49.0-125	
Chrysene	0.0800	0.0700	87.5	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0678	84.8	47.0-125	
Fluoranthene	0.0800	0.0659	82.4	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3682508-1 07/21/21 18:16

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0672	84.0	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0644	80.5	46.0-125	
Naphthalene	0.0800	0.0659	82.4	50.0-120	
Phenanthrene	0.0800	0.0691	86.4	47.0-120	
Pyrene	0.0800	0.0737	92.1	43.0-123	
1-Methylnaphthalene	0.0800	0.0665	83.1	51.0-121	
2-Methylnaphthalene	0.0800	0.0649	81.1	50.0-120	
2-Chloronaphthalene	0.0800	0.0672	84.0	50.0-120	
(S) Nitrobenzene-d5			*83.9*	*14.0-149*	
(S) 2-Fluorobiphenyl			*86.9*	*34.0-125*	
(S) p-Terphenyl-d14			*116*	*23.0-120*	

L1378925-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1378925-13 07/22/21 03:53 • (MS) R3682508-3 07/22/21 04:10 • (MSD) R3682508-4 07/22/21 04:28

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0792	0.0189	0.0443	0.0523	55.9	66.4	5	10.0-145			16.6	30
Acenaphthene	0.0792	0.0429	0.0640	0.0779	26.6	44.4	5	14.0-127			19.6	27
Acenaphthylene	0.0792	U	0.0327	0.0356	41.3	45.2	5	21.0-124			8.49	25
Benzo(a)anthracene	0.0792	0.102	0.145	0.173	54.3	90.1	5	10.0-139			17.6	30
Benzo(a)pyrene	0.0792	0.0642	0.141	0.179	97.0	146	5	10.0-141		J5	23.8	31
Benzo(b)fluoranthene	0.0792	0.110	0.178	0.224	85.9	145	5	10.0-140		J5	22.9	36
Benzo(g,h,i)perylene	0.0792	0.0891	0.144	0.179	69.3	114	5	10.0-140			21.7	33
Benzo(k)fluoranthene	0.0792	0.0154	0.0511	0.0627	64.5	79.6	5	10.0-137			20.4	31
Chrysene	0.0792	0.190	0.270	0.311	101	154	5	10.0-145		J5	14.1	30
Dibenz(a,h)anthracene	0.0792	0.0346	0.0641	0.0642	37.2	37.6	5	10.0-132			0.156	31
Fluoranthene	0.0792	0.137	0.223	0.252	109	146	5	10.0-153			12.2	33
Fluorene	0.0792	0.0662	0.106	0.116	50.3	63.2	5	11.0-130			9.01	29
Indeno(1,2,3-cd)pyrene	0.0792	0.0415	0.106	0.131	81.4	114	5	10.0-137			21.1	32
Naphthalene	0.0792	0.268	0.230	0.214	0.000	0.000	5	10.0-135	J6	J6	7.21	27
Phenanthrene	0.0792	0.399	0.388	0.376	0.000	0.000	5	10.0-144	V	V	3.14	31
Pyrene	0.0792	0.258	0.275	0.325	21.5	85.0	5	10.0-148			16.7	35
1-Methylnaphthalene	0.0792	0.136	0.136	0.125	0.000	0.000	5	10.0-142	J6	J6	8.43	28
2-Methylnaphthalene	0.0792	0.129	0.113	0.105	0.000	0.000	5	10.0-137	J6	J6	7.34	28
2-Chloronaphthalene	0.0792	U	0.0244	0.0256	29.2	30.9	5	29.0-120			4.80	24
(S) Nitrobenzene-d5					*41.4*	*0.000*		*14.0-149*		J2		
(S) 2-Fluorobiphenyl					*37.5*	*32.4*		*34.0-125*		J2		
(S) p-Terphenyl-d14					*44.4*	*46.2*		*23.0-120*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

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

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

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf
Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here: E215

ALL BOLD OUTLINED AREAS are for LAB USE ONLY

Company: Caerus Oil and Gas LLC	Billing Information: Info on file
Address: Info on file	
Report To: Jake Janicek, Brett Middleton, Blair Rollins	Email To: Info on file
Copy To: Chris McKisson, remediation@confluence-cc.com	Site Collection Info/Address:
Customer Project Name/Number: B9E P&A	State: / County/City: Time Zone Collected: [ ]PT [X]MT [ ]CT [ ]ET
Phone: / Email:	Site/Facility ID #: COG-0117 — Compliance Monitoring? [ ] Yes [X] No
Collected By (print): Andrew Smith	Purchase Order # : / Quote #: — DW PWS ID #: / DW Location Code:
Collected By (signature): AS	Turnaround Date Required: **Standard 5 day** — Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: ____ [ ] Hold: ____	Rush: (Expedite Charges Apply) [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day — Field Filtered (if applicable): [ ] Yes [ ] No Analysis: ____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type **

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other ____

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Container Type: Plastic (P) or Glass (G)	Table 915-1 VOC's	TPH (ORO,GRO,DRO)	Table 915-1 Metal's	Table 915-1 PAH's	EC, SAR, Ph, Arsenic	Boron (Hot Water Soluble Soil)
20210714 - B9E (BASE@10')	SL	G	7/14/2021	0840				2	G	X	X	X	X	X	X
20210714 - B9E (SS01@9')	SL	G	7/14/2021	0850				2	G	X	X	X	X	X	X

Analyses

Lab Profile/Line:

Lab Sample Receipt Checklist:
Custody Seals Present/Intact Y N NA
Custody Signatures Present Y N NA
Collector Signature Present Y N NA
Bottles Intact Y N NA
Correct Bottles Y N NA
Sufficient Volume Y N NA
Samples Received on Ice Y N NA
VOA - Headspace Acceptable Y N NA
USDA Regulated Soils Y N NA
Samples in Holding Time Y N NA
Residual Chlorine Present Y N NA
Cl Strips: ____
Sample pH Acceptable Y N NA
pH Strips: ____
Sulfide Present Y N NA
Lead Acetate Strips: ____

LAB USE ONLY:
Lab Sample # / Comments:
UJ78744
-01
-02

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #:

Samples received via: FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: A305
Cooler 1 Temp Upon Receipt: 1.7 °C
Cooler 1 Therm Corr. Factor: +0.1 °C
Cooler 1 Corrected Temp: 1.8 °C
Comments:

Relinquished by/Company: (Signature) AS	Date/Time: 7-14-21/1530	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time: 7/15/21 9:30

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: ____ of: ____

ANALYTICAL REPORT

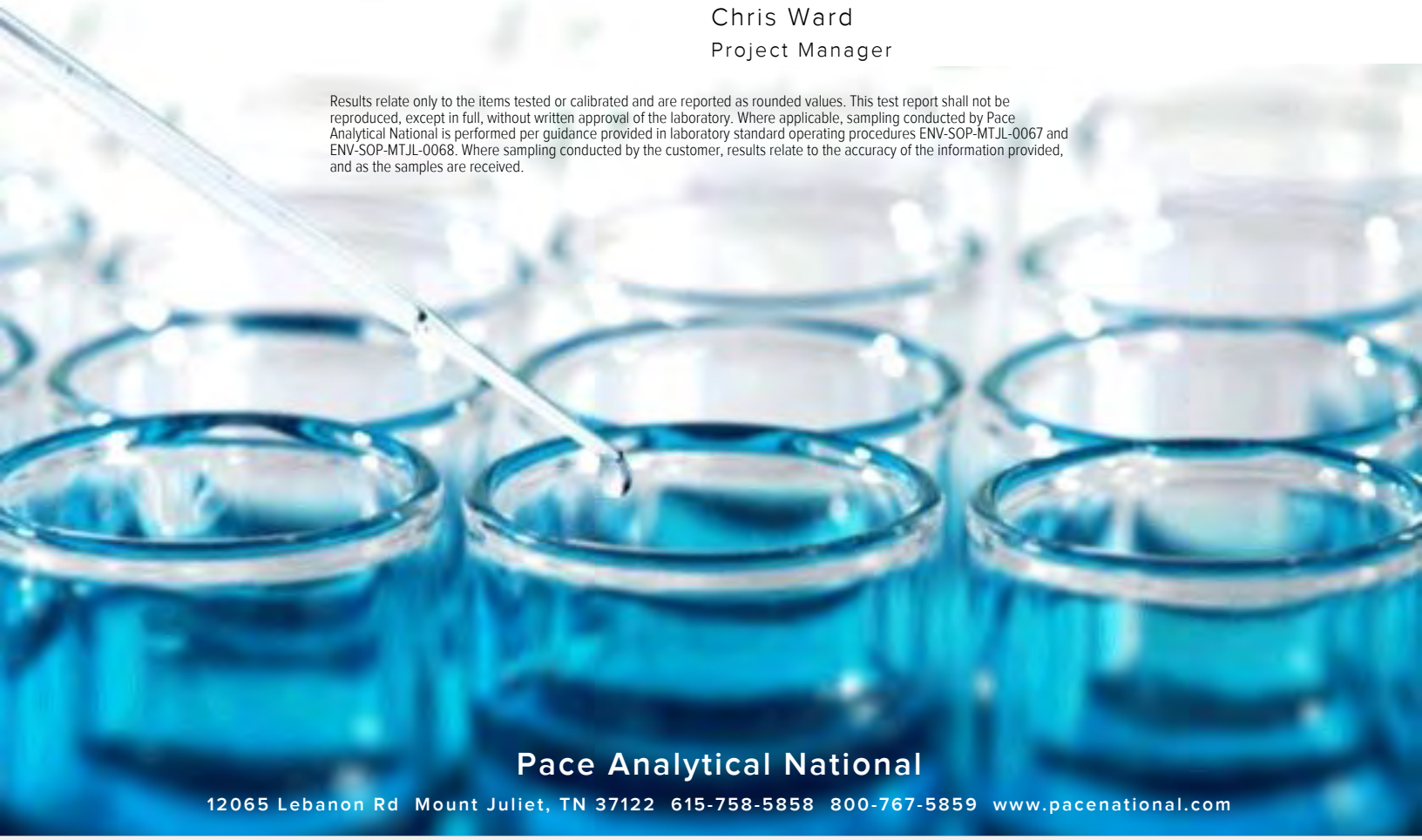
July 26, 2021

Caerus Oil and Gas

Sample Delivery Group:	L1378762
Samples Received:	07/15/2021
Project Number:	
Description:	B9E P&A
Site:	COG-0117
Report To:	Brett Middleton 143 Diamond Avenue Parachute, CO 81635

Entire Report Reviewed By:

Chris Ward
Project Manager



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

TABLE OF CONTENTS

SAMPLE SUMMARY

20210714-B9E (BGW@1') L1378762-01 Solid

Collected by: Andrew Smith | Collected date/time: 07/14/21 11:30 | Received date/time: 07/15/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1707577	1	07/24/21 19:07	07/24/21 19:07	EL	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1707742	1	07/19/21 11:00	07/19/21 15:00	BMD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1708162	1	07/21/21 11:26	07/21/21 14:54	AMH	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1706915	5	07/22/21 17:30	07/23/21 19:03	JPD	Mt. Juliet, TN

20210714-B9E (BGN@3') L1378762-02 Solid

Collected by: Andrew Smith | Collected date/time: 07/14/21 12:15 | Received date/time: 07/15/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1707577	1	07/24/21 19:10	07/24/21 19:10	EL	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1707742	1	07/19/21 11:00	07/19/21 15:00	BMD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1708162	1	07/21/21 11:26	07/21/21 14:54	AMH	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1706915	5	07/22/21 17:30	07/23/21 19:06	JPD	Mt. Juliet, TN

20210714-B9E (BGE@8') L1378762-03 Solid

Collected by: Andrew Smith | Collected date/time: 07/14/21 12:20 | Received date/time: 07/15/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1707577	1	07/24/21 19:13	07/24/21 19:13	EL	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1707742	1	07/19/21 11:00	07/19/21 15:00	BMD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1708162	1	07/21/21 11:26	07/21/21 14:54	AMH	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1706915	5	07/22/21 17:30	07/23/21 19:10	JPD	Mt. Juliet, TN

20210714-B9E (BGS@2') L1378762-04 Solid

Collected by: Andrew Smith | Collected date/time: 07/14/21 12:30 | Received date/time: 07/15/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1707577	1	07/24/21 19:15	07/24/21 19:15	EL	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1707742	1	07/19/21 11:00	07/19/21 15:00	BMD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1708162	1	07/21/21 11:26	07/21/21 14:54	AMH	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1706915	5	07/22/21 17:30	07/23/21 19:21	JPD	Mt. Juliet, TN

CASE NARRATIVE

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

Chris Ward
Project Manager

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.269		1	07/24/2021 19:07	WG1707577

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.07	T8	1	07/19/2021 15:00	WG1707742

Sample Narrative:

L1378762-01 WG1707742: 8.07 at 22.4C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	295		10.0	1	07/21/2021 14:54	WG1708162

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.69		0.100	1.00	5	07/23/2021 19:03	WG1706915

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.508		1	07/24/2021 19:10	WG1707577

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.28	T8	1	07/19/2021 15:00	WG1707742

Sample Narrative:

L1378762-02 WG1707742: 8.28 at 22.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	241		10.0	1	07/21/2021 14:54	WG1708162

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.87		0.100	1.00	5	07/23/2021 19:06	WG1706915

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.0660		1	07/24/2021 19:13	WG1707577

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.20	T8	1	07/19/2021 15:00	WG1707742

Sample Narrative:

L1378762-03 WG1707742: 8.2 at 22.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	317		10.0	1	07/21/2021 14:54	WG1708162

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	6.23		0.100	1.00	5	07/23/2021 19:10	WG1706915

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.103		1	07/24/2021 19:15	WG1707577

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.12	T8	1	07/19/2021 15:00	WG1707742

Sample Narrative:

L1378762-04 WG1707742: 8.12 at 22.4C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	283		10.0	1	07/21/2021 14:54	WG1708162

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.94		0.100	1.00	5	07/23/2021 19:21	WG1706915

L1378860-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1378860-01 07/19/21 15:00 • (DUP) R3681191-2 07/19/21 15:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.26	8.26	1	0.000		1

Sample Narrative:

OS: 8.26 at 22.3C

DUP: 8.26 at 22C

Laboratory Control Sample (LCS)

(LCS) R3681191-1 07/19/21 15:00

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

Sample Narrative:

LCS: 10.08 at 22C

Method Blank (MB)

(MB) R3682230-1 07/21/21 14:54

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

L1378762-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1378762-04 07/21/21 14:54 • (DUP) R3682230-3 07/21/21 14:54

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	283	260	1	8.58		20

L1379873-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1379873-09 07/21/21 14:54 • (DUP) R3682230-4 07/21/21 14:54

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	84.8	88.4	1	4.16		20

Laboratory Control Sample (LCS)

(LCS) R3682230-2 07/21/21 14:54

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	899	904	101	85.0-115	

Method Blank (MB)

(MB) R3683374-1 07/23/21 18:39

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) R3683374-2 07/23/21 18:43

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	90.8	90.8	80.0-120	

L1378926-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1378926-13 07/23/21 18:46 • (MS) R3683374-5 07/23/21 18:56 • (MSD) R3683374-6 07/23/21 19:00

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	3.35	101	99.3	97.9	95.9	5	75.0-125			1.97	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
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.

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here: E216

ALL BOLD OUTLINED AREAS are for LAB USE ONLY

Company: Caerus Oil and Gas LLC	Billing Information: Info on file
Address: Info on file	
Report To: Jake Janicek, Brett Middleton, Blair Rollins	Email To: Info on file
Copy To: Chris McKisson, remediation@confluence-cc.com	Site Collection Info/Address:
Customer Project Name/Number: B9E P&A	State: / County/City: Time Zone Collected: [ ]PT [X]MT [ ]CT [ ]ET
Phone: / Email:	Site/Facility ID #: COG-0117
Collected By (print): Andrew Smith	Purchase Order # : / Quote #:
Collected By (signature): AS	Turnaround Date Required: **Standard 5 Day**
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: (Expedite Charges Apply) [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day

Compliance Monitoring? [ ] Yes [X] No

DW PWS ID #: / DW Location Code:

Immediately Packed on Ice: [X] Yes [ ] No

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: _____

Container Preservative Type **

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Container Type: Plastic (P) or Glass (G)	EC, SAR, pH	Arsenic	Lab Sample # / Comments
20210714 - B9E (BGW@1')	SL	G	7/14/2021	1130				2	G	X	X	L1378762 -01
20210714 - B9E (BGN@3')	SL	G	7/14/2021	1215				2	G	X	X	-02
20210714 - B9E (BGE@8")	SL	G	7/14/2021	1220				2	G	X	X	-03
20210714 - B9E (BGS@2')	SL	G	7/14/2021	1230				2	G	X	X	-04

Lab Profile/Line:

Lab Sample Receipt Checklist:			
Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples Received on Ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in Holding Time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

LAB USE ONLY:

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #:

Samples received via: FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:

Temp Blank Received: Y N NA

Therm ID#: A3DT

Cooler 1 Temp Upon Receipt: 4.7 oC

Cooler 1 Therm Corr. Factor: +0.1 oC

Cooler 1 Corrected Temp: 4.8 oC

Comments:

Relinquished by/Company: (Signature) AS	Date/Time: 7-14-21/1530	Received by/Company: (Signature)	Date/Time:	MTJL LAB USE ONLY Table #:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Acctnum: Template: Prelogin:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time: 7/15/21 9:30	PM: PB:

Trip Blank Received: Y N NA

HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: ____ of: ____

ANALYTICAL REPORT

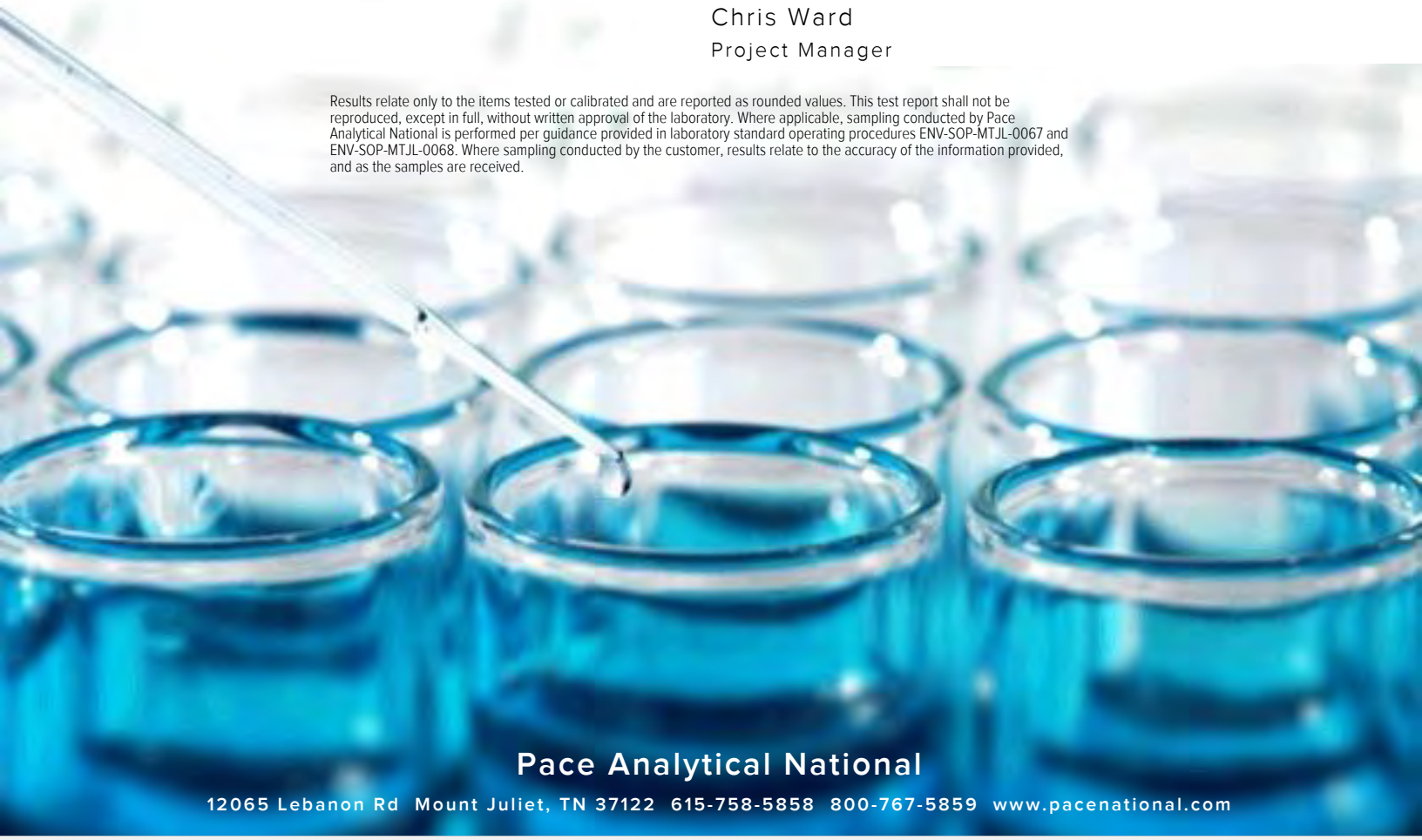
October 26, 2021

Caerus Oil and Gas

Sample Delivery Group:	L1418582
Samples Received:	10/15/2021
Project Number:	
Description:	B9E Wellhead P&A
Site:	B9E
Report To:	Blair Rollins 143 Diamond Avenue Parachute, CO 81635

Entire Report Reviewed By:

Chris Ward
Project Manager



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

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SAMPLE SUMMARY

20211013-B9E(BGE2@1.5') L1418582-01 Solid

Collected by: Andrew Smith
Collected date/time: 10/13/21 12:30
Received date/time: 10/15/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1759170	1	10/22/21 11:15	10/22/21 11:15	CCE	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1761958	1	10/22/21 19:00	10/24/21 20:20	BMD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1759894	1	10/20/21 12:55	10/20/21 17:46	AMH	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1760322	5	10/20/21 16:58	10/20/21 22:09	LD	Mt. Juliet, TN

20211013-B9E(BGE3@2') L1418582-02 Solid

Collected by: Andrew Smith
Collected date/time: 10/13/21 12:35
Received date/time: 10/15/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1759170	1	10/22/21 11:18	10/22/21 11:18	CCE	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1761958	1	10/22/21 19:00	10/24/21 20:20	BMD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1759894	1	10/20/21 12:55	10/20/21 17:46	AMH	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1760322	5	10/20/21 16:58	10/20/21 22:12	LD	Mt. Juliet, TN

CASE NARRATIVE

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

Chris Ward
Project Manager

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.527		1	10/22/2021 11:15	WG1759170

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	9.21	T8	1	10/24/2021 20:20	WG1761958

Sample Narrative:

L1418582-01 WG1761958: 9.21 at 20.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	2620		10.0	1	10/20/2021 17:46	WG1759894

Sample Narrative:

L1418582-01 WG1759894: at 25C

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.78		0.100	1.00	5	10/20/2021 22:09	WG1760322

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.321		1	10/22/2021 11:18	WG1759170

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	9.50	T8	1	10/24/2021 20:20	WG1761958

Sample Narrative:

L1418582-02 WG1761958: 9.5 at 20.4C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	598		10.0	1	10/20/2021 17:46	WG1759894

Sample Narrative:

L1418582-02 WG1759894: at 25C

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	1.85		0.100	1.00	5	10/20/2021 22:12	WG1760322

Laboratory Control Sample (LCS)

(LCS) R3720645-1 10/24/21 20:20

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

Sample Narrative:

LCS: 10.01 at 20C

Method Blank (MB)

(MB) R3719119-1 10/20/21 17:46

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

Sample Narrative:
BLANK: at 25C

L1418643-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1418643-01 10/20/21 17:46 • (DUP) R3719119-3 10/20/21 17:46

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	3610	3630	1	0.552		20

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

L1418661-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1418661-01 10/20/21 17:46 • (DUP) R3719119-4 10/20/21 17:46

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	207	208	1	0.529		20

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

Laboratory Control Sample (LCS)

(LCS) R3719119-2 10/20/21 17:46

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	270	101	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3719156-1 10/20/21 20:14

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) R3719156-2 10/20/21 20:18

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	93.2	93.2	80.0-120	

L1418133-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1418133-08 10/20/21 20:21 • (MS) R3719156-5 10/20/21 20:32 • (MSD) R3719156-6 10/20/21 20:35

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	3.30	91.8	90.6	88.5	87.3	5	75.0-125			1.30	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
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.

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

K158

ALL BOLD OUTLINED AREAS are for LAB USE ONLY

Company: Caerus Oil and Gas LLC	Billing Information: Info on file
Address: Info on file	
Report To: Jake Janicek, Brett Middleton, Blair Rollins	Email To: Info on file
Copy To: Chris McKisson, remediation@confluence-cc.com	Site Collection Info/Address:
Customer Project Name/Number: B9E Wellhead P&A	State: CO / County/City: Garfield Time Zone Collected: [ ]PT [X]MT [ ]CT [ ]ET

Container Preservative Type **

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Phone: Email:	Site/Facility ID #: B9E	Compliance Monitoring? [ ] Yes [X] No
Collected By (print): Andrew Smith	Purchase Order # : Quote #:	DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: Standard 5-Day	Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: (Expedite Charges Apply) [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day	Field Filtered (if applicable): [ ] Yes [ ] No Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Container Type: Plastic (P) or Glass (G)	EC, SAR, pH	Arsenic	Lab Sample # / Comments:
20211013-B9E (BGE2@1.5')	SL	G	10/13/2021	1230				2	G	X	X	L1418582 -01
20211013-B9E (BGE3@2')	SL	G	10/13/2021	1235				2	G	X	X	-02

Analyses

Lab Profile/Line:

Lab Sample Receipt Checklist:			
Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples Received on Ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in Holding Time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

LAB USE ONLY:

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None	SHORT HOLDS PRESENT (<72 hours): Y N N/A
Packing Material Used:	Lab Tracking #:
Radchem sample(s) screened (<500 cpm): Y N NA	Samples received via: FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:

Temp Blank Received: Y N NA

Therm ID#: A7

Cooler 1 Temp Upon Receipt: 3.4 °C

Cooler 1 Therm Corr. Factor: +0.0 °C

Cooler 1 Corrected Temp: 3.4 °C

Comments:

Relinquished by/Company: (Signature)	Date/Time: 10-14-21/1200	Received by/Company: (Signature)	Date/Time: 10/14 1200	MTJL LAB USE ONLY Table #:
Relinquished by/Company: (Signature)	Date/Time: 10 14 1520	Received by/Company: (Signature)	Date/Time:	Acctnum: Template: Prelogin:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time: 10-14-21 0930	PM: PB:

Trip Blank Received: Y N NA

HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: ____ of: ____

ANALYTICAL REPORT

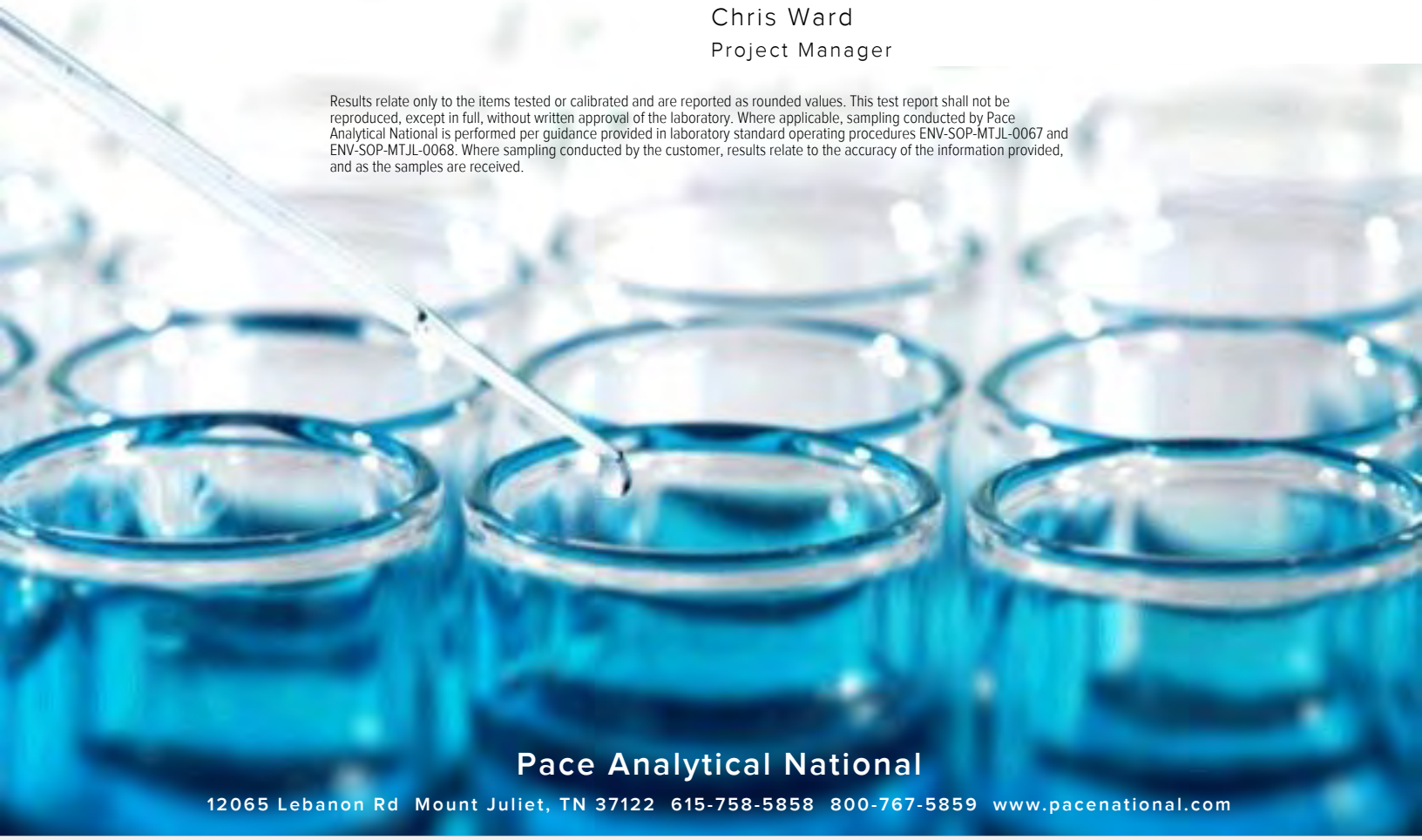
October 27, 2021

Caerus Oil and Gas

Sample Delivery Group:	L1418676
Samples Received:	10/15/2021
Project Number:	
Description:	B9E Wellhead P&A
Site:	B9E
Report To:	Blair Rollins 143 Diamond Avenue Parachute, CO 81635

Entire Report Reviewed By:

Chris Ward
Project Manager



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

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SAMPLE SUMMARY

20211013-B9E(FLOWLINE@6') L1418676-01 Solid

Collected by: Andrew Smith
Collected date/time: 10/13/21 11:20
Received date/time: 10/15/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1759169	1	10/22/21 11:40	10/22/21 11:40	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1761389	1	10/21/21 19:00	10/22/21 13:31	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1759752	1	10/22/21 13:00	10/22/21 15:25	RAF	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1759895	1	10/20/21 14:34	10/20/21 18:30	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1760886	1	10/21/21 15:17	10/21/21 20:26	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1759166	1	10/21/21 14:11	10/22/21 12:50	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1760910	5	10/21/21 15:18	10/21/21 18:35	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1763154	1	10/26/21 07:36	10/26/21 11:52	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1761264	1	10/20/21 22:51	10/21/21 17:57	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1761817	1	10/23/21 12:57	10/25/21 11:06	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1761266	1	10/22/21 13:15	10/22/21 23:04	AAT	Mt. Juliet, TN

CASE NARRATIVE

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

Chris Ward
Project Manager

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.38		1	10/22/2021 11:40	WG1759169

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	10/22/2021 13:31	WG1761389

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.84	T8	1	10/22/2021 15:25	WG1759752

Sample Narrative:

L1418676-01 WG1759752: 7.84 at 19.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	689		10.0	1	10/20/2021 18:30	WG1759895

Sample Narrative:

L1418676-01 WG1759895: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	483		0.0852	0.500	1	10/21/2021 20:26	WG1760886
Cadmium	0.185	J	0.0471	0.500	1	10/21/2021 20:26	WG1760886
Copper	10.3		0.400	2.00	1	10/21/2021 20:26	WG1760886
Lead	7.57		0.208	0.500	1	10/21/2021 20:26	WG1760886
Nickel	8.84		0.132	2.00	1	10/21/2021 20:26	WG1760886
Selenium	U		0.764	2.00	1	10/21/2021 20:26	WG1760886
Silver	U		0.127	1.00	1	10/21/2021 20:26	WG1760886
Zinc	25.8		0.832	5.00	1	10/21/2021 20:26	WG1760886

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	0.485		0.0167	0.200	1	10/22/2021 12:50	WG1759166

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	6.15		0.100	1.00	5	10/21/2021 18:35	WG1760910

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	0.0371	J	0.0217	0.100	1	10/26/2021 11:52	WG1763154
(S) a,a,a-Trifluorotoluene(FID)	*95.5*			*77.0-120*		*10/26/2021 11:52*	WG1763154

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	10/21/2021 17:57	WG1761264
Toluene	U		0.00130	0.00500	1	10/21/2021 17:57	WG1761264
Ethylbenzene	U		0.000737	0.00250	1	10/21/2021 17:57	WG1761264
Xylenes, Total	0.00202	J	0.000880	0.00650	1	10/21/2021 17:57	WG1761264
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/21/2021 17:57	WG1761264
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/21/2021 17:57	WG1761264
(S) Toluene-d8	*103*			*75.0-131*		*10/21/2021 17:57*	WG1761264
(S) 4-Bromofluorobenzene	*89.3*			*67.0-138*		*10/21/2021 17:57*	WG1761264
(S) 1,2-Dichloroethane-d4	*104*			*70.0-130*		*10/21/2021 17:57*	WG1761264

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	46.8		1.61	4.00	1	10/25/2021 11:06	WG1761817
C28-C36 Motor Oil Range	41.6		0.274	4.00	1	10/25/2021 11:06	WG1761817
(S) o-Terphenyl	*70.9*			*18.0-148*		*10/25/2021 11:06*	WG1761817

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	10/22/2021 23:04	WG1761266
Acenaphthene	U		0.00209	0.00600	1	10/22/2021 23:04	WG1761266
Acenaphthylene	U		0.00216	0.00600	1	10/22/2021 23:04	WG1761266
Benzo(a)anthracene	U		0.00173	0.00600	1	10/22/2021 23:04	WG1761266
Benzo(a)pyrene	U		0.00179	0.00600	1	10/22/2021 23:04	WG1761266
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/22/2021 23:04	WG1761266
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	10/22/2021 23:04	WG1761266
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/22/2021 23:04	WG1761266
Chrysene	U		0.00232	0.00600	1	10/22/2021 23:04	WG1761266
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/22/2021 23:04	WG1761266
Fluoranthene	U		0.00227	0.00600	1	10/22/2021 23:04	WG1761266
Fluorene	U		0.00205	0.00600	1	10/22/2021 23:04	WG1761266
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/22/2021 23:04	WG1761266
Naphthalene	U		0.00408	0.0200	1	10/22/2021 23:04	WG1761266
Phenanthrene	U		0.00231	0.00600	1	10/22/2021 23:04	WG1761266
Pyrene	U		0.00200	0.00600	1	10/22/2021 23:04	WG1761266
1-Methylnaphthalene	U		0.00449	0.0200	1	10/22/2021 23:04	WG1761266
2-Methylnaphthalene	U		0.00427	0.0200	1	10/22/2021 23:04	WG1761266
2-Chloronaphthalene	U		0.00466	0.0200	1	10/22/2021 23:04	WG1761266
(S) p-Terphenyl-d14	*102*			*23.0-120*		*10/22/2021 23:04*	WG1761266
(S) Nitrobenzene-d5	*72.9*			*14.0-149*		*10/22/2021 23:04*	WG1761266
(S) 2-Fluorobiphenyl	*77.0*			*34.0-125*		*10/22/2021 23:04*	WG1761266

Method Blank (MB)

(MB) R3720240-1 10/22/21 12:52

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

L1418667-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1418667-05 10/22/21 13:20 • (DUP) R3720240-3 10/22/21 13:26

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

L1419731-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1419731-06 10/22/21 15:09 • (DUP) R3720240-8 10/22/21 15:15

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	20.7	8.61	1	82.6	J3	20

Laboratory Control Sample (LCS)

(LCS) R3720240-2 10/22/21 13:00

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	10.0	10.2	102	80.0-120	

L1419731-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1419731-01 10/22/21 14:12 • (MS) R3720240-4 10/22/21 14:18 • (MSD) R3720240-5 10/22/21 14:23

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 %
Hexavalent Chromium	20.0	0.443	17.6	18.7	85.7	91.1	1	75.0-125			5.95	20

L1419731-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1419731-01 10/22/21 14:12 • (MS) R3720240-6 10/22/21 14:28

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	703	0.443	775	110	50	75.0-125	

L1418263-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1418263-03 10/22/21 15:25 • (DUP) R3720207-3 10/22/21 15:25

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.32	8.33	1	0.120		1

Sample Narrative:

OS: 8.32 at 19.6C

DUP: 8.33 at 19.8C

Laboratory Control Sample (LCS)

(LCS) R3720207-1 10/22/21 15:25

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	9.97	99.7	99.0-101	

Sample Narrative:

LCS: 9.97 at 19.8C

Method Blank (MB)

(MB) R3719127-1 10/20/21 18:30

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

L1418661-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1418661-04 10/20/21 18:30 • (DUP) R3719127-3 10/20/21 18:30

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	178	179	1	0.560		20

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

L1418661-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1418661-11 10/20/21 18:30 • (DUP) R3719127-4 10/20/21 18:30

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	237	237	1	0.380		20

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

Laboratory Control Sample (LCS)

(LCS) R3719127-2 10/20/21 18:30

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

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3719877-1 10/21/21 20:01

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

Laboratory Control Sample (LCS)

(LCS) R3719877-2 10/21/21 20:03

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	95.5	95.5	80.0-120	
Cadmium	100	92.6	92.6	80.0-120	
Copper	100	94.3	94.3	80.0-120	
Lead	100	94.7	94.7	80.0-120	
Nickel	100	95.0	95.0	80.0-120	
Selenium	100	94.3	94.3	80.0-120	
Silver	20.0	18.0	90.0	80.0-120	
Zinc	100	93.0	93.0	80.0-120	

L1418263-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1418263-01 10/21/21 20:06 • (MS) R3719877-5 10/21/21 20:14 • (MSD) R3719877-6 10/21/21 20:17

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	100	177	261	253	83.3	75.4	1	75.0-125			3.09	20
Cadmium	100	0.320	86.3	95.9	85.9	95.6	1	75.0-125			10.6	20
Copper	100	13.3	99.0	107	85.7	93.9	1	75.0-125			7.90	20
Lead	100	7.51	98.0	106	90.5	98.3	1	75.0-125			7.63	20
Nickel	100	10.3	99.0	108	88.8	97.3	1	75.0-125			8.25	20
Selenium	100	U	83.5	92.6	83.5	92.6	1	75.0-125			10.4	20
Silver	20.0	U	17.0	18.6	84.9	93.2	1	75.0-125			9.33	20
Zinc	100	25.2	103	114	78.2	88.7	1	75.0-125			9.62	20

Method Blank (MB)

(MB) R3720137-1 10/22/21 12:12

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) R3720137-2 10/22/21 12:15 • (LCSD) R3720137-3 10/22/21 12:17

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	1.08	106	108	80.0-120			1.32	20

Method Blank (MB)

(MB) R3719749-1 10/21/21 18:06

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) R3719749-2 10/21/21 18:09

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	89.1	89.1	80.0-120	

L1418263-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1418263-01 10/21/21 18:13 • (MS) R3719749-5 10/21/21 18:22 • (MSD) R3719749-6 10/21/21 18:25

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	5.21	86.2	93.4	81.0	88.2	5	75.0-125			8.05	20

Method Blank (MB)

(MB) R3721849-3 10/26/21 10:58

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

Laboratory Control Sample (LCS)

(LCS) R3721849-2 10/26/21 09:17

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.87	88.5	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*95.7*	*77.0-120*	

Method Blank (MB)

(MB) R3719936-2 10/21/21 11:42

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*104*			*75.0-131*
(S) 4-Bromofluorobenzene	*91.7*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*109*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3719936-1 10/21/21 10:45

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.114	91.2	70.0-123	
Ethylbenzene	0.125	0.109	87.2	74.0-126	
Toluene	0.125	0.110	88.0	75.0-121	
1,2,4-Trimethylbenzene	0.125	0.109	87.2	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.116	92.8	73.0-127	
Xylenes, Total	0.375	0.327	87.2	72.0-127	
(S) Toluene-d8			*102*	*75.0-131*	
(S) 4-Bromofluorobenzene			*94.6*	*67.0-138*	
(S) 1,2-Dichloroethane-d4			*111*	*70.0-130*	

Method Blank (MB)

(MB) R3720724-1 10/24/21 17:08

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	*90.2*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3720724-2 10/24/21 17:21

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	35.3	70.6	50.0-150	
(S) o-Terphenyl			*95.2*	*18.0-148*	

L1418698-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1418698-03 10/24/21 18:52 • (MS) R3720724-3 10/24/21 18:13 • (MSD) R3720724-4 10/24/21 18:26

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	U	45.5	43.3	92.5	88.0	1	50.0-150			4.95	20
(S) o-Terphenyl					*112*	*105*		*18.0-148*				

Method Blank (MB)

(MB) R3720381-2 10/22/21 16:34

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) Nitrobenzene-d5	*91.7*			*14.0-149*
(S) 2-Fluorobiphenyl	*101*			*34.0-125*
(S) p-Terphenyl-d14	*145*	J1		*23.0-120*

Laboratory Control Sample (LCS)

(LCS) R3720381-1 10/22/21 16:16

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0698	87.3	50.0-126	
Acenaphthene	0.0800	0.0694	86.8	50.0-120	
Acenaphthylene	0.0800	0.0606	75.8	50.0-120	
Benzo(a)anthracene	0.0800	0.0658	82.3	45.0-120	
Benzo(a)pyrene	0.0800	0.0623	77.9	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0683	85.4	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0662	82.8	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0680	85.0	49.0-125	
Chrysene	0.0800	0.0694	86.8	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0690	86.3	47.0-125	
Fluoranthene	0.0800	0.0723	90.4	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3720381-1 10/22/21 16:16

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0654	81.8	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0694	86.8	46.0-125	
Naphthalene	0.0800	0.0678	84.8	50.0-120	
Phenanthrene	0.0800	0.0691	86.4	47.0-120	
Pyrene	0.0800	0.0691	86.4	43.0-123	
1-Methylnaphthalene	0.0800	0.0683	85.4	51.0-121	
2-Methylnaphthalene	0.0800	0.0647	80.9	50.0-120	
2-Chloronaphthalene	0.0800	0.0680	85.0	50.0-120	
(S) Nitrobenzene-d5			*85.1*	*14.0-149*	
(S) 2-Fluorobiphenyl			*87.6*	*34.0-125*	
(S) p-Terphenyl-d14			*125*	*23.0-120*	J1

L1418451-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1418451-01 10/22/21 17:45 • (MS) R3720381-3 10/22/21 18:03 • (MSD) R3720381-4 10/22/21 18:21

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0788	U	0.0624	0.0584	79.2	74.5	1	10.0-145			6.62	30
Acenaphthene	0.0788	U	0.0623	0.0592	79.1	75.5	1	14.0-127			5.10	27
Acenaphthylene	0.0788	U	0.0581	0.0545	73.7	69.5	1	21.0-124			6.39	25
Benzo(a)anthracene	0.0788	U	0.0588	0.0541	74.6	69.0	1	10.0-139			8.33	30
Benzo(a)pyrene	0.0788	U	0.0582	0.0548	73.9	69.9	1	10.0-141			6.02	31
Benzo(b)fluoranthene	0.0788	U	0.0557	0.0514	70.7	65.6	1	10.0-140			8.03	36
Benzo(g,h,i)perylene	0.0788	U	0.0573	0.0543	72.7	69.3	1	10.0-140			5.38	33
Benzo(k)fluoranthene	0.0788	U	0.0589	0.0560	74.7	71.4	1	10.0-137			5.05	31
Chrysene	0.0788	U	0.0620	0.0598	78.7	76.3	1	10.0-145			3.61	30
Dibenz(a,h)anthracene	0.0788	U	0.0608	0.0580	77.2	74.0	1	10.0-132			4.71	31
Fluoranthene	0.0788	U	0.0629	0.0584	79.8	74.5	1	10.0-153			7.42	33
Fluorene	0.0788	U	0.0603	0.0567	76.5	72.3	1	11.0-130			6.15	29
Indeno(1,2,3-cd)pyrene	0.0788	U	0.0593	0.0557	75.3	71.0	1	10.0-137			6.26	32
Naphthalene	0.0788	U	0.0604	0.0570	76.6	72.7	1	10.0-135			5.79	27
Phenanthrene	0.0788	U	0.0615	0.0562	78.0	71.7	1	10.0-144			9.01	31
Pyrene	0.0788	U	0.0570	0.0538	72.3	68.6	1	10.0-148			5.78	35
1-Methylnaphthalene	0.0788	U	0.0619	0.0582	78.6	74.2	1	10.0-142			6.16	28
2-Methylnaphthalene	0.0788	U	0.0635	0.0551	80.6	70.3	1	10.0-137			14.2	28
2-Chloronaphthalene	0.0788	U	0.0608	0.0584	77.2	74.5	1	29.0-120			4.03	24
(S) Nitrobenzene-d5					*83.9*	*80.3*		*14.0-149*				
(S) 2-Fluorobiphenyl					*88.8*	*90.1*		*34.0-125*				
(S) p-Terphenyl-d14					*115*	*115*		*23.0-120*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J3	The associated batch QC was outside the established quality control range for precision.
T8	Sample(s) received past/too close to holding time expiration.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

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

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

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here: K157

ALL BOLD OUTLINED AREAS are for LAB USE ONLY

Company: Caerus Oil and Gas LLC	Billing Information: Info on file
Address: Info on file	
Report To: Jake Janicek, Brett Middleton, Blair Rollins	Email To: info on file
Copy To: Chris McKisson, remediation@confluence-cc.com	Site Collection Info/Address:
Customer Project Name/Number: B9E Wellhead P&A	State: CO / County/City: Garfield / Time Zone Collected: [ ]PT [X]MT [ ]CT [ ]ET
Phone: / Email:	Site/Facility ID #: B9E / Compliance Monitoring? [ ] Yes [X] No
Collected By (print): Andrew Smith	Purchase Order # : / Quote #: / DW PWS ID #: / DW Location Code:
Collected By (signature): AS	Turnaround Date Required: Standard 5-day / Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: (Expedite Charges Apply) [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day / Field Filtered (if applicable): [ ] Yes [ ] No / Analysis: _____

Container Preservative Type **

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Container Type: Plastic (P) or Glass (G)	Analyses: Table 915-1 VOCs	TPH (ORO, GRO, DRO)	Table 915-1 Metal's	Table 915-1 PAHs	EC, SAR, Arsenic	Boron (Hot Water Soluble Soil)	Lab Profile/Line: Lab Sample # / Comments:
20211013-B9E (FLOWLINE@6')	SL	G	10/13/2021	1120				2	G	X	X	X	X	X	X	L14/8676-01

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples Received on Ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in Holding Time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #:

Samples received via: FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:

Temp Blank Received: Y N NA

Therm ID#: AT 3.4

Cooler 1 Temp Upon Receipt: 3.4 °C

Cooler 1 Therm Corr. Factor: 0.0 °C

Cooler 1 Corrected Temp: 3.4 °C

Comments:

	Date/Time:		Date/Time:
Relinquished by/Company: (Signature) AS	10-14-21/1200	Received by/Company: (Signature)	10/14 1200
Relinquished by/Company: (Signature)	10/14 1500	Received by/Company: (Signature)	
Relinquished by/Company: (Signature)		Received by/Company: (Signature)	10-15-21 0930

MTJL LAB USE ONLY

Table #:

Acctnum:

Template:

Prelogin:

PM:

PB:

Trip Blank Received: Y N NA

HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: _____ of: _____

ANALYTICAL REPORT

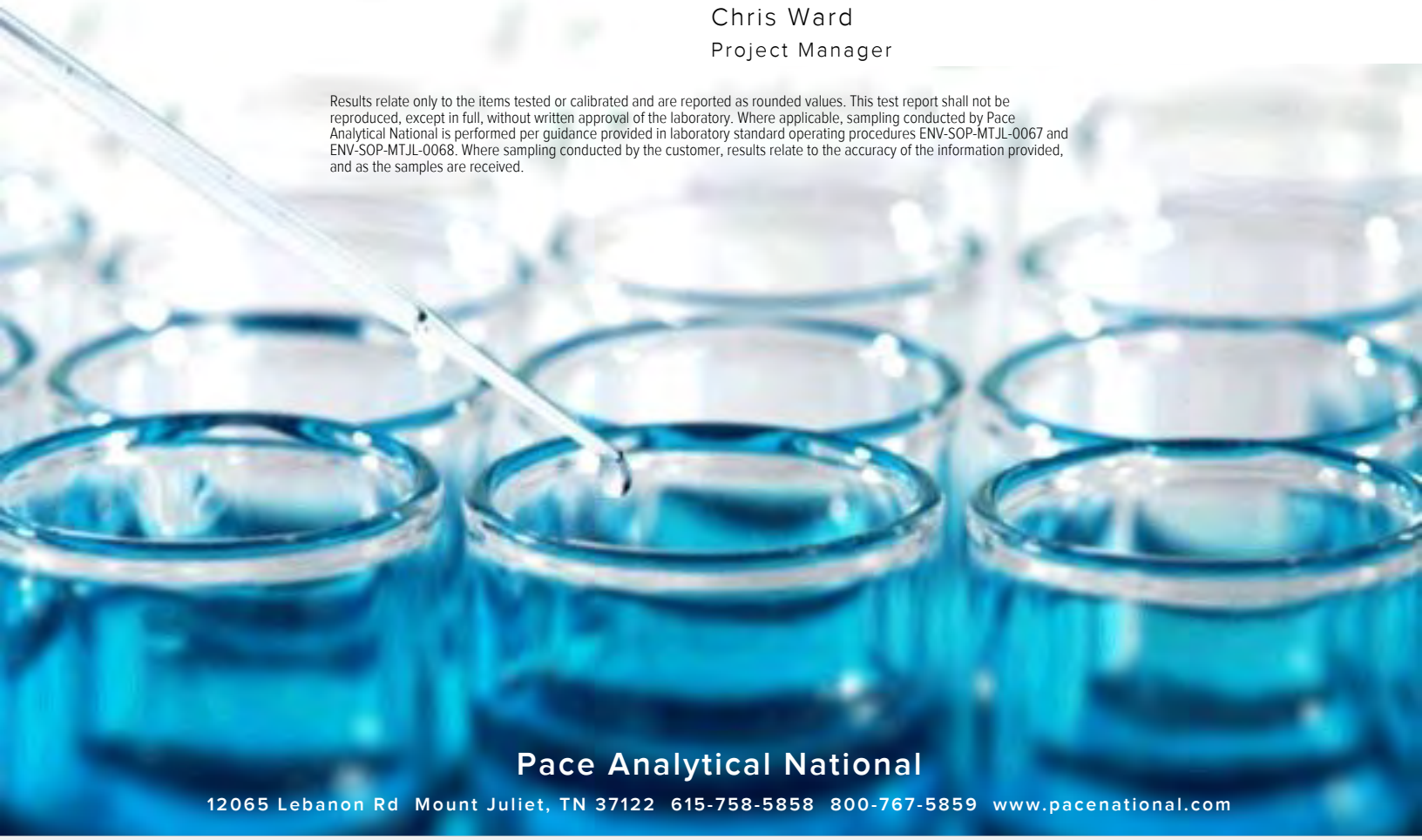
October 26, 2021

Caerus Oil and Gas

Sample Delivery Group:	L1418698
Samples Received:	10/15/2021
Project Number:	
Description:	B9E Wellhead P&A
Site:	B9E
Report To:	Blair Rollins 143 Diamond Avenue Parachute, CO 81635

Entire Report Reviewed By:

Chris Ward
Project Manager



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

TABLE OF CONTENTS

20211013-B9E(PH_S@6') L1418698-01 Solid

Collected by: Andrew Smith | Collected date/time: 10/13/21 09:50 | Received date/time: 10/15/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1759169	1	10/22/21 11:43	10/22/21 11:43	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1761389	1	10/21/21 19:00	10/22/21 13:36	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1759752	1	10/22/21 13:00	10/22/21 15:25	RAF	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1759895	1	10/20/21 14:34	10/20/21 18:30	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1760886	1	10/21/21 15:17	10/21/21 20:34	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1760886	5	10/21/21 15:17	10/22/21 10:03	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1759166	1	10/21/21 14:11	10/22/21 12:52	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1760910	5	10/21/21 15:18	10/21/21 18:45	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1760784	1	10/20/21 16:54	10/21/21 16:17	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1761264	1	10/20/21 16:54	10/21/21 18:16	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1761817	1	10/23/21 12:57	10/24/21 19:57	DMG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1761817	5	10/23/21 12:57	10/25/21 11:33	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1761911	1	10/22/21 18:34	10/23/21 07:24	AAT	Mt. Juliet, TN

20211013-B9E(PH_E@6') L1418698-02 Solid

Collected by: Andrew Smith | Collected date/time: 10/13/21 10:15 | Received date/time: 10/15/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1759169	1	10/22/21 11:45	10/22/21 11:45	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1761389	1	10/21/21 19:00	10/22/21 13:41	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1759727	1	10/22/21 10:00	10/22/21 12:00	AW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1759895	1	10/20/21 14:34	10/20/21 18:30	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1760886	1	10/21/21 15:17	10/21/21 20:36	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1760886	5	10/21/21 15:17	10/22/21 10:06	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1759166	1	10/21/21 14:11	10/22/21 12:55	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1760910	5	10/21/21 15:18	10/21/21 18:48	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1762535	1	10/20/21 16:54	10/25/21 15:47	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1761264	1	10/20/21 16:54	10/21/21 18:35	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1761817	1	10/23/21 12:57	10/24/21 19:31	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1761911	1	10/22/21 18:34	10/23/21 07:44	AAT	Mt. Juliet, TN

20211013-B9E(PH_N@6') L1418698-03 Solid

Collected by: Andrew Smith | Collected date/time: 10/13/21 10:25 | Received date/time: 10/15/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1759169	1	10/22/21 11:48	10/22/21 11:48	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1761389	1	10/21/21 19:00	10/22/21 13:57	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1759727	1	10/22/21 10:00	10/22/21 12:00	AW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1759895	1	10/20/21 14:34	10/20/21 18:30	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1760886	1	10/21/21 15:17	10/21/21 20:39	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1759166	1	10/21/21 14:11	10/22/21 12:58	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1760910	5	10/21/21 15:18	10/21/21 18:51	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1760784	1	10/20/21 16:54	10/21/21 17:04	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1761264	1	10/20/21 16:54	10/21/21 18:54	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1761817	1	10/23/21 12:57	10/24/21 18:52	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1761911	1	10/22/21 18:34	10/23/21 08:04	AAT	Mt. Juliet, TN

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

SAMPLE SUMMARY

20211013-B9E(BASE@15') L1418698-04 Solid

Collected by: Andrew Smith
Collected date/time: 10/13/21 11:15
Received date/time: 10/15/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1759169	1	10/22/21 11:51	10/22/21 11:51	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1761389	1	10/21/21 19:00	10/22/21 14:02	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1759727	1	10/22/21 10:00	10/22/21 12:00	AW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1759895	1	10/20/21 14:34	10/20/21 18:30	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1760886	1	10/21/21 15:17	10/21/21 20:42	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1759166	1	10/21/21 14:11	10/22/21 13:00	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1760910	5	10/21/21 15:18	10/21/21 18:55	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1760784	1	10/20/21 16:54	10/21/21 17:28	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1761264	1	10/20/21 16:54	10/21/21 19:13	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1761817	1	10/23/21 12:57	10/24/21 19:18	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1761911	1	10/22/21 18:34	10/23/21 08:24	AAT	Mt. Juliet, TN

20211013-B9E(PH_W@6') L1418698-05 Solid

Collected by: Andrew Smith
Collected date/time: 10/13/21 11:30
Received date/time: 10/15/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1759169	1	10/22/21 11:59	10/22/21 11:59	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1761389	1	10/21/21 19:00	10/22/21 14:07	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1759752	1	10/22/21 13:00	10/22/21 15:25	RAF	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1759895	1	10/20/21 14:34	10/20/21 18:30	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1760886	1	10/21/21 15:17	10/21/21 20:44	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1759166	1	10/21/21 14:11	10/22/21 13:03	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1760910	5	10/21/21 15:18	10/21/21 18:58	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1760784	1	10/20/21 16:54	10/21/21 17:51	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1761264	1	10/20/21 16:54	10/21/21 19:32	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1761817	1	10/23/21 12:57	10/25/21 10:39	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1761911	1	10/22/21 18:34	10/23/21 08:44	AAT	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	2.44		1	10/22/2021 11:43	WG1759169

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	10/22/2021 13:36	WG1761389

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	9.06	T8	1	10/22/2021 15:25	WG1759752

Sample Narrative:

L1418698-01 WG1759752: 9.06 at 19.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	561		10.0	1	10/20/2021 18:30	WG1759895

Sample Narrative:

L1418698-01 WG1759895: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	2870		0.426	2.50	5	10/22/2021 10:03	WG1760886
Cadmium	U		0.0471	0.500	1	10/21/2021 20:34	WG1760886
Copper	8.98		0.400	2.00	1	10/21/2021 20:34	WG1760886
Lead	10.5		0.208	0.500	1	10/21/2021 20:34	WG1760886
Nickel	6.65		0.132	2.00	1	10/21/2021 20:34	WG1760886
Selenium	1.15	J	0.764	2.00	1	10/21/2021 20:34	WG1760886
Silver	U		0.127	1.00	1	10/21/2021 20:34	WG1760886
Zinc	29.7		0.832	5.00	1	10/21/2021 20:34	WG1760886

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	0.450		0.0167	0.200	1	10/22/2021 12:52	WG1759166

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	6.61		0.100	1.00	5	10/21/2021 18:45	WG1760910

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	0.359		0.0217	0.100	1	10/21/2021 16:17	WG1760784
(S) a,a,a-Trifluorotoluene(FID)	*92.5*			*77.0-120*		*10/21/2021 16:17*	WG1760784

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	0.000668	J	0.000467	0.00100	1	10/21/2021 18:16	WG1761264
Toluene	0.00161	J	0.00130	0.00500	1	10/21/2021 18:16	WG1761264
Ethylbenzene	U		0.000737	0.00250	1	10/21/2021 18:16	WG1761264
Xylenes, Total	0.00656		0.000880	0.00650	1	10/21/2021 18:16	WG1761264
1,2,4-Trimethylbenzene	0.00832		0.00158	0.00500	1	10/21/2021 18:16	WG1761264
1,3,5-Trimethylbenzene	0.00403	J	0.00200	0.00500	1	10/21/2021 18:16	WG1761264
(S) Toluene-d8	*102*			*75.0-131*		*10/21/2021 18:16*	WG1761264
(S) 4-Bromofluorobenzene	*98.6*			*67.0-138*		*10/21/2021 18:16*	WG1761264
(S) 1,2-Dichloroethane-d4	*112*			*70.0-130*		*10/21/2021 18:16*	WG1761264

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	129		1.61	4.00	1	10/24/2021 19:57	WG1761817
C28-C36 Motor Oil Range	127		1.37	20.0	5	10/25/2021 11:33	WG1761817
(S) o-Terphenyl	*54.0*			*18.0-148*		*10/24/2021 19:57*	WG1761817
(S) o-Terphenyl	*62.2*			*18.0-148*		*10/25/2021 11:33*	WG1761817

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	10/23/2021 07:24	WG1761911
Acenaphthene	U		0.00209	0.00600	1	10/23/2021 07:24	WG1761911
Acenaphthylene	U		0.00216	0.00600	1	10/23/2021 07:24	WG1761911
Benzo(a)anthracene	U		0.00173	0.00600	1	10/23/2021 07:24	WG1761911
Benzo(a)pyrene	U		0.00179	0.00600	1	10/23/2021 07:24	WG1761911
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/23/2021 07:24	WG1761911
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	10/23/2021 07:24	WG1761911
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/23/2021 07:24	WG1761911
Chrysene	U		0.00232	0.00600	1	10/23/2021 07:24	WG1761911
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/23/2021 07:24	WG1761911
Fluoranthene	U		0.00227	0.00600	1	10/23/2021 07:24	WG1761911
Fluorene	0.00811		0.00205	0.00600	1	10/23/2021 07:24	WG1761911
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/23/2021 07:24	WG1761911
Naphthalene	0.00910	J	0.00408	0.0200	1	10/23/2021 07:24	WG1761911
Phenanthrene	0.0237		0.00231	0.00600	1	10/23/2021 07:24	WG1761911
Pyrene	0.00373	J	0.00200	0.00600	1	10/23/2021 07:24	WG1761911
1-Methylnaphthalene	0.0235		0.00449	0.0200	1	10/23/2021 07:24	WG1761911
2-Methylnaphthalene	0.0383		0.00427	0.0200	1	10/23/2021 07:24	WG1761911
2-Chloronaphthalene	U		0.00466	0.0200	1	10/23/2021 07:24	WG1761911
(S) p-Terphenyl-d14	*65.3*			*23.0-120*		*10/23/2021 07:24*	WG1761911
(S) Nitrobenzene-d5	*46.0*			*14.0-149*		*10/23/2021 07:24*	WG1761911
(S) 2-Fluorobiphenyl	*41.9*			*34.0-125*		*10/23/2021 07:24*	WG1761911

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.96		1	10/22/2021 11:45	WG1759169

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	10/22/2021 13:41	WG1761389

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.11	T8	1	10/22/2021 12:00	WG1759727

Sample Narrative:

L1418698-02 WG1759727: 8.11 at 20.1C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	1130		10.0	1	10/20/2021 18:30	WG1759895

Sample Narrative:

L1418698-02 WG1759895: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	2300		0.426	2.50	5	10/22/2021 10:06	WG1760886
Cadmium	U		0.0471	0.500	1	10/21/2021 20:36	WG1760886
Copper	8.04		0.400	2.00	1	10/21/2021 20:36	WG1760886
Lead	9.68		0.208	0.500	1	10/21/2021 20:36	WG1760886
Nickel	6.55		0.132	2.00	1	10/21/2021 20:36	WG1760886
Selenium	U		0.764	2.00	1	10/21/2021 20:36	WG1760886
Silver	U		0.127	1.00	1	10/21/2021 20:36	WG1760886
Zinc	26.4		0.832	5.00	1	10/21/2021 20:36	WG1760886

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	0.518		0.0167	0.200	1	10/22/2021 12:55	WG1759166

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	10.5		0.100	1.00	5	10/21/2021 18:48	WG1760910

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	0.0318	J	0.0217	0.100	1	10/25/2021 15:47	WG1762535
(S) a,a,a-Trifluorotoluene(FID)	*100*			*62.0-128*		*10/25/2021 15:47*	WG1762535

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	10/21/2021 18:35	WG1761264
Toluene	U		0.00130	0.00500	1	10/21/2021 18:35	WG1761264
Ethylbenzene	U		0.000737	0.00250	1	10/21/2021 18:35	WG1761264
Xylenes, Total	U		0.000880	0.00650	1	10/21/2021 18:35	WG1761264
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/21/2021 18:35	WG1761264
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/21/2021 18:35	WG1761264
(S) Toluene-d8	*105*			*75.0-131*		*10/21/2021 18:35*	WG1761264
(S) 4-Bromofluorobenzene	*92.9*			*67.0-138*		*10/21/2021 18:35*	WG1761264
(S) 1,2-Dichloroethane-d4	*106*			*70.0-130*		*10/21/2021 18:35*	WG1761264

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	15.8		1.61	4.00	1	10/24/2021 19:31	WG1761817
C28-C36 Motor Oil Range	25.9		0.274	4.00	1	10/24/2021 19:31	WG1761817
(S) o-Terphenyl	*84.2*			*18.0-148*		*10/24/2021 19:31*	WG1761817

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	10/23/2021 07:44	WG1761911
Acenaphthene	U		0.00209	0.00600	1	10/23/2021 07:44	WG1761911
Acenaphthylene	U		0.00216	0.00600	1	10/23/2021 07:44	WG1761911
Benzo(a)anthracene	U		0.00173	0.00600	1	10/23/2021 07:44	WG1761911
Benzo(a)pyrene	U		0.00179	0.00600	1	10/23/2021 07:44	WG1761911
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/23/2021 07:44	WG1761911
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	10/23/2021 07:44	WG1761911
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/23/2021 07:44	WG1761911
Chrysene	U		0.00232	0.00600	1	10/23/2021 07:44	WG1761911
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/23/2021 07:44	WG1761911
Fluoranthene	U		0.00227	0.00600	1	10/23/2021 07:44	WG1761911
Fluorene	U		0.00205	0.00600	1	10/23/2021 07:44	WG1761911
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/23/2021 07:44	WG1761911
Naphthalene	U		0.00408	0.0200	1	10/23/2021 07:44	WG1761911
Phenanthrene	U		0.00231	0.00600	1	10/23/2021 07:44	WG1761911
Pyrene	U		0.00200	0.00600	1	10/23/2021 07:44	WG1761911
1-Methylnaphthalene	U		0.00449	0.0200	1	10/23/2021 07:44	WG1761911
2-Methylnaphthalene	0.00511	J	0.00427	0.0200	1	10/23/2021 07:44	WG1761911
2-Chloronaphthalene	U		0.00466	0.0200	1	10/23/2021 07:44	WG1761911
(S) p-Terphenyl-d14	*90.5*			*23.0-120*		*10/23/2021 07:44*	WG1761911
(S) Nitrobenzene-d5	*60.7*			*14.0-149*		*10/23/2021 07:44*	WG1761911
(S) 2-Fluorobiphenyl	*63.2*			*34.0-125*		*10/23/2021 07:44*	WG1761911

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	9.93		1	10/22/2021 11:48	WG1759169

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	10/22/2021 13:57	WG1761389

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	9.12	T8	1	10/22/2021 12:00	WG1759727

Sample Narrative:

L1418698-03 WG1759727: 9.12 at 19.9C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	778		10.0	1	10/20/2021 18:30	WG1759895

Sample Narrative:

L1418698-03 WG1759895: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	494		0.0852	0.500	1	10/21/2021 20:39	WG1760886
Cadmium	0.253	J	0.0471	0.500	1	10/21/2021 20:39	WG1760886
Copper	8.73		0.400	2.00	1	10/21/2021 20:39	WG1760886
Lead	8.75		0.208	0.500	1	10/21/2021 20:39	WG1760886
Nickel	11.5		0.132	2.00	1	10/21/2021 20:39	WG1760886
Selenium	U		0.764	2.00	1	10/21/2021 20:39	WG1760886
Silver	U		0.127	1.00	1	10/21/2021 20:39	WG1760886
Zinc	39.1		0.832	5.00	1	10/21/2021 20:39	WG1760886

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	0.438		0.0167	0.200	1	10/22/2021 12:58	WG1759166

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.57		0.100	1.00	5	10/21/2021 18:51	WG1760910

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	0.0409	B J	0.0217	0.100	1	10/21/2021 17:04	WG1760784
(S) a,a,a-Trifluorotoluene(FID)	*96.1*			*77.0-120*		*10/21/2021 17:04*	WG1760784

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	10/21/2021 18:54	WG1761264
Toluene	U		0.00130	0.00500	1	10/21/2021 18:54	WG1761264
Ethylbenzene	U		0.000737	0.00250	1	10/21/2021 18:54	WG1761264
Xylenes, Total	U		0.000880	0.00650	1	10/21/2021 18:54	WG1761264
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/21/2021 18:54	WG1761264
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/21/2021 18:54	WG1761264
(S) Toluene-d8	*103*			*75.0-131*		*10/21/2021 18:54*	WG1761264
(S) 4-Bromofluorobenzene	*94.7*			*67.0-138*		*10/21/2021 18:54*	WG1761264
(S) 1,2-Dichloroethane-d4	*111*			*70.0-130*		*10/21/2021 18:54*	WG1761264

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	U		1.61	4.00	1	10/24/2021 18:52	WG1761817
C28-C36 Motor Oil Range	0.577	J	0.274	4.00	1	10/24/2021 18:52	WG1761817
(S) o-Terphenyl	*83.0*			*18.0-148*		*10/24/2021 18:52*	WG1761817

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	10/23/2021 08:04	WG1761911
Acenaphthene	U		0.00209	0.00600	1	10/23/2021 08:04	WG1761911
Acenaphthylene	U		0.00216	0.00600	1	10/23/2021 08:04	WG1761911
Benzo(a)anthracene	U		0.00173	0.00600	1	10/23/2021 08:04	WG1761911
Benzo(a)pyrene	U		0.00179	0.00600	1	10/23/2021 08:04	WG1761911
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/23/2021 08:04	WG1761911
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	10/23/2021 08:04	WG1761911
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/23/2021 08:04	WG1761911
Chrysene	U		0.00232	0.00600	1	10/23/2021 08:04	WG1761911
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/23/2021 08:04	WG1761911
Fluoranthene	U		0.00227	0.00600	1	10/23/2021 08:04	WG1761911
Fluorene	U		0.00205	0.00600	1	10/23/2021 08:04	WG1761911
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/23/2021 08:04	WG1761911
Naphthalene	U		0.00408	0.0200	1	10/23/2021 08:04	WG1761911
Phenanthrene	U		0.00231	0.00600	1	10/23/2021 08:04	WG1761911
Pyrene	U		0.00200	0.00600	1	10/23/2021 08:04	WG1761911
1-Methylnaphthalene	U		0.00449	0.0200	1	10/23/2021 08:04	WG1761911
2-Methylnaphthalene	U		0.00427	0.0200	1	10/23/2021 08:04	WG1761911
2-Chloronaphthalene	U		0.00466	0.0200	1	10/23/2021 08:04	WG1761911
(S) p-Terphenyl-d14	*80.1*			*23.0-120*		*10/23/2021 08:04*	WG1761911
(S) Nitrobenzene-d5	*52.4*			*14.0-149*		*10/23/2021 08:04*	WG1761911
(S) 2-Fluorobiphenyl	*59.5*			*34.0-125*		*10/23/2021 08:04*	WG1761911

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	3.73		1	10/22/2021 11:51	WG1759169

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	10/22/2021 14:02	WG1761389

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.45	T8	1	10/22/2021 12:00	WG1759727

Sample Narrative:

L1418698-04 WG1759727: 8.45 at 19.9C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	560		10.0	1	10/20/2021 18:30	WG1759895

Sample Narrative:

L1418698-04 WG1759895: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	186		0.0852	0.500	1	10/21/2021 20:42	WG1760886
Cadmium	0.553		0.0471	0.500	1	10/21/2021 20:42	WG1760886
Copper	28.7		0.400	2.00	1	10/21/2021 20:42	WG1760886
Lead	39.7		0.208	0.500	1	10/21/2021 20:42	WG1760886
Nickel	13.5		0.132	2.00	1	10/21/2021 20:42	WG1760886
Selenium	1.72	J	0.764	2.00	1	10/21/2021 20:42	WG1760886
Silver	U		0.127	1.00	1	10/21/2021 20:42	WG1760886
Zinc	57.3		0.832	5.00	1	10/21/2021 20:42	WG1760886

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	1.28		0.0167	0.200	1	10/22/2021 13:00	WG1759166

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	49.8		0.100	1.00	5	10/21/2021 18:55	WG1760910

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	10/21/2021 17:28	WG1760784
(S) a,a,a-Trifluorotoluene(FID)	*95.9*			*77.0-120*		*10/21/2021 17:28*	WG1760784

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	10/21/2021 19:13	WG1761264
Toluene	U		0.00130	0.00500	1	10/21/2021 19:13	WG1761264
Ethylbenzene	U		0.000737	0.00250	1	10/21/2021 19:13	WG1761264
Xylenes, Total	U		0.000880	0.00650	1	10/21/2021 19:13	WG1761264
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/21/2021 19:13	WG1761264
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/21/2021 19:13	WG1761264
(S) Toluene-d8	*103*			*75.0-131*		*10/21/2021 19:13*	WG1761264
(S) 4-Bromofluorobenzene	*93.4*			*67.0-138*		*10/21/2021 19:13*	WG1761264
(S) 1,2-Dichloroethane-d4	*106*			*70.0-130*		*10/21/2021 19:13*	WG1761264

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	1.80	J	1.61	4.00	1	10/24/2021 19:18	WG1761817
C28-C36 Motor Oil Range	2.59	J	0.274	4.00	1	10/24/2021 19:18	WG1761817
(S) o-Terphenyl	*64.8*			*18.0-148*		*10/24/2021 19:18*	WG1761817

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	10/23/2021 08:24	WG1761911
Acenaphthene	U		0.00209	0.00600	1	10/23/2021 08:24	WG1761911
Acenaphthylene	U		0.00216	0.00600	1	10/23/2021 08:24	WG1761911
Benzo(a)anthracene	U		0.00173	0.00600	1	10/23/2021 08:24	WG1761911
Benzo(a)pyrene	U		0.00179	0.00600	1	10/23/2021 08:24	WG1761911
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/23/2021 08:24	WG1761911
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	10/23/2021 08:24	WG1761911
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/23/2021 08:24	WG1761911
Chrysene	U		0.00232	0.00600	1	10/23/2021 08:24	WG1761911
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/23/2021 08:24	WG1761911
Fluoranthene	U		0.00227	0.00600	1	10/23/2021 08:24	WG1761911
Fluorene	U		0.00205	0.00600	1	10/23/2021 08:24	WG1761911
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/23/2021 08:24	WG1761911
Naphthalene	U		0.00408	0.0200	1	10/23/2021 08:24	WG1761911
Phenanthrene	U		0.00231	0.00600	1	10/23/2021 08:24	WG1761911
Pyrene	U		0.00200	0.00600	1	10/23/2021 08:24	WG1761911
1-Methylnaphthalene	U		0.00449	0.0200	1	10/23/2021 08:24	WG1761911
2-Methylnaphthalene	U		0.00427	0.0200	1	10/23/2021 08:24	WG1761911
2-Chloronaphthalene	U		0.00466	0.0200	1	10/23/2021 08:24	WG1761911
(S) p-Terphenyl-d14	*72.7*			*23.0-120*		*10/23/2021 08:24*	WG1761911
(S) Nitrobenzene-d5	*50.8*			*14.0-149*		*10/23/2021 08:24*	WG1761911
(S) 2-Fluorobiphenyl	*53.5*			*34.0-125*		*10/23/2021 08:24*	WG1761911

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	3.93		1	10/22/2021 11:59	WG1759169

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	10/22/2021 14:07	WG1761389

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.08	T8	1	10/22/2021 15:25	WG1759752

Sample Narrative:

L1418698-05 WG1759752: 8.08 at 19.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	757		10.0	1	10/20/2021 18:30	WG1759895

Sample Narrative:

L1418698-05 WG1759895: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	1330		0.0852	0.500	1	10/21/2021 20:44	WG1760886
Cadmium	0.0563	J	0.0471	0.500	1	10/21/2021 20:44	WG1760886
Copper	9.66		0.400	2.00	1	10/21/2021 20:44	WG1760886
Lead	11.2		0.208	0.500	1	10/21/2021 20:44	WG1760886
Nickel	7.30		0.132	2.00	1	10/21/2021 20:44	WG1760886
Selenium	U		0.764	2.00	1	10/21/2021 20:44	WG1760886
Silver	U		0.127	1.00	1	10/21/2021 20:44	WG1760886
Zinc	33.1		0.832	5.00	1	10/21/2021 20:44	WG1760886

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	0.504		0.0167	0.200	1	10/22/2021 13:03	WG1759166

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	9.65		0.100	1.00	5	10/21/2021 18:58	WG1760910

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	0.0637	B J	0.0217	0.100	1	10/21/2021 17:51	WG1760784
(S) a,a,a-Trifluorotoluene(FID)	*95.5*			*77.0-120*		*10/21/2021 17:51*	WG1760784

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	10/21/2021 19:32	WG1761264
Toluene	U		0.00130	0.00500	1	10/21/2021 19:32	WG1761264
Ethylbenzene	U		0.000737	0.00250	1	10/21/2021 19:32	WG1761264
Xylenes, Total	U		0.000880	0.00650	1	10/21/2021 19:32	WG1761264
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/21/2021 19:32	WG1761264
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/21/2021 19:32	WG1761264
(S) Toluene-d8	*103*			*75.0-131*		*10/21/2021 19:32*	WG1761264
(S) 4-Bromofluorobenzene	*91.8*			*67.0-138*		*10/21/2021 19:32*	WG1761264
(S) 1,2-Dichloroethane-d4	*111*			*70.0-130*		*10/21/2021 19:32*	WG1761264

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	11.4		1.61	4.00	1	10/25/2021 10:39	WG1761817
C28-C36 Motor Oil Range	12.6		0.274	4.00	1	10/25/2021 10:39	WG1761817
(S) o-Terphenyl	*65.3*			*18.0-148*		*10/25/2021 10:39*	WG1761817

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	10/23/2021 08:44	WG1761911
Acenaphthene	U		0.00209	0.00600	1	10/23/2021 08:44	WG1761911
Acenaphthylene	U		0.00216	0.00600	1	10/23/2021 08:44	WG1761911
Benzo(a)anthracene	U		0.00173	0.00600	1	10/23/2021 08:44	WG1761911
Benzo(a)pyrene	U		0.00179	0.00600	1	10/23/2021 08:44	WG1761911
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/23/2021 08:44	WG1761911
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	10/23/2021 08:44	WG1761911
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/23/2021 08:44	WG1761911
Chrysene	U		0.00232	0.00600	1	10/23/2021 08:44	WG1761911
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/23/2021 08:44	WG1761911
Fluoranthene	U		0.00227	0.00600	1	10/23/2021 08:44	WG1761911
Fluorene	0.00322	J	0.00205	0.00600	1	10/23/2021 08:44	WG1761911
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/23/2021 08:44	WG1761911
Naphthalene	0.00917	J	0.00408	0.0200	1	10/23/2021 08:44	WG1761911
Phenanthrene	0.0108		0.00231	0.00600	1	10/23/2021 08:44	WG1761911
Pyrene	0.00449	J	0.00200	0.00600	1	10/23/2021 08:44	WG1761911
1-Methylnaphthalene	0.0143	J	0.00449	0.0200	1	10/23/2021 08:44	WG1761911
2-Methylnaphthalene	0.0308		0.00427	0.0200	1	10/23/2021 08:44	WG1761911
2-Chloronaphthalene	U		0.00466	0.0200	1	10/23/2021 08:44	WG1761911
(S) p-Terphenyl-d14	*74.8*			*23.0-120*		*10/23/2021 08:44*	WG1761911
(S) Nitrobenzene-d5	*55.0*			*14.0-149*		*10/23/2021 08:44*	WG1761911
(S) 2-Fluorobiphenyl	*56.2*			*34.0-125*		*10/23/2021 08:44*	WG1761911

Method Blank (MB)

(MB) R3720240-1 10/22/21 12:52

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

L1418667-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1418667-05 10/22/21 13:20 • (DUP) R3720240-3 10/22/21 13:26

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

L1419731-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1419731-06 10/22/21 15:09 • (DUP) R3720240-8 10/22/21 15:15

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	20.7	8.61	1	82.6	J3	20

Laboratory Control Sample (LCS)

(LCS) R3720240-2 10/22/21 13:00

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	10.0	10.2	102	80.0-120	

L1419731-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1419731-01 10/22/21 14:12 • (MS) R3720240-4 10/22/21 14:18 • (MSD) R3720240-5 10/22/21 14:23

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 %
Hexavalent Chromium	20.0	0.443	17.6	18.7	85.7	91.1	1	75.0-125			5.95	20

L1419731-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1419731-01 10/22/21 14:12 • (MS) R3720240-6 10/22/21 14:28

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	703	0.443	775	110	50	75.0-125	

L1417211-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1417211-01 10/22/21 12:00 • (DUP) R3720096-2 10/22/21 12:00

Analyte	Original Result su	DUP Result su	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
pH	7.82	7.83	1	0.128		1

Sample Narrative:

OS: 7.82 at 20.2C

DUP: 7.83 at 20.4C

L1417784-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1417784-05 10/22/21 12:00 • (DUP) R3720096-3 10/22/21 12:00

Analyte	Original Result su	DUP Result su	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
pH	7.56	7.57	1	0.132		1

Sample Narrative:

OS: 7.56 at 19.8C

DUP: 7.57 at 19.9C

Laboratory Control Sample (LCS)

(LCS) R3720096-1 10/22/21 12:00

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

Sample Narrative:

LCS: 10 at 20.7C

L1418263-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1418263-03 10/22/21 15:25 • (DUP) R3720207-3 10/22/21 15:25

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.32	8.33	1	0.120		1

Sample Narrative:

OS: 8.32 at 19.6C

DUP: 8.33 at 19.8C

Laboratory Control Sample (LCS)

(LCS) R3720207-1 10/22/21 15:25

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	9.97	99.7	99.0-101	

Sample Narrative:

LCS: 9.97 at 19.8C

Method Blank (MB)

(MB) R3719127-1 10/20/21 18:30

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

L1418661-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1418661-04 10/20/21 18:30 • (DUP) R3719127-3 10/20/21 18:30

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	178	179	1	0.560		20

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

L1418661-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1418661-11 10/20/21 18:30 • (DUP) R3719127-4 10/20/21 18:30

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	237	237	1	0.380		20

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

Laboratory Control Sample (LCS)

(LCS) R3719127-2 10/20/21 18:30

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

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3719877-1 10/21/21 20:01

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

Laboratory Control Sample (LCS)

(LCS) R3719877-2 10/21/21 20:03

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	95.5	95.5	80.0-120	
Cadmium	100	92.6	92.6	80.0-120	
Copper	100	94.3	94.3	80.0-120	
Lead	100	94.7	94.7	80.0-120	
Nickel	100	95.0	95.0	80.0-120	
Selenium	100	94.3	94.3	80.0-120	
Silver	20.0	18.0	90.0	80.0-120	
Zinc	100	93.0	93.0	80.0-120	

L1418263-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1418263-01 10/21/21 20:06 • (MS) R3719877-5 10/21/21 20:14 • (MSD) R3719877-6 10/21/21 20:17

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	100	177	261	253	83.3	75.4	1	75.0-125			3.09	20
Cadmium	100	0.320	86.3	95.9	85.9	95.6	1	75.0-125			10.6	20
Copper	100	13.3	99.0	107	85.7	93.9	1	75.0-125			7.90	20
Lead	100	7.51	98.0	106	90.5	98.3	1	75.0-125			7.63	20
Nickel	100	10.3	99.0	108	88.8	97.3	1	75.0-125			8.25	20
Selenium	100	U	83.5	92.6	83.5	92.6	1	75.0-125			10.4	20
Silver	20.0	U	17.0	18.6	84.9	93.2	1	75.0-125			9.33	20
Zinc	100	25.2	103	114	78.2	88.7	1	75.0-125			9.62	20

Method Blank (MB)

(MB) R3720137-1 10/22/21 12:12

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) R3720137-2 10/22/21 12:15 • (LCSD) R3720137-3 10/22/21 12:17

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	1.08	106	108	80.0-120			1.32	20

Method Blank (MB)

(MB) R3719749-1 10/21/21 18:06

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) R3719749-2 10/21/21 18:09

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	89.1	89.1	80.0-120	

L1418263-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1418263-01 10/21/21 18:13 • (MS) R3719749-5 10/21/21 18:22 • (MSD) R3719749-6 10/21/21 18:25

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	5.21	86.2	93.4	81.0	88.2	5	75.0-125			8.05	20

Method Blank (MB)

(MB) R3719931-2 10/21/21 08:48

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0245	J	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*96.8*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3719931-1 10/21/21 07:36

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.42	80.4	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*97.2*	*77.0-120*	

Method Blank (MB)

(MB) R3721267-3 10/25/21 13:00

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)	*100*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3721267-2 10/25/21 12:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.97	90.4	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*107*	*77.0-120*	

Method Blank (MB)

(MB) R3719936-2 10/21/21 11:42

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*104*			*75.0-131*
(S) 4-Bromofluorobenzene	*91.7*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*109*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3719936-1 10/21/21 10:45

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.114	91.2	70.0-123	
Ethylbenzene	0.125	0.109	87.2	74.0-126	
Toluene	0.125	0.110	88.0	75.0-121	
1,2,4-Trimethylbenzene	0.125	0.109	87.2	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.116	92.8	73.0-127	
Xylenes, Total	0.375	0.327	87.2	72.0-127	
(S) Toluene-d8			*102*	*75.0-131*	
(S) 4-Bromofluorobenzene			*94.6*	*67.0-138*	
(S) 1,2-Dichloroethane-d4			*111*	*70.0-130*	

Method Blank (MB)

(MB) R3720724-1 10/24/21 17:08

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	*90.2*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3720724-2 10/24/21 17:21

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	35.3	70.6	50.0-150	
(S) o-Terphenyl			*95.2*	*18.0-148*	

L1418698-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1418698-03 10/24/21 18:52 • (MS) R3720724-3 10/24/21 18:13 • (MSD) R3720724-4 10/24/21 18:26

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	U	45.5	43.3	92.5	88.0	1	50.0-150			4.95	20
(S) o-Terphenyl					*112*	*105*		*18.0-148*				

Method Blank (MB)

(MB) R3720712-2 10/23/21 07:04

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) Nitrobenzene-d5	*47.5*			*14.0-149*
(S) 2-Fluorobiphenyl	*65.8*			*34.0-125*
(S) p-Terphenyl-d14	*111*			*23.0-120*

Laboratory Control Sample (LCS)

(LCS) R3720712-1 10/23/21 06:44

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0594	74.3	50.0-126	
Acenaphthene	0.0800	0.0625	78.1	50.0-120	
Acenaphthylene	0.0800	0.0620	77.5	50.0-120	
Benzo(a)anthracene	0.0800	0.0595	74.4	45.0-120	
Benzo(a)pyrene	0.0800	0.0570	71.3	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0686	85.8	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0661	82.6	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0671	83.9	49.0-125	
Chrysene	0.0800	0.0632	79.0	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0677	84.6	47.0-125	
Fluoranthene	0.0800	0.0608	76.0	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3720712-1 10/23/21 06:44

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0632	79.0	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0630	78.8	46.0-125	
Naphthalene	0.0800	0.0602	75.3	50.0-120	
Phenanthrene	0.0800	0.0622	77.8	47.0-120	
Pyrene	0.0800	0.0627	78.4	43.0-123	
1-Methylnaphthalene	0.0800	0.0613	76.6	51.0-121	
2-Methylnaphthalene	0.0800	0.0592	74.0	50.0-120	
2-Chloronaphthalene	0.0800	0.0621	77.6	50.0-120	
(S) Nitrobenzene-d5			*55.8*	*14.0-149*	
(S) 2-Fluorobiphenyl			*69.7*	*34.0-125*	
(S) p-Terphenyl-d14			*112*	*23.0-120*	

L1418698-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1418698-05 10/23/21 08:44 • (MS) R3720712-3 10/23/21 09:04 • (MSD) R3720712-4 10/23/21 09:25

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0772	U	0.0438	0.0507	56.7	65.3	1	10.0-145			14.6	30
Acenaphthene	0.0772	U	0.0454	0.0533	58.8	68.7	1	14.0-127			16.0	27
Acenaphthylene	0.0772	U	0.0458	0.0530	59.3	68.3	1	21.0-124			14.6	25
Benzo(a)anthracene	0.0772	U	0.0433	0.0515	56.1	66.4	1	10.0-139			17.3	30
Benzo(a)pyrene	0.0772	U	0.0429	0.0517	55.6	66.6	1	10.0-141			18.6	31
Benzo(b)fluoranthene	0.0772	U	0.0451	0.0557	58.4	71.8	1	10.0-140			21.0	36
Benzo(g,h,i)perylene	0.0772	U	0.0450	0.0546	58.3	70.4	1	10.0-140			19.3	33
Benzo(k)fluoranthene	0.0772	U	0.0448	0.0549	58.0	70.7	1	10.0-137			20.3	31
Chrysene	0.0772	U	0.0450	0.0536	58.3	69.1	1	10.0-145			17.4	30
Dibenz(a,h)anthracene	0.0772	U	0.0461	0.0555	59.7	71.5	1	10.0-132			18.5	31
Fluoranthene	0.0772	U	0.0457	0.0534	59.2	68.8	1	10.0-153			15.5	33
Fluorene	0.0772	0.00322	0.0466	0.0556	56.2	67.5	1	11.0-130			17.6	29
Indeno(1,2,3-cd)pyrene	0.0772	U	0.0446	0.0540	57.8	69.6	1	10.0-137			19.1	32
Naphthalene	0.0772	0.00917	0.0466	0.0533	48.5	56.9	1	10.0-135			13.4	27
Phenanthrene	0.0772	0.0108	0.0485	0.0560	48.8	58.2	1	10.0-144			14.4	31
Pyrene	0.0772	0.00449	0.0444	0.0524	51.7	61.7	1	10.0-148			16.5	35
1-Methylnaphthalene	0.0772	0.0143	0.0505	0.0558	46.9	53.5	1	10.0-142			9.97	28
2-Methylnaphthalene	0.0772	0.0308	0.0537	0.0567	29.7	33.4	1	10.0-137			5.43	28
2-Chloronaphthalene	0.0772	U	0.0445	0.0522	57.6	67.3	1	29.0-120			15.9	24
(S) Nitrobenzene-d5					*41.4*	*47.8*		*14.0-149*				
(S) 2-Fluorobiphenyl					*49.8*	*57.5*		*34.0-125*				
(S) p-Terphenyl-d14					*77.4*	*94.1*		*23.0-120*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
T8	Sample(s) received past/too close to holding time expiration.

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.

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf
Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

K156

ALL BOLD OUTLINED AREAS are for LAB USE ONLY

Company: Caerus Oil and Gas LLC	Billing Information: Info on file
Address: Info on file	
Report To: Jake Janicek, Brett Middleton, Blair Rollins	Email To: info on file
Copy To: Chris McKisson, remediation@confluence-cc.com	Site Collection Info/Address:
Customer Project Name/Number: B9E Wellhead P&A	State: CO / County/City: Garfield / Time Zone Collected: [ ]PT [X]MT [ ]CT [ ]ET
Phone: / Email:	Site/Facility ID #: B9E / Compliance Monitoring? [ ] Yes [X] No
Collected By (print): Andrew Smith	Purchase Order # : / Quote #: / DW PWS ID #: / DW Location Code:
Collected By (signature): AS	Turnaround Date Required: Standard 5-day / Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: (Expedite Charges Apply) [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day / Field Filtered (if applicable): [ ] Yes [ ] No / Analysis: _____

Container Preservative Type **

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Container Type: Plastic (P) or Glass (G)	Table 915-1 VOCs	TPH (ORO, GRO, DRO)	Table 915-1 Metal's	Table 915-1 PAHs	EC, SAR, Arsenic	Boron (Hot Water Soluble Soil)	Lab Sample # / Comments
20211013-B9E (PH_S@6')	SL	G	10/13/2021	0950				2	G	X	X	X	X	X	X	L1418698-01
20211013-B9E (PH_E@6')	SL	G	10/13/2021	1015				2	G	X	X	X	X	X	X	-02
20211013-B9E (PH_N@6')	SL	G	10/13/2021	1025				2	G	X	X	X	X	X	X	-03
20211013-B9E (BASE@15')	SL	G	10/13/2021	1115				2	G	X	X	X	X	X	X	-04
20211013-B9E (PH_W@6')	SL	G	10/13/2021	1130				2	G	X	X	X	X	X	X	-09

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples Received on Ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in Holding Time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

LAB USE ONLY:

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #:

Samples received via: FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:

Temp Blank Received: Y N NA

Therm ID#: A7

Cooler 1 Temp Upon Receipt: 3.4 °C

Cooler 1 Therm Corr. Factor: +0.0 °C

Cooler 1 Corrected Temp: 3.4 °C

Comments:

Relinquished by/Company: (Signature) AS	Date/Time: 10-14-21/1200	Received by/Company: (Signature)	Date/Time: 10/14 1200
Relinquished by/Company: (Signature)	Date/Time: 10/14 1500	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time: 10-15-21 0930

MTJL LAB USE ONLY

Table #:

Acctnum:

Template:

Prelogin:

PM:

PB:

Trip Blank Received: Y N NA

HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: ____ of: ____