February 6, 2024

Blair Rollins
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Report of Work Completed – Dumpline Release

ECMC Location Name (ID)	CHEVRON D20 696/ (335161)
Client Location Name	D20 696
ECMC Spill/Release Point ID	485745
Legal Description	NWNW Sec. 20 R6S-T96W
Coordinates (Lat/Long)	39.513708 / -108.139299
County	Garfield County, Colorado

Mr. Rollins,

Confluence Compliance Companies, LLC (Confluence) prepared this Report of Work Completed (ROWC) for Caerus Oil & Gas LLC (Caerus) to document remedial investigation activities associated with a recent release at the D20 696 well pad (Location). The Location is 6 miles northwest of Parachute, Colorado, in Garfield County as illustrated in the attached Topographic Map. Additional information on the Location and the associated remediation project is provided in the title block above, the attached Site Diagrams, and laboratory analytical reports. This ROWC provides background on the Location, methods used to complete the investigation, results of the investigation, and recommendations for how to proceed with this information.

Background

On December 14, 2023, an inspection conducted on the Location identified gas leaking from the dumpline at a point between the separators and storage tanks. Wells were shut in to control the incident. An unknown amount of produced fluid was released from the dumpline. The release was reported via Energy & Carbon Management Commission (ECMC) Form 19 Document 403626237 to open Spill/Release Point ID 485745.

Methodology

On January 18, 2024, Confluence provided initial sampling support to characterize soil impacts at the point of release (POR). Using hand tools, one soil sample was collected from directly beneath the POR at 5 feet below ground surface (bgs). The soil sample was characterized using visual and olfactory observations, and field-screened for volatile organic compounds using a photoionization detector (PID).

The sample was collected in a laboratory provided jar, immediately placed on ice, shipped under a completed chain-of-custody form to Pace Analytical Services (Pace), and analyzed for ECMC Table 915-1 soil constituents of concern.

Results

These results summarize observations from onsite remedial 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 site investigation 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 high-plasticity inorganic clays with gravel dispersed throughout. Precise depth to groundwater data at the Location is unavailable. The nearest available groundwater measurement is from Division of Water Resources (DWR) well permit 2345968, positioned approximately 0.75 miles south of the site at an elevation of 5,560 feet above mean sea level (AMSL). This well has a static water level of 52.36 feet bgs. The Location sits at an elevation of 5,835 feet AMSL. Although exact depth to groundwater at the Location is unknown, it can be inferred to be greater than 300 feet bgs. There are no relevant upgradient groundwater measurement points. Groundwater is anticipated to flow east towards Parachute Creek, and eventually the Colorado River, approximately 6.85 miles southeast of the location.

Initial Release Characterization Results

Field screening of the POR characterization sample registered a PID measurement of 2,271 parts per million (ppm). Analytical results of the POR characterization sample indicate compliance with Table 915-1 Residential Soil Screening Levels (RSSLs) except for total petroleum hydrocarbons (TPH), benzene, ethylbenzene, xylenes, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, sodium adsorption ratio (SAR), and arsenic. TPH exceeds at 4,476 milligrams per kilogram (mg/kg), benzene exceeds at 14.5 mg/kg, ethylbenzene exceeds at 18.3 mg/kg, and xylenes exceed at 225 mg/kg. 1,2,4-trimethylbenzene exceeds at 31.5 mg/kg while 1,3,5-trimethylbenzene exceeds at 32.2 mg/kg. SAR exceeds at 7.35. Arsenic exceeds at 6.15 mg/kg.

Analysis and Recommendations

Due to the estimated depth to groundwater of greater than 300 feet bgs, Confluence recommends that Caerus request to compare analytical results of site investigation to Table 915-1 RSSLs as no reasonable pathway to groundwater appears to exist.

Although levels of SAR and arsenic values exceeding Table 915-1 RSSLs remain within the investigation area, background data collected from the Location indicate levels of these constituents elevated above allowable limits in native soil. According to the United States Geologic Survey (USGS) and National Resource Conservation Service (NRCS), both the release investigation area and all collected background samples are located within the Torriorthents-Camborthids-Rock outcrop complex soil classification and from a distance of no greater than 350 feet from the Location. Additionally, background samples were collected from an elevation ranging from 5,765 feet AMSL to 5,945 feet AMSL, with a majority of the samples being collected between 5,830 and 5,580 feet AMSL. The elevation of the release area is approximately 5,835 feet AMSL and extends to a depth of 5 feet bgs, or 5,830 feet AMSL. Due to these considerations, it is reasonable to conclude that the background sample data is

representative of soil conditions at the Location. In accordance with Table 915-1 Footnote 1, Confluence recommends that Caerus request alternative allowable limits for SAR and arsenic of 62.5 and 16.4 mg/kg, respectively.

Assuming the proposed soil screening levels and alternative allowable limits are approved, levels of TPH, benzene, ethylbenzene, xylenes, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene exceeding allowable limits remain undelineated vertically and horizontally in the investigation area. Based on these results, Confluence recommends additional site investigation to delineate soil impacts. Prior to additional investigation, Confluence recommends Caerus request consideration of Rule 915.e.2.(C) to request a reduced analyte list of TPH, benzene, toluene, ethylbenzene, xylenes (BTEX), 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene based on POR characterization sample results.

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 us.

Regards,

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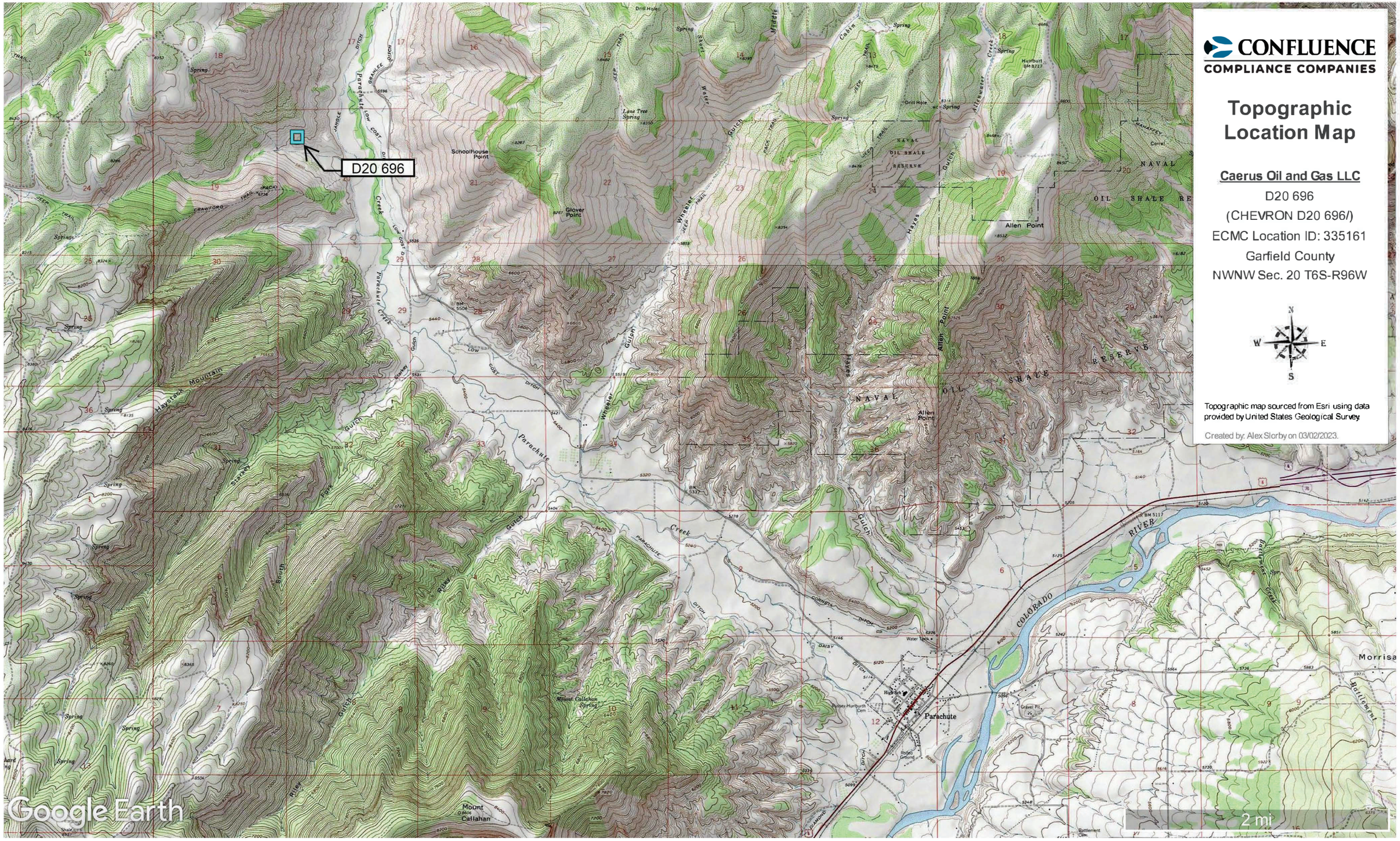
Attachments

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



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Topographic Location Map

Caerus Oil and Gas LLC

D20 696

(CHEVRON D20 696/)

ECMC Location ID: 335161

Garfield County

NWNW Sec. 20 T6S-R96W

Topographic map sourced from Esri using data provided by United States Geological Survey.

Created by: Alex Slorby on 03/02/2023.

CONFLUENCE
COMPLIANCE COMPANIES

Site Diagram
Initial Investigation

Caerus Oil and Gas LLC
D20 696
(CHEVRON D20 696/)
ECMC Location ID: 335161
Garfield County
NWNW Sec. 20 T6S-R96W

N
W E
S

Legend
Soil Sample
Excavation Extent – 01/18/2024

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: Alex Slorby on 02/05/2024.

CONFLUENCE
COMPLIANCE COMPANIES

Site Diagram
Background Samples

Caerus Oil and Gas LLC
D20 696
(CHEVRON D20 696/)
ECMC Location ID: 335161
Garfield County
NWNW Sec. 20 T6S-R96W

N
W E
S

Legend
- Background Soil Sample
- Excavation Extent – 01/18/2024

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: Alex Slorby on 02/05/2024.

Photographic Log

Remediation Investigation
D20 696 (ECMC Location ID: 335161)

Point of Release Excavation Area: View East

Point of Release Excavation: View West

Photographic Log

Remediation Investigation
D20 696 (ECMC Location ID: 335161)

Point of Release

Photographic Log

Remediation Investigation
D20 696 (ECMC Location ID: 335161)

20240118-D20 696-(POR)@5 Sample Location

Laboratory Results Summary Table - Soil
D20 696 Dumpline Release

ECMC Soil Screening Levels					Organic Compounds (mg/kg [ppm])																								
			ECMC Table 915-1 Residential -->	NA	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	1.1	18	24	2	180
Sample Date	Solid/Soil Source (Equipment) [Vault/Sump, Separator, Tank Battery, Dump Line, Pit, Cuttings, Background, etc.]	Depth - Z (feet) (NEGATIVE VALUE) below ground surface (bgs)	Sample ID	PID (ppm)	TPH (total volatile and extractable petroleum hydrocarbons) (GRO+DRO+ORO)	TPH-GRO (C6-C13) Low Fraction	TPH-DRO (C10-C28) High Fraction	TPH-ORO (C28-C35) 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	Dibenz(A,H)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3,C,D)pyrene	1- Methylnaphthalene	2- Methylnaphthalene	Naphthalene	Pyrene
1/18/2024	Dumpline	-5	20240118-D20 696-(POR)@5	2271	4476	4270	200	6.10	14.5	122	18.3	225	31.5	32.2	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	0.0220	0.0721	0.0461	<0.00600
11/15/2023	Background	-18	CP-D20-1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-18	CP-D20-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-12	CP-D20-3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-18	CP-D20-4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-19	CP-D20-5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-20	CP-D20-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-20	CP-D20-7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-16	CP-D20-REF 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-16	CP-D20-REF 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-16	CP-D20-REF 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-17	CP-D20-REF 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-17	CP-D20-REF 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-17	CP-D20-REF 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-17	CP-D20-REF 3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-17	CP-D20-REF 3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-17	CP-D20-REF 3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-18	CP-D20-1R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-18	CP-D20-1R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-18	CP-D20-1R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10/10/2023	Background	-1.5	20231010-NPRBG-(D20 696-W-10:26)@1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10/10/2023	Background	-1.5	20231010-NPRBG-(D20 696-W-10:26)@1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10/10/2023	Background	-1.5	20231010-NPRBG-(D20 696-W-10:26)@1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10/10/2023	Background	-2	20231010-NPRBG-(D20 696-W-10:43)@2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	nA	NA	NA	NA	NA
10/10/2023	Background	-2	20231010-NPRBG-(D20 696-W-10:43)@2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10/10/2023	Background	-2	20231010-NPRBG-(D20 696-W-10:43)@2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10/10/2023	Background	-2	20231010-NPRBG-(D20 696-W-10:57)@2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10/10/2023	Background	-2	20231010-NPRBG-(D20 696-W-10:57)@2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10/10/2023	Background	-2	20231010-NPRBG-(D20 696-W-10:57)@2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4/17/2023	Background	-0.25	20230417-NPRBG-(D20 696-N01)@0.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4/17/2023	Background	-0.25	20230417-NPRBG-(D20 696-W01)@0.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2/28/2023	Background	-1	20230228_D20_BG01 @ 1FT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2/28/2023	Background	-1	20230228_D20_BG02 @ 1FT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2/28/2023	Background	-1	20230228_D20_BG03 @ 1FT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2/28/2023	Background	-1	20230228_D20_BG04 @ 1FT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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
D20 696 Dumpline Release

2/5/2024

				ECMC Soil Screening Levels	Soil Suitability for Reclamation				Metals (mg/kg [ppm])								
				ECMC Table 915-1 Residential -->	4	6	6-8.3	2	0.68	15000	71	0.3	3100	400	1500	390	390	23000
Sample Date	Solid/Soil Source (Equipment) [Vault/Sump, Separator, Tank Battery, Dump Line, Pit, Cuttings, Background, etc.]	Depth - Z (feet) (NEGATIVE VALUE) below ground surface (bgs)	Sample ID	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
1/18/2024	Dumpline	-5	20240118-D20 696-(POR)@5	3.940	7.35	7.93	0.465	6.15	169	<1.00	<1.00	16.0	10.4	21.0	<2.50	<0.500	63.7
11/15/2023	Background	-18	CP-D20-1	11.900	23.9	8.09	NA	10.9	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-18	CP-D20-2	12.600	18.0	8.01	NA	5.36	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-12	CP-D20-3	19.300	52.5	8.17	NA	6.31	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-18	CP-D20-4	17.700	62.5	8.33	NA	4.97	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-19	CP-D20-5	18.600	38.7	8.26	NA	4.75	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-20	CP-D20-6	15.800	44.0	8.32	NA	5.37	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-20	CP-D20-7	16.400	38.7	8.18	NA	5.62	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-16	CP-D20-REF 1	NA	NA	8.45	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-16	CP-D20-REF 1	NA	NA	8.45	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-16	CP-D20-REF 1	NA	NA	8.46	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-17	CP-D20-REF 2	NA	NA	8.51	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-17	CP-D20-REF 2	NA	NA	8.44	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-17	CP-D20-REF 2	NA	NA	8.45	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-17	CP-D20-REF 3	NA	NA	8.61	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-17	CP-D20-REF 3	NA	NA	8.59	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-17	CP-D20-REF 3	NA	NA	8.57	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-18	CP-D20-1R	NA	NA	NA	7.95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-18	CP-D20-1R	NA	NA	NA	7.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/15/2023	Background	-18	CP-D20-1R	NA	NA	NA	8.56	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10/10/2023	Background	-1.5	20231010-NPRBG-(D20 696-W-10:26)@1.5	NA	NA	NA	NA	9.05	NA	NA	NA	NA	NA	NA	NA	NA	NA
10/10/2023	Background	-1.5	20231010-NPRBG-(D20 696-W-10:26)@1.5	NA	NA	NA	NA	14.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
10/10/2023	Background	-1.5	20231010-NPRBG-(D20 696-W-10:26)@1.5	NA	NA	NA	NA	14.8	NA	NA	NA	NA	NA	NA	NA	NA	NA
10/10/2023	Background	-2	20231010-NPRBG-(D20 696-W-10:43)@2	NA	NA	NA	NA	13.4	NA	NA	NA	NA	NA	NA	NA	NA	NA
10/10/2023	Background	-2	20231010-NPRBG-(D20 696-W-10:43)@2	NA	NA	NA	NA	14.3	NA	NA	NA	NA	NA	NA	NA	NA	NA
10/10/2023	Background	-2	20231010-NPRBG-(D20 696-W-10:43)@2	NA	NA	NA	NA	12.4	NA	NA	NA	NA	NA	NA	NA	NA	NA
10/10/2023	Background	-2	20231010-NPRBG-(D20 696-W-10:57)@2	NA	NA	NA	NA	7.48	NA	NA	NA	NA	NA	NA	NA	NA	NA
10/10/2023	Background	-2	20231010-NPRBG-(D20 696-W-10:57)@2	NA	NA	NA	NA	7.81	NA	NA	NA	NA	NA	NA	NA	NA	NA
10/10/2023	Background	-2	20231010-NPRBG-(D20 696-W-10:57)@2	NA	NA	NA	NA	9.27	NA	NA	NA	NA	NA	NA	NA	NA	NA
4/17/2023	Background	-0.25	20230417-NPRBG-(D20 696-N01)@0.25	6.350	33.7	7.95	1.56	7.09	155	0.613	<1.00	15.5	12.4	14.7	0.851	0.0907	59.5
4/17/2023	Background	-0.25	20230417-NPRBG-(D20 696-W01)@0.25	12.400	30.7	8.22	0.394	2.18	31.7	0.376	<1.00	11.5	8.58	9.86	0.440	<0.500	42.4
2/28/2023	Background	-1	20230228_D20_BG01 @ 1FT	0.173	1.83	9.02	0.809	6.70	192	0.470	<1.00	13.3	10.3	14.0	0.639	<0.500	54.7
2/28/2023	Background	-1	20230228_D20_BG02 @ 1FT	0.294	0.391	8.00	0.759	16.4	269	0.537	<1.00	11.2	10.7	8.68	0.957	<0.500	28.7
2/28/2023	Background	-1	20230228_D20_BG03 @ 1FT	1.210	0.0814	7.81	0.670	4.30	90.2	0.763	<1.00	15.4	12.2	20.1	1.10	<0.500	68.5
2/28/2023	Background	-1	20230228_D20_BG04 @ 1FT	0.651	0.0447	7.57	0.759	1.79	58.0	0.706	<1.00	29.2	17.4	19.2	0.563	0.109	90.6

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

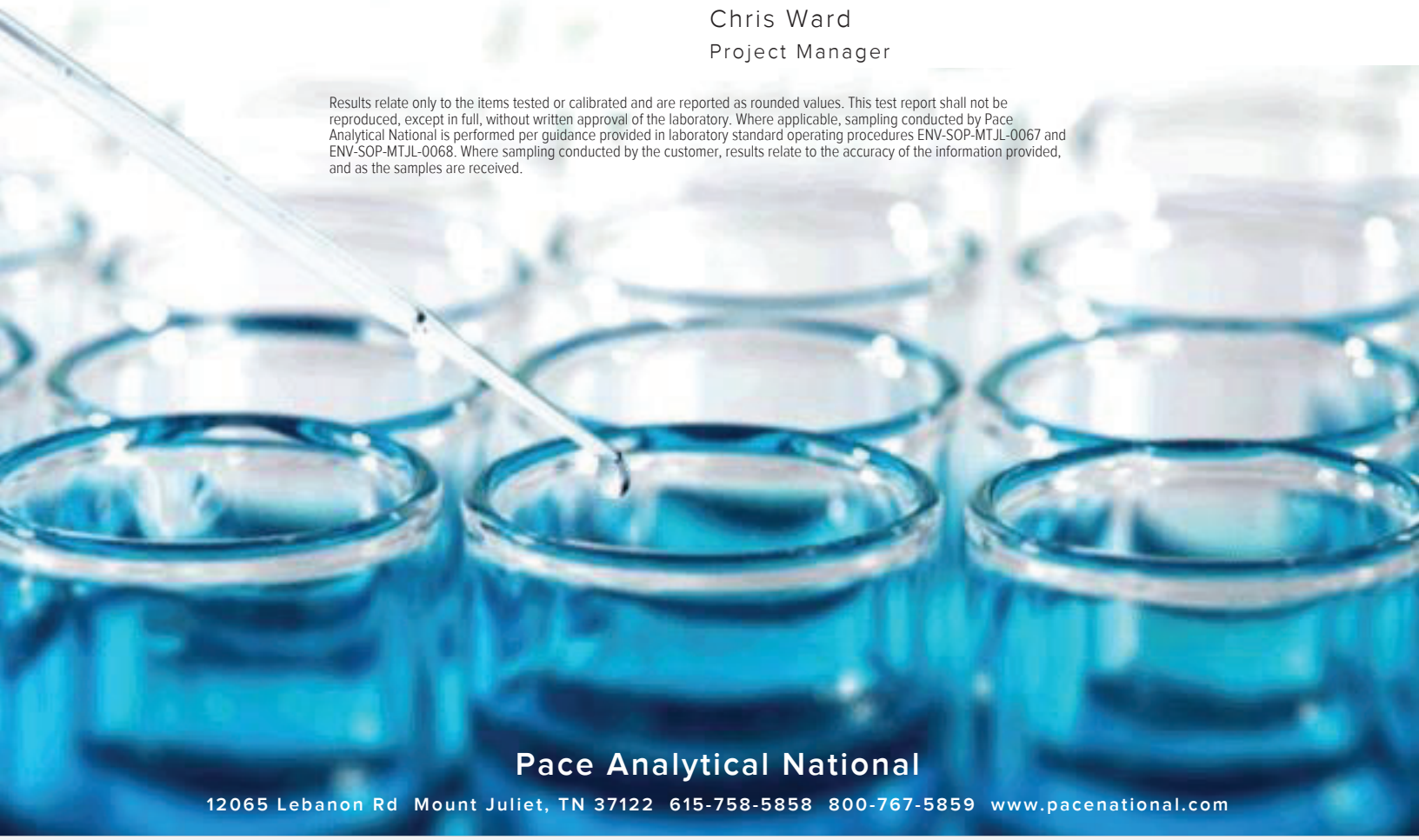
January 31, 2024

Caerus Oil and Gas

Sample Delivery Group:	L1698093
Samples Received:	01/23/2024
Project Number:	D20 696 DUMPLINE REL
Description:	D20 696 Dumpline Release
Site:	D20 696
Report To:	Jake J. / Brett M. / Blair R. / Andy V. 143 Diamond Avenue Parachute, CO 81635

Entire Report Reviewed By: Chris Ward

Chris Ward
Project Manager



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

TABLE OF CONTENTS

SAMPLE SUMMARY

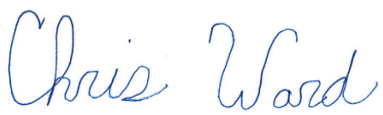
20240118-D20 696-(POR)@5 L1698093-01 Solid

Collected by: Andrew Smith
Collected date/time: 01/18/24 11:45
Received date/time: 01/23/24 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2213339	1	01/28/24 11:28	01/28/24 11:28	DJS	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2211966	1	01/24/24 17:22	01/25/24 09:47	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2212488	1	01/24/24 16:41	01/25/24 10:00	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2213346	1	01/25/24 16:56	01/27/24 13:30	KRB	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2213340	1	01/27/24 09:50	01/27/24 19:09	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2212508	5	01/24/24 16:25	01/25/24 00:41	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2216123	5000	01/24/24 21:42	01/31/24 05:08	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2214063	40	01/24/24 21:42	01/26/24 19:17	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2215085	800	01/24/24 21:42	01/28/24 23:04	JBE	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2211903	1	01/24/24 15:54	01/25/24 14:52	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2211913	1	01/24/24 16:59	01/25/24 20:24	AGW	Mt. Juliet, TN

CASE NARRATIVE

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



Chris Ward
Project Manager

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	SAR				
Sodium Adsorption Ratio	7.35		1	01/28/2024 11:28	WG2213339

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Hexavalent Chromium	ND		1.00	1	01/25/2024 09:47	WG2211966

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	pH				
pH	7.93	T8	1	01/25/2024 10:00	WG2212488

Sample Narrative:

L1698093-01 WG2212488: 7.93 at 20.4C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	3940		10.0	1	01/27/2024 13:30	WG2213346

Sample Narrative:

L1698093-01 WG2213346: at 25C

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/l		mg/l			
Hot Water Sol. Boron	0.465		0.200	1	01/27/2024 19:09	WG2213340

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Arsenic	6.15		1.00	5	01/25/2024 00:41	WG2212508
Barium	169		2.50	5	01/25/2024 00:41	WG2212508
Cadmium	ND		1.00	5	01/25/2024 00:41	WG2212508
Copper	16.0		5.00	5	01/25/2024 00:41	WG2212508
Lead	10.4		2.00	5	01/25/2024 00:41	WG2212508
Nickel	21.0		2.50	5	01/25/2024 00:41	WG2212508
Selenium	ND		2.50	5	01/25/2024 00:41	WG2212508
Silver	ND		0.500	5	01/25/2024 00:41	WG2212508
Zinc	63.7		25.0	5	01/25/2024 00:41	WG2212508

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
TPH (GC/FID) Low Fraction	4270		500	5000	01/31/2024 05:08	WG2216123
(S) a,a,a-Trifluorotoluene(FID)	*91.1*		*77.0-120*		*01/31/2024 05:08*	WG2216123

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	14.5		0.0400	40	01/26/2024 19:17	WG2214063
Toluene	122		4.00	800	01/28/2024 23:04	WG2215085
Ethylbenzene	18.3		0.100	40	01/26/2024 19:17	WG2214063
Xylenes, Total	225		5.20	800	01/28/2024 23:04	WG2215085
1,2,4-Trimethylbenzene	31.5		0.200	40	01/26/2024 19:17	WG2214063
1,3,5-Trimethylbenzene	32.2		0.200	40	01/26/2024 19:17	WG2214063
(S) Toluene-d8	*95.9*		*75.0-131*		*01/26/2024 19:17*	WG2214063
(S) Toluene-d8	*97.6*		*75.0-131*		*01/28/2024 23:04*	WG2215085
(S) 4-Bromofluorobenzene	*109*		*67.0-138*		*01/26/2024 19:17*	WG2214063
(S) 4-Bromofluorobenzene	*90.3*		*67.0-138*		*01/28/2024 23:04*	WG2215085
(S) 1,2-Dichloroethane-d4	*88.4*		*70.0-130*		*01/26/2024 19:17*	WG2214063
(S) 1,2-Dichloroethane-d4	*99.0*		*70.0-130*		*01/28/2024 23:04*	WG2215085

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	200		4.00	1	01/25/2024 14:52	WG2211903
C28-C36 Motor Oil Range	6.10		4.00	1	01/25/2024 14:52	WG2211903
(S) o-Terphenyl	*46.0*		*18.0-148*		*01/25/2024 14:52*	WG2211903

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.00600	1	01/25/2024 20:24	WG2211913
Anthracene	ND		0.00600	1	01/25/2024 20:24	WG2211913
Benzo(a)anthracene	ND		0.00600	1	01/25/2024 20:24	WG2211913
Benzo(b)fluoranthene	ND		0.00600	1	01/25/2024 20:24	WG2211913
Benzo(k)fluoranthene	ND		0.00600	1	01/25/2024 20:24	WG2211913
Benzo(a)pyrene	ND		0.00600	1	01/25/2024 20:24	WG2211913
Chrysene	ND		0.00600	1	01/25/2024 20:24	WG2211913
Dibenz(a,h)anthracene	ND		0.00600	1	01/25/2024 20:24	WG2211913
Fluoranthene	ND		0.00600	1	01/25/2024 20:24	WG2211913
Fluorene	ND		0.00600	1	01/25/2024 20:24	WG2211913
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	01/25/2024 20:24	WG2211913
1-Methylnaphthalene	0.0220		0.0200	1	01/25/2024 20:24	WG2211913
2-Methylnaphthalene	0.0721		0.0200	1	01/25/2024 20:24	WG2211913
Naphthalene	0.0461		0.0200	1	01/25/2024 20:24	WG2211913
Pyrene	ND		0.00600	1	01/25/2024 20:24	WG2211913
(S) p-Terphenyl-d14	*73.5*		*23.0-120*		*01/25/2024 20:24*	WG2211913
(S) Nitrobenzene-d5	*0.000*	J2	*14.0-149*		*01/25/2024 20:24*	WG2211913
(S) 2-Fluorobiphenyl	*52.5*		*34.0-125*		*01/25/2024 20:24*	WG2211913

Sample Narrative:

L1698093-01 WG2211913: Surrogate failure due to matrix interference

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

Method Blank (MB)

(MB) R4026354-1 01/25/24 08:55

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

L1698107-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1698107-01 01/25/24 13:39 • (DUP) R4026354-3 01/25/24 13:45

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

L1698555-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1698555-02 01/25/24 15:06 • (DUP) R4026354-9 01/25/24 15:12

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

Laboratory Control Sample (LCS)

(LCS) R4026354-2 01/25/24 09:04

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	10.0	10.9	109	80.0-120	

L1698107-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1698107-02 01/25/24 13:51 • (MS) R4026354-4 01/25/24 13:57 • (MSD) R4026354-5 01/25/24 14:04

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	20.0	ND	9.94	13.1	49.7	65.3	1	75.0-125	J6	J3 J6	27.2	20

L1698107-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1698107-02 01/25/24 13:51 • (MS) R4026354-6 01/25/24 14:10

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	656	ND	759	116	50	75.0-125	

L1698104-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1698104-02 01/25/24 10:00 • (DUP) R4026120-2 01/25/24 10:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	pH	su		%		%
pH	8.55	8.55	1	0.000		1

Sample Narrative:

OS: 8.55 at 20.2C

DUP: 8.55 at 20.3C

L1698107-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1698107-02 01/25/24 10:00 • (DUP) R4026120-3 01/25/24 10:00

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

Sample Narrative:

OS: 7.95 at 20.4C

DUP: 7.98 at 20.4C

Laboratory Control Sample (LCS)

(LCS) R4026120-1 01/25/24 10:00

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

Sample Narrative:

LCS: 10 at 20.2C

Method Blank (MB)

(MB) R4026897-1 01/27/24 13:30

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

L1698097-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1698097-01 01/27/24 13:30 • (DUP) R4026897-3 01/27/24 13:30

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	2240	2240	1	0.0892		20

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

L1698544-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1698544-03 01/27/24 13:30 • (DUP) R4026897-4 01/27/24 13:30

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	4550	4540	1	0.220		20

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

Laboratory Control Sample (LCS)

(LCS) R4026897-2 01/27/24 13:30

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	327	322	98.5	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R4026965-1 01/27/24 18:48

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) R4026965-2 01/27/24 18:50 • (LCSD) R4026965-3 01/27/24 18:51

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	0.998	1.04	99.8	104	80.0-120			3.72	20

Method Blank (MB)

(MB) R4026085-1 01/24/24 23:55

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

Laboratory Control Sample (LCS)

(LCS) R4026085-2 01/24/24 23:58

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	96.3	96.3	80.0-120	
Barium	100	88.6	88.6	80.0-120	
Cadmium	100	95.2	95.2	80.0-120	
Copper	100	94.2	94.2	80.0-120	
Lead	100	90.7	90.7	80.0-120	
Nickel	100	97.2	97.2	80.0-120	
Selenium	100	95.4	95.4	80.0-120	
Silver	20.0	18.4	91.9	80.0-120	
Zinc	100	93.6	93.6	80.0-120	

L1698091-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1698091-01 01/25/24 00:02 • (MS) R4026085-5 01/25/24 00:12 • (MSD) R4026085-6 01/25/24 00:15

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	3.77	96.0	100	92.3	96.3	5	75.0-125			4.14	20
Barium	100	170	257	264	87.3	94.6	5	75.0-125			2.78	20
Cadmium	100	ND	95.4	96.7	95.1	96.4	5	75.0-125			1.34	20
Copper	100	10.7	102	104	91.2	93.5	5	75.0-125			2.24	20
Lead	100	9.27	100	103	91.0	93.5	5	75.0-125			2.52	20
Nickel	100	13.0	102	106	88.6	93.1	5	75.0-125			4.30	20
Selenium	100	ND	94.7	93.5	94.0	92.9	5	75.0-125			1.20	20
Silver	20.0	ND	18.6	19.1	93.1	95.5	5	75.0-125			2.60	20
Zinc	100	43.1	131	133	87.6	90.1	5	75.0-125			1.86	20

Method Blank (MB)

(MB) R4028236-3 01/31/24 02:54

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.543	2.50
(S) a,a,a-Trifluorotoluene(FID)	*92.5*			*77.0-120*

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

(LCS) R4028236-1 01/31/24 01:17 • (LCSD) R4028236-2 01/31/24 01:36

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	5.27	5.21	95.8	94.7	72.0-127			1.15	20
(S) a,a,a-Trifluorotoluene(FID)				*98.3*	*99.1*	*77.0-120*				

Method Blank (MB)

(MB) R4027045-3 01/26/24 10:38

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
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	*103*			*75.0-131*
(S) 4-Bromofluorobenzene	*98.1*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*94.7*			*70.0-130*

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

(LCS) R4027045-1 01/26/24 09:03 • (LCSD) R4027045-2 01/26/24 09:22

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	0.106	0.0984	84.8	78.7	70.0-123			7.44	20
Ethylbenzene	0.125	0.108	0.105	86.4	84.0	74.0-126			2.82	20
1,2,4-Trimethylbenzene	0.125	0.108	0.0975	86.4	78.0	70.0-126			10.2	20
1,3,5-Trimethylbenzene	0.125	0.111	0.101	88.8	80.8	73.0-127			9.43	20
(S) Toluene-d8				*97.8*	*97.4*	*75.0-131*				
(S) 4-Bromofluorobenzene				*102*	*102*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*94.5*	*94.8*	*70.0-130*				

Method Blank (MB)

(MB) R4027400-2 01/28/24 21:36

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*98.5*			*75.0-131*
(S) 4-Bromofluorobenzene	*97.2*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*94.8*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R4027400-1 01/28/24 20:17

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Toluene	0.125	0.126	101	75.0-121	
Xylenes, Total	0.375	0.347	92.5	72.0-127	
(S) Toluene-d8			*97.7*	*75.0-131*	
(S) 4-Bromofluorobenzene			*90.6*	*67.0-138*	
(S) 1,2-Dichloroethane-d4			*98.9*	*70.0-130*	

Method Blank (MB)

(MB) R4026083-1 01/25/24 06:59

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	*52.1*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R4026083-2 01/25/24 07:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	33.7	67.4	50.0-150	
(S) o-Terphenyl			*58.0*	*18.0-148*	

L1697827-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1697827-01 01/25/24 11:34 • (MS) R4026083-3 01/25/24 11:49 • (MSD) R4026083-4 01/25/24 12:03

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	524	1220	892	1410	748	100	50.0-150	V	J3 V	31.1	20
(S) o-Terphenyl					*26.6*	*57.5*		*18.0-148*	J7	J7		

Method Blank (MB)

(MB) R4027701-2 01/25/24 10:56

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	U		0.00209	0.00600
Anthracene	U		0.00230	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
Naphthalene	U		0.00408	0.0200
Pyrene	U		0.00200	0.00600
(S) p-Terphenyl-d14	*66.3*			*23.0-120*
(S) Nitrobenzene-d5	*34.7*			*14.0-149*
(S) 2-Fluorobiphenyl	*51.9*			*34.0-125*

Laboratory Control Sample (LCS)

(LCS) R4027701-1 01/25/24 10:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0424	53.0	50.0-120	
Anthracene	0.0800	0.0425	53.1	50.0-126	
Benzo(a)anthracene	0.0800	0.0438	54.8	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0427	53.4	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0413	51.6	49.0-125	
Benzo(a)pyrene	0.0800	0.0413	51.6	42.0-120	
Chrysene	0.0800	0.0446	55.8	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0467	58.4	47.0-125	
Fluoranthene	0.0800	0.0473	59.1	49.0-129	
Fluorene	0.0800	0.0460	57.5	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0496	62.0	46.0-125	
1-Methylnaphthalene	0.0800	0.0451	56.4	51.0-121	
2-Methylnaphthalene	0.0800	0.0439	54.9	50.0-120	
Naphthalene	0.0800	0.0423	52.9	50.0-120	
Pyrene	0.0800	0.0419	52.4	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R4027701-1 01/25/24 10:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
(S) p-Terphenyl-d14			*65.9*	*23.0-120*	
(S) Nitrobenzene-d5			*39.1*	*14.0-149*	
(S) 2-Fluorobiphenyl			*49.3*	*34.0-125*	

L1697837-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1697837-10 01/25/24 17:33 • (MS) R4027750-1 01/25/24 17:51 • (MSD) R4027750-2 01/25/24 18:09

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.0776	ND	0.0443	0.0450	57.1	58.3	1	14.0-127			1.57	27
Anthracene	0.0776	ND	0.0501	0.0490	64.6	63.5	1	10.0-145			2.22	30
Benzo(a)anthracene	0.0776	ND	0.0501	0.0497	64.6	64.4	1	10.0-139			0.802	30
Benzo(b)fluoranthene	0.0776	ND	0.0440	0.0430	56.7	55.7	1	10.0-140			2.30	36
Benzo(k)fluoranthene	0.0776	ND	0.0411	0.0420	53.0	54.4	1	10.0-137			2.17	31
Benzo(a)pyrene	0.0776	ND	0.0457	0.0456	58.9	59.1	1	10.0-141			0.219	31
Chrysene	0.0776	ND	0.0464	0.0458	59.8	59.3	1	10.0-145			1.30	30
Dibenz(a,h)anthracene	0.0776	ND	0.0452	0.0451	58.2	58.4	1	10.0-132			0.221	31
Fluoranthene	0.0776	ND	0.0486	0.0481	62.6	62.3	1	10.0-153			1.03	33
Fluorene	0.0776	ND	0.0537	0.0519	69.2	67.2	1	11.0-130			3.41	29
Indeno(1,2,3-cd)pyrene	0.0776	ND	0.0470	0.0467	60.6	60.5	1	10.0-137			0.640	32
1-Methylnaphthalene	0.0776	ND	0.0464	0.0478	59.8	61.9	1	10.0-142			2.97	28
2-Methylnaphthalene	0.0776	ND	0.0465	0.0469	59.9	60.8	1	10.0-137			0.857	28
Naphthalene	0.0776	ND	0.0406	0.0415	52.3	53.8	1	10.0-135			2.19	27
Pyrene	0.0776	ND	0.0423	0.0421	54.5	54.5	1	10.0-148			0.474	35
(S) p-Terphenyl-d14					*0.0561*	*56.6*		*23.0-120*	J2			
(S) Nitrobenzene-d5					*0.000*	*74.0*		*14.0-149*	J2			
(S) 2-Fluorobiphenyl					*0.158*	*48.3*		*34.0-125*	J2			

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	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: L1698093

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: NA

Customer Project Name/Number: D20 696 Dumpline Release

State: CO / County/City: Garfield / Time Zone Collected: [ ]PT [X]MT [ ]CT [ ]ET

Phone: 435-299-0643

Email: andy.smith@confluence-cc.com

Site/Facility ID #: D20 696

Compliance Monitoring? [ ] Yes [X] No

Collected By (print): Andrew Smith

Purchase Order # : NA

Quote #: NA

DW PWS ID #: NA

DW Location Code: NA

Collected By (signature): Andrew Smith

Turnaround Date Required: **Standard Turnaround**

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

Sample Disposal:
[X] 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: NA

* 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 **

** 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 _____

Lab Project Manager:

Analyses

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	pH, EC, SAR	Boron (Hot Water Soluble Soil)	Cr6IC				Lab Profile/Line:
20240118-D20 696-(POR)@5	SL	G			1/18/2024	1145			3	X	X	X	X	X	X	X				-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: _____

LAB USE ONLY:
Lab Sample # / Comments:

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 #: 6525 5572 2523

Samples received via: (FEDEX) UPS Client Courier Pace Courier

LAB Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: _____
Cooler 1 Temp Upon Receipt: __oC
Cooler 1 Therm Corr. Factor: __oC
Cooler 1 Corrected Temp: _____oC
Comments: VPA-8
0.8+0=0.8

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Andrew Smith	1/22/24 1200		
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
	1/22/24 1500		
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
		(14)	1/23/24 920

A051

Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / (NO)

Page: ____ of: ____

ANALYTICAL REPORT

November 30, 2023

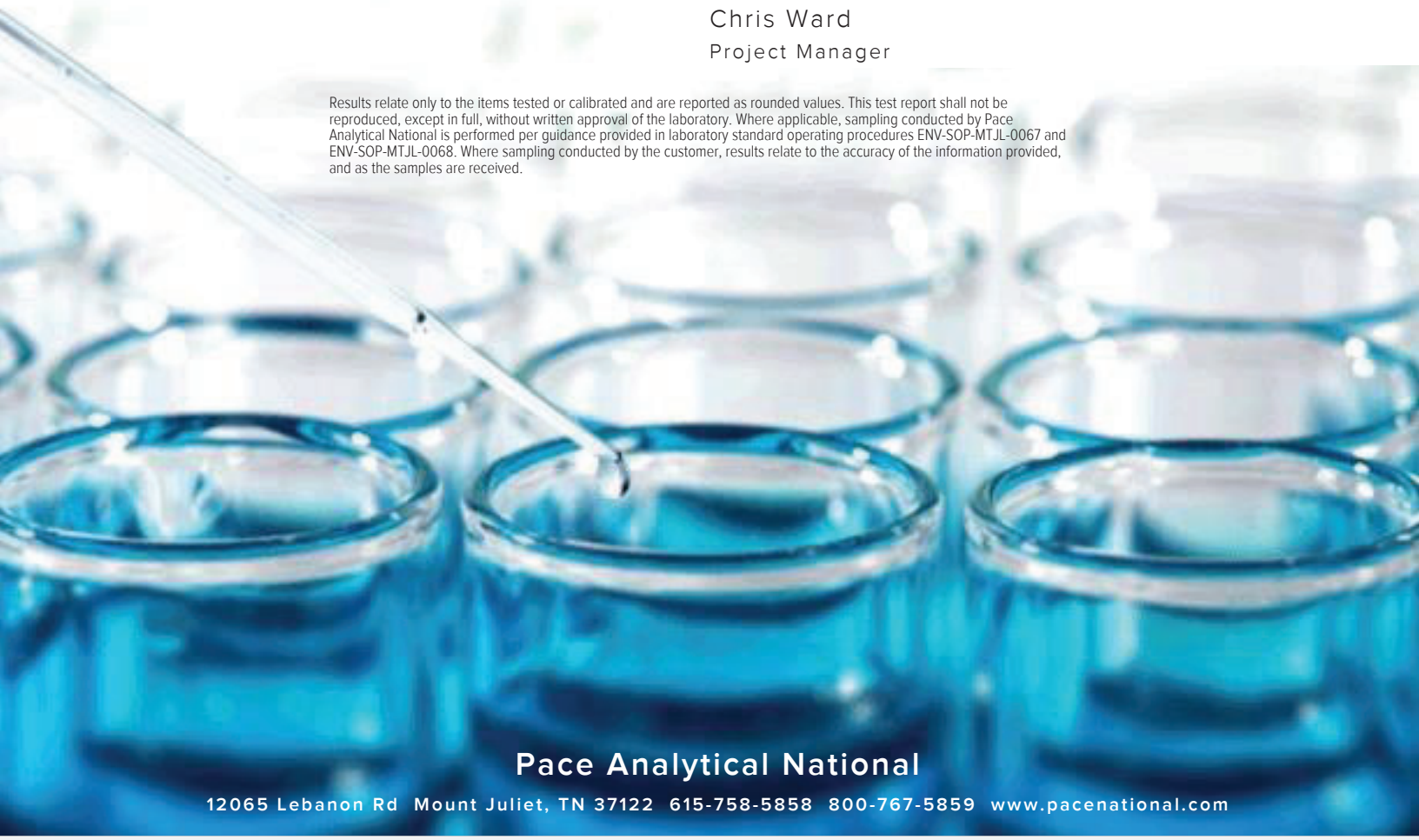
Caerus Oil and Gas

Sample Delivery Group:	L1679463
Samples Received:	11/17/2023
Project Number:	
Description:	

Report To: Jake J. / Brett M. / Blair R. / Andy V.
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

CP-D20-1 L1679463-01 Solid

Collected by: Blair K. Rollins | Collected date/time: 11/15/23 00:00 | Received date/time: 11/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2178041	1	11/29/23 09:50	11/29/23 09:50	JTM	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2175128	1	11/21/23 10:24	11/21/23 13:27	JGM	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2175536	1	11/21/23 15:18	11/23/23 09:47	NTG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2174129	5	11/20/23 08:48	11/20/23 22:18	LD	Mt. Juliet, TN

CP-D20-2 L1679463-02 Solid

Collected by: Blair K. Rollins | Collected date/time: 11/15/23 00:00 | Received date/time: 11/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2178041	1	11/29/23 09:53	11/29/23 09:53	JTM	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2175128	1	11/21/23 10:24	11/21/23 13:27	JGM	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2175536	1	11/21/23 15:18	11/23/23 09:47	NTG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2174132	5	11/22/23 06:59	11/22/23 21:00	LD	Mt. Juliet, TN

CP-D20-3 L1679463-03 Solid

Collected by: Blair K. Rollins | Collected date/time: 11/15/23 00:00 | Received date/time: 11/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2178041	1	11/29/23 16:54	11/29/23 16:54	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2175128	1	11/21/23 10:24	11/21/23 13:27	JGM	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2175536	1	11/21/23 15:18	11/23/23 09:47	NTG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2174132	5	11/22/23 06:59	11/22/23 21:03	LD	Mt. Juliet, TN

CP-D20-4 L1679463-04 Solid

Collected by: Blair K. Rollins | Collected date/time: 11/15/23 00:00 | Received date/time: 11/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2178041	1	11/29/23 16:56	11/29/23 16:56	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2175128	1	11/21/23 10:24	11/21/23 13:27	JGM	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2175536	1	11/21/23 15:18	11/23/23 09:47	NTG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2174132	5	11/22/23 06:59	11/22/23 21:06	LD	Mt. Juliet, TN

CP-D20-5 L1679463-05 Solid

Collected by: Blair K. Rollins | Collected date/time: 11/15/23 00:00 | Received date/time: 11/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2178041	1	11/29/23 10:02	11/29/23 10:02	JTM	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2175128	1	11/21/23 10:24	11/21/23 13:27	JGM	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2175536	1	11/21/23 15:18	11/23/23 09:47	NTG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2174132	5	11/22/23 06:59	11/22/23 21:09	LD	Mt. Juliet, TN

CP-D20-6 L1679463-06 Solid

Collected by: Blair K. Rollins | Collected date/time: 11/15/23 00:00 | Received date/time: 11/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2178041	1	11/29/23 10:06	11/29/23 10:06	JTM	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2175129	1	11/21/23 10:12	11/21/23 14:59	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2175536	1	11/21/23 15:18	11/23/23 09:47	NTG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2174132	5	11/22/23 06:59	11/22/23 21:13	LD	Mt. Juliet, TN

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

SAMPLE SUMMARY

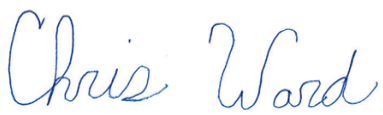
CP-D20-7 L1679463-07 Solid

Collected by: Blair K. Rollins
Collected date/time: 11/15/23 00:00
Received date/time: 11/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2178041	1	11/29/23 10:09	11/29/23 10:09	JTM	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2175129	1	11/21/23 10:12	11/21/23 14:59	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2175536	1	11/21/23 15:18	11/23/23 09:47	NTG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2174132	5	11/22/23 06:59	11/22/23 21:16	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	23.9		1	11/29/2023 09:50	WG2178041

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.09	T8	1	11/21/2023 13:27	WG2175128

Sample Narrative:

L1679463-01 WG2175128: 8.09 at 20.7C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	11900		10.0	1	11/23/2023 09:47	WG2175536

Sample Narrative:

L1679463-01 WG2175536: at 25C

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Arsenic	10.9		1.00	5	11/20/2023 22:18	WG2174129

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	SAR				
Sodium Adsorption Ratio	18.0		1	11/29/2023 09:53	WG2178041

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	pH				
pH	8.01	T8	1	11/21/2023 13:27	WG2175128

Sample Narrative:

L1679463-02 WG2175128: 8.01 at 20.8C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	12600		10.0	1	11/23/2023 09:47	WG2175536

Sample Narrative:

L1679463-02 WG2175536: at 25C

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Arsenic	5.36		1.00	5	11/22/2023 21:00	WG2174132

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	52.5		1	11/29/2023 16:54	WG2178041

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.17	T8	1	11/21/2023 13:27	WG2175128

Sample Narrative:

L1679463-03 WG2175128: 8.17 at 21C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	19300		10.0	1	11/23/2023 09:47	WG2175536

Sample Narrative:

L1679463-03 WG2175536: at 25C

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Arsenic	6.31		1.00	5	11/22/2023 21:03	WG2174132

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	62.5		1	11/29/2023 16:56	WG2178041

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.33	T8	1	11/21/2023 13:27	WG2175128

Sample Narrative:

L1679463-04 WG2175128: 8.33 at 20.9C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	17700		10.0	1	11/23/2023 09:47	WG2175536

Sample Narrative:

L1679463-04 WG2175536: at 25C

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	4.97		1.00	5	11/22/2023 21:06	WG2174132

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	SAR				
Sodium Adsorption Ratio	38.7		1	11/29/2023 10:02	WG2178041

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	pH				
pH	8.26	T8	1	11/21/2023 13:27	WG2175128

Sample Narrative:

L1679463-05 WG2175128: 8.26 at 20.7C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	18600		10.0	1	11/23/2023 09:47	WG2175536

Sample Narrative:

L1679463-05 WG2175536: at 25C

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Arsenic	4.75		1.00	5	11/22/2023 21:09	WG2174132

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	44.0		1	11/29/2023 10:06	WG2178041

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.32	T8	1	11/21/2023 14:59	WG2175129

Sample Narrative:

L1679463-06 WG2175129: 8.32 at 21C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	15800		10.0	1	11/23/2023 09:47	WG2175536

Sample Narrative:

L1679463-06 WG2175536: at 25C

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Arsenic	5.37		1.00	5	11/22/2023 21:13	WG2174132

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	SAR				
Sodium Adsorption Ratio	38.7		1	11/29/2023 10:09	WG2178041

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	pH				
pH	8.18	T8	1	11/21/2023 14:59	WG2175129

Sample Narrative:

L1679463-07 WG2175129: 8.18 at 21.1C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	16400		10.0	1	11/23/2023 09:47	WG2175536

Sample Narrative:

L1679463-07 WG2175536: at 25C

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Arsenic	5.62		1.00	5	11/22/2023 21:16	WG2174132

L1679002-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1679002-01 11/21/23 13:27 • (DUP) R4002887-2 11/21/23 13:27

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.52	8.50	1	0.235		1

Sample Narrative:

OS: 8.52 at 20.7C

DUP: 8.5 at 20.7C

L1679427-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1679427-04 11/21/23 13:27 • (DUP) R4002887-3 11/21/23 13:27

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.09	8.08	1	0.124		1

Sample Narrative:

OS: 8.09 at 20.8C

DUP: 8.08 at 20.7C

Laboratory Control Sample (LCS)

(LCS) R4002887-1 11/21/23 13:27

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: 10.03 at 20.4C

L1679512-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1679512-02 11/21/23 14:59 • (DUP) R4002951-3 11/21/23 14:59

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	pH	su		%		%
pH	8.55	8.58	1	0.350		1

Sample Narrative:

OS: 8.55 at 21.1C

DUP: 8.58 at 20.8C

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

(LCS) R4002951-1 11/21/23 14:59 • (LCSD) R4002951-2 11/21/23 14:59

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	su	su	su	%	%	%			%	%
pH	10.0	10.0	10.0	100	100	99.0-101			0.200	1

Sample Narrative:

LCS: 10.01 at 20.4C

LCSD: 10.03 at 20.3C

Method Blank (MB)

(MB) R4003733-1 11/23/23 09:47

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

L1679427-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1679427-04 11/23/23 09:47 • (DUP) R4003733-3 11/23/23 09:47

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	1320	1320	1	0.0757		20

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

L1679463-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1679463-06 11/23/23 09:47 • (DUP) R4003733-4 11/23/23 09:47

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	15800	15000	1	5.65		20

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

Laboratory Control Sample (LCS)

(LCS) R4003733-2 11/23/23 09:47

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	327	348	106	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R4002498-1 11/20/23 20:31

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) R4002498-2 11/20/23 20:34

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

L1678873-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1678873-04 11/20/23 20:38 • (MS) R4002498-5 11/20/23 20:47 • (MSD) R4002498-6 11/20/23 20:51

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	7.18	107	113	100	106	5	75.0-125			5.25	20

Method Blank (MB)

(MB) R4003685-1 11/22/23 20:09

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) R4003685-2 11/22/23 20:12

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	97.0	97.0	80.0-120	

L1678503-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1678503-02 11/22/23 20:16 • (MS) R4003685-5 11/22/23 20:26 • (MSD) R4003685-6 11/22/23 20:29

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	5.83	99.5	96.3	93.7	90.4	5	75.0-125			3.34	20

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
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	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

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

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

Caerus Oil and Gas **143 Diamond Avenue** **Parachute, CO 81635**	Billing Information: **Same as left**	Pres Chk	Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace Analytical®
National Center for Testing & Innovation

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

L# 1679463
M138

Report to: **Blair Rollins**	Email To: **brollins@caerusoilandgas.com**
Project Description:	City/State Collected: **CO**
Phone: **(970) 640-6919** Fax:	Client Project # / Lab Project #
Collected by (print): **Blair K. Rollins**	Site/Facility ID # / P.O. #
Collected by (signature):	**Rush?** (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day Date Results Needed **Quote #**
Immediately Packed on Ice N ___ Y X	

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

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TPH (DRO and GRO)	BTEX	Table 910-1 metals in soil	Table 910-1 PAHs	EC	SAR	pH	Arsenic (As)	Remarks	Sample # (lab only)
CP-D20-1		SS	18	15 Nov 23		1					X	X	X	X		-01
CP-D20-2		SS	18	15 Nov 23		1					X	X	X	X		-02
CP-D20-3		SS	11-12	15 Nov 23		1					X	X	X	X		-03
CP-D20-4		SS	17-18	15 Nov 23		1					X	X	X	X		-04
CP-D20-5		SS	18-19	15 Nov 23		1					X	X	X	X		-05
CP-D20-6		SS	19-20	15 Nov 23		1					X	X	X	X		-06
CP-D20-7		SS	17-20	15 Nov 23		1					X	X	X	X		-07

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

Remarks:

pH _____ Temp _____
Flow _____ Other _____

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

Tracking # 7865 0154 2016

Sample Receipt Checklist

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

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Daniels	16 Nov 2023	1505		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: DPFCS 4.6 to 4.6 Bottles Received: 7
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Caleb Tapp	Date: 11/17/23 Time: 09:00

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

ANALYTICAL REPORT

December 12, 2023

Caerus Oil and Gas

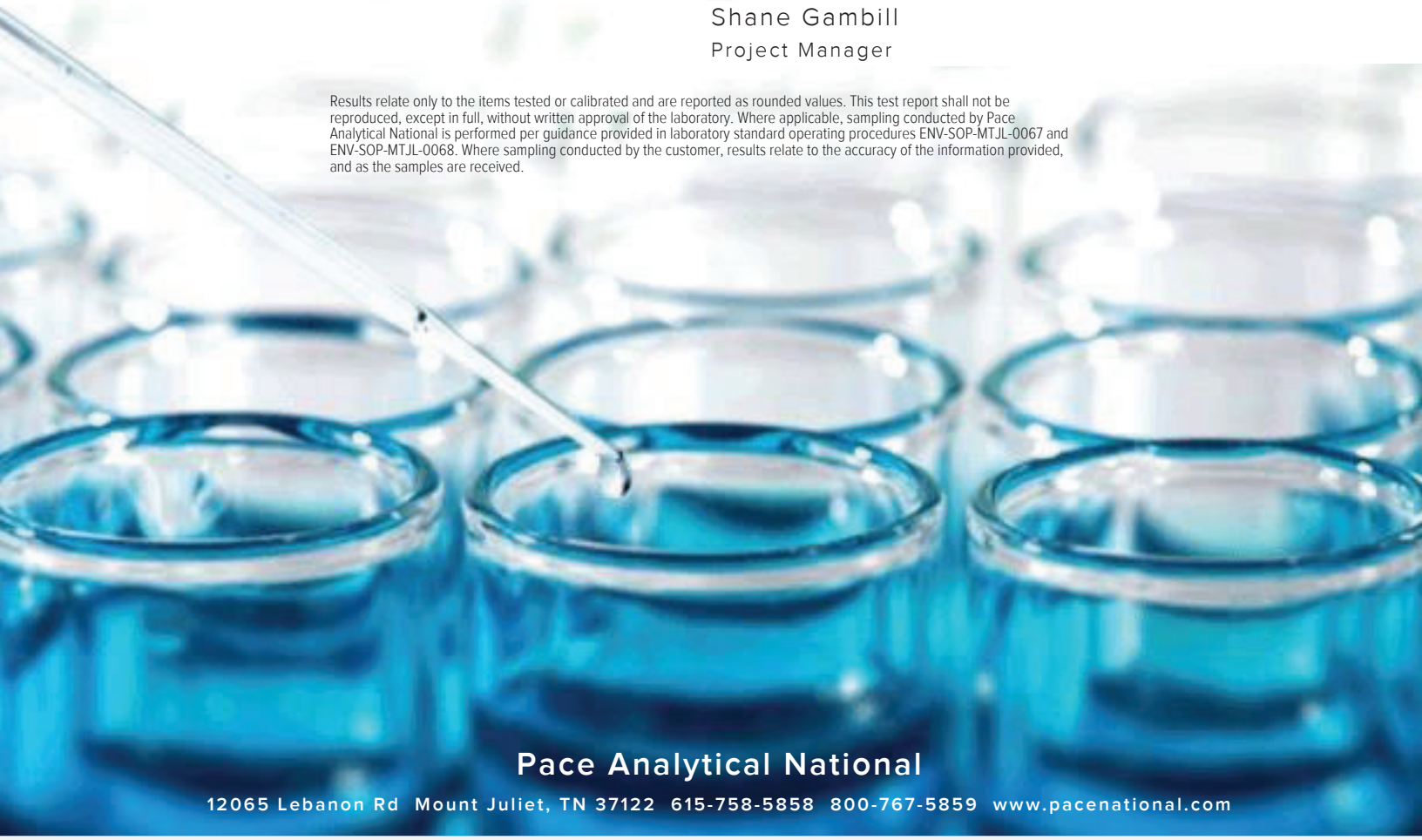
Sample Delivery Group:	L1685445
Samples Received:	12/07/2023
Project Number:	
Description:	D20

Report To: Jake J. / Brett M. / Blair R. / Andy V.
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:

Shane Gambill
Project Manager

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



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

TABLE OF CONTENTS

SAMPLE SUMMARY

CP-D20-REF 1 L1685445-01 Solid

Collected by: Blair K. Rollins | Collected date/time: 11/15/23 00:00 | Received date/time: 12/07/23 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9045D	WG2185807	1	12/08/23 14:00	12/08/23 14:25	EPW	Mt. Juliet, TN

CP-D20-REF 1 L1685445-02 Solid

Collected by: Blair K. Rollins | Collected date/time: 11/15/23 00:00 | Received date/time: 12/07/23 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9045D	WG2185807	1	12/08/23 14:00	12/08/23 14:25	EPW	Mt. Juliet, TN

CP-D20-REF 1 L1685445-03 Solid

Collected by: Blair K. Rollins | Collected date/time: 11/15/23 00:00 | Received date/time: 12/07/23 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9045D	WG2185807	1	12/08/23 14:00	12/08/23 14:25	EPW	Mt. Juliet, TN

CP-D20-REF 2 L1685445-04 Solid

Collected by: Blair K. Rollins | Collected date/time: 11/15/23 00:00 | Received date/time: 12/07/23 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9045D	WG2185807	1	12/08/23 14:00	12/08/23 14:25	EPW	Mt. Juliet, TN

CP-D20-REF 2 L1685445-05 Solid

Collected by: Blair K. Rollins | Collected date/time: 11/15/23 00:00 | Received date/time: 12/07/23 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9045D	WG2185807	1	12/08/23 14:00	12/08/23 14:25	EPW	Mt. Juliet, TN

CP-D20-REF 2 L1685445-06 Solid

Collected by: Blair K. Rollins | Collected date/time: 11/15/23 00:00 | Received date/time: 12/07/23 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9045D	WG2185807	1	12/08/23 14:00	12/08/23 14:25	EPW	Mt. Juliet, TN

CP-D20-REF 3 L1685445-07 Solid

Collected by: Blair K. Rollins | Collected date/time: 11/15/23 00:00 | Received date/time: 12/07/23 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9045D	WG2185807	1	12/08/23 14:00	12/08/23 14:25	EPW	Mt. Juliet, TN

CP-D20-REF 3 L1685445-08 Solid

Collected by: Blair K. Rollins | Collected date/time: 11/15/23 00:00 | Received date/time: 12/07/23 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9045D	WG2185807	1	12/08/23 14:00	12/08/23 14:25	EPW	Mt. Juliet, TN

SAMPLE SUMMARY

CP-D20-REF 3 L1685445-09 Solid

Collected by: Blair K. Rollins | Collected date/time: 11/15/23 00:00 | Received date/time: 12/07/23 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9045D	WG2185807	1	12/08/23 14:00	12/08/23 14:25	EPW	Mt. Juliet, TN

CP-D20-1R L1685445-10 Solid

Collected by: Blair K. Rollins | Collected date/time: 11/15/23 00:00 | Received date/time: 12/07/23 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG2187112	1	12/11/23 15:36	12/12/23 08:52	DJS	Mt. Juliet, TN

CP-D20-1R L1685445-11 Solid

Collected by: Blair K. Rollins | Collected date/time: 11/15/23 00:00 | Received date/time: 12/07/23 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG2187112	1	12/11/23 15:36	12/12/23 08:54	DJS	Mt. Juliet, TN

CP-D20-1R L1685445-12 Solid

Collected by: Blair K. Rollins | Collected date/time: 11/15/23 00:00 | Received date/time: 12/07/23 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG2187112	1	12/11/23 15:36	12/12/23 08:57	DJS	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.

Shane Gambill
Project Manager

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.45	T8	1	12/08/2023 14:25	WG2185807

Sample Narrative:

L1685445-01 WG2185807: 8.45 at 19.9C

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.45	T8	1	12/08/2023 14:25	WG2185807

Sample Narrative:

L1685445-02 WG2185807: 8.45 at 19.8C

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.46	T8	1	12/08/2023 14:25	WG2185807

Sample Narrative:

L1685445-03 WG2185807: 8.46 at 19.9C

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	pH			date / time	
pH	8.51	T8	1	12/08/2023 14:25	WG2185807

Sample Narrative:

L1685445-04 WG2185807: 8.51 at 19.8C

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	pH			date / time	
pH	8.44	T8	1	12/08/2023 14:25	WG2185807

Sample Narrative:

L1685445-05 WG2185807: 8.44 at 19.3C

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	pH			date / time	
pH	8.45	T8	1	12/08/2023 14:25	WG2185807

Sample Narrative:

L1685445-06 WG2185807: 8.45 at 19.4C

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.61	T8	1	12/08/2023 14:25	WG2185807

Sample Narrative:

L1685445-07 WG2185807: 8.61 at 19.4C

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	pH			date / time	
pH	8.59	T8	1	12/08/2023 14:25	WG2185807

Sample Narrative:

L1685445-08 WG2185807: 8.59 at 19.4C

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.57	T8	1	12/08/2023 14:25	WG2185807

Sample Narrative:

L1685445-09 WG2185807: 8.57 at 19.4C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Arsenic	7.95		2.00	1	12/12/2023 08:52	WG2187112

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Arsenic	7.26		2.00	1	12/12/2023 08:54	WG2187112

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Arsenic	8.56		2.00	1	12/12/2023 08:57	WG2187112

L1685445-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1685445-02 12/08/23 14:25 • (DUP) R4010021-2 12/08/23 14:25

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	pH	su		%		%
pH	8.45	8.49	1	0.472		1

Sample Narrative:

OS: 8.45 at 19.8C

DUP: 8.49 at 19.9C

Laboratory Control Sample (LCS)

(LCS) R4010021-1 12/08/23 14:25

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: 10.02 at 19.3C

Method Blank (MB)

(MB) R4011283-1 12/12/23 08:16

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.518	2.00

Laboratory Control Sample (LCS)

(LCS) R4011283-2 12/12/23 08:19

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	95.1	95.1	80.0-120	

L1683741-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1683741-01 12/12/23 08:21 • (MS) R4011283-5 12/12/23 08:29 • (MSD) R4011283-6 12/12/23 08:31

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	ND	106	89.7	106	89.7	1	75.0-125			16.5	20

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
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.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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

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

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

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

Caerus Oil and Gas
143 Diamond Avenue
Parachute, CO 81635

Billing Information: Same as left

Report to: Blair Rollins

Email To: brollins@caerusoilandgas.com

Project Description:

City/State Collected: CO

Phone: (970) 640-6919

Client Project #

Lab Project #

Fax:

Collected by (print): Blair K. Rollins

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

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

Quote #

Date Results Needed

No. of Cntrs

Analysis / Container / Preservative

Pres Chk

Sample ID	Comp/Grab	Matrix *	Depth bgs	Date	Time	TPH (DRO and GRO)	BTEX	Table 910-1 metals in soil	Table 910-1 PAHs	EC	SAR	pH	Arsenic (CAS)			Remarks	Sample # (lab only)
CP-D20-REF1		SS	15-16	15Nov23								X				Run in triplicate 3x	-01/02/03
CP-D20-REF2		SS	16-17	15Nov23								X				3x	-04/05/06
CP-D20-REF3		SS	15-17	15Nov23								X				3x	-07/08/09
CP-D20-IR		SS	18	15Nov23									X			3x	-10/11/12

Chain of Custody Page ___ of ___

Pace Analytical®
National Center for Testing & Innovation

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

L# 1685445

K049

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

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

Remarks: Run each Sample 3x for the indicated Analysis pH _____ Temp _____ Flow _____ Other _____

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

Tracking #

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

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
TH Daniels	6Dec2023	1611		
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 0.2°C Bottles Received: 4
				AMB
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 12/8/23 Time: 08:00
			Caleb TPP	

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

ANALYTICAL REPORT

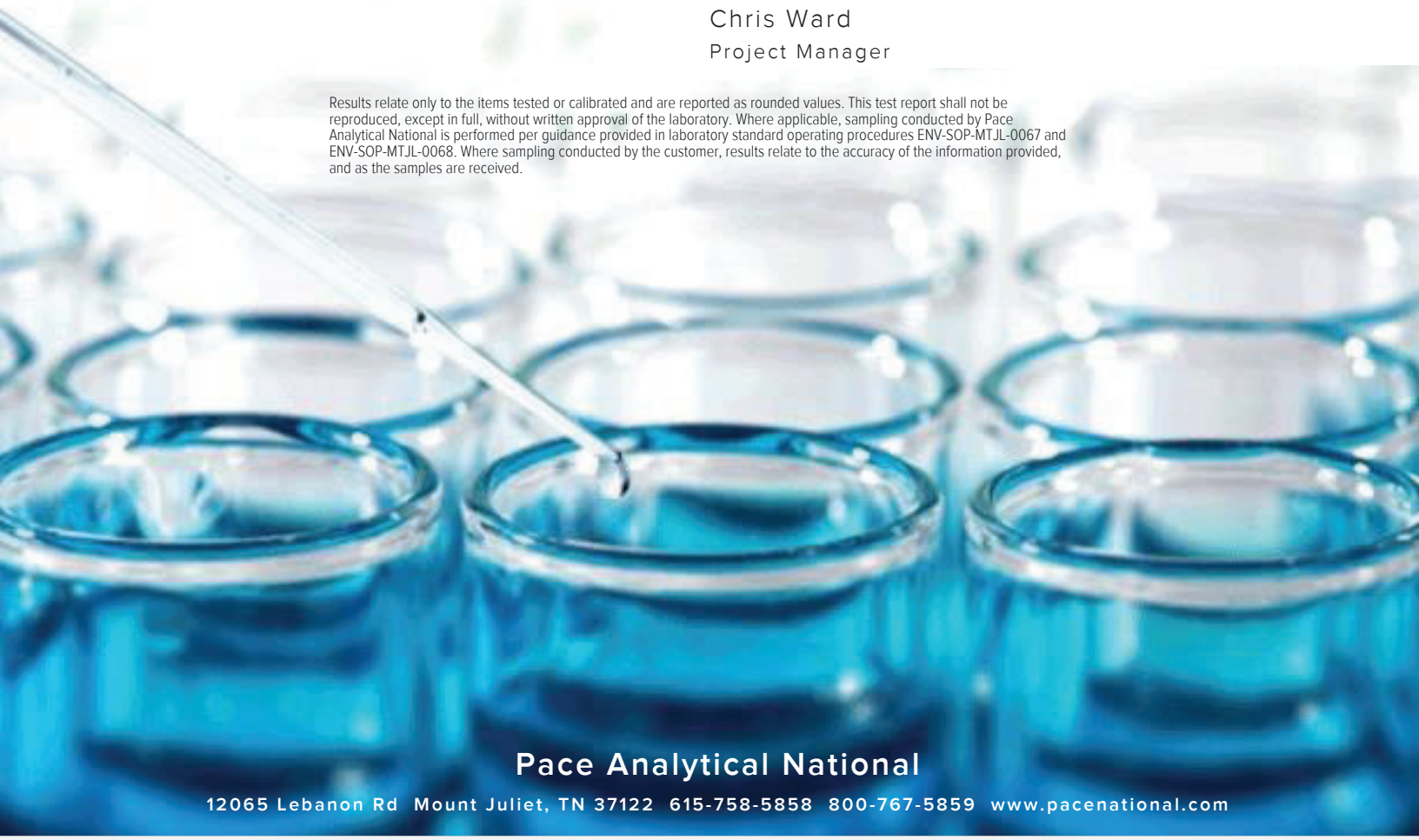
October 12, 2023

Caerus Oil and Gas

Sample Delivery Group:	L1665068
Samples Received:	10/11/2023
Project Number:	
Description:	D20 696 Pit Remediation
Site:	D20 696 PAD
Report To:	Jake J. / Brett M. / Blair R. / Andy V. 143 Diamond Avenue Parachute, CO 81635

Entire Report Reviewed By: Chris Ward

Chris Ward
Project Manager



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

TABLE OF CONTENTS

SAMPLE SUMMARY

20231010-NPRBG-(D20 696-W-10:26)@1.5 L1665068-01 Solid

Collected by: Tristan Schmalz
Collected date/time: 10/10/23 10:26
Received date/time: 10/11/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020	WG2149660	4.46	10/12/23 00:26	10/12/23 14:06	JPD	Mt. Juliet, TN

20231010-NPRBG-(D20 696-W-10:26)@1.5 L1665068-02 Solid

Collected by: Tristan Schmalz
Collected date/time: 10/10/23 10:26
Received date/time: 10/11/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020	WG2149660	5	10/12/23 00:26	10/12/23 14:09	JPD	Mt. Juliet, TN

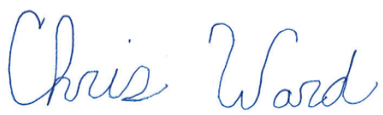
20231010-NPRBG-(D20 696-W-10:26)@1.5 L1665068-03 Solid

Collected by: Tristan Schmalz
Collected date/time: 10/10/23 10:26
Received date/time: 10/11/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020	WG2149660	5	10/12/23 00:26	10/12/23 14:12	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

SAMPLE RESULTS - 01

L1665068

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Arsenic	9.05		0.0892	0.892	4.46	10/12/2023 14:06	WG2149660

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	14.0		0.100	1.00	5	10/12/2023 14:09	WG2149660

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	14.8		0.100	1.00	5	10/12/2023 14:12	WG2149660

Method Blank (MB)

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

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

Laboratory Control Sample (LCS)

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

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	92.7	92.7	80.0-120	

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

(OS) L1665072-01 10/12/23 13:08 • (MS) R3985448-5 10/12/23 13:18 • (MSD) R3985448-6 10/12/23 13:22

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	2.93	90.7	85.5	87.7	82.5	5	75.0-125			5.91	20

GLOSSARY OF TERMS

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Qualifier Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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

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

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

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

Caerus Oil and Gas
143 Diamond Avenue
Parachute, CO 81635

Billing Information: SAME AS LEFT

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

Pace Analytical® National Center for Testing & Innovation

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

Report to: Blair Rollins

Email To: brollins@caerusoilandgas.com

Project Description: D20 6996 Pit Remediation

City/State Collected: Piceance Crk, CO

Please Circle: PT (MT) CT ET

Phone: (970) 640-6919

Client Project #

Lab Project #

SDG # L1685068

F099

Collected by (print): Tristan Schmalz

Site/Facility ID #: D20 6996 Pad

P.O. #

Acctnum:

Template:

Prelogin:

PM:

PB:

Shipped Via:

Collected by (signature): Tristan Schmalz

Immediately Packed on Ice N ___ Y X

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

Quote #

Date Results Needed: Standard TAT

No. of Cntrs

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	COGCC Table 915-1	EC, pH, SAR	Arsenic, Boron	COGCC Table 910-1	Arsenic	Remarks	Sample # (lab only)
20231010-NPRBG-(D20 6996-W-10:26)@1.5	Grab	SS	1.5ft	10/10/23	10:26	1					X		01
20231010-NPRBG-(D20 6996-W-10:26)@1.5	↓	↓	↓	↓	↓	↓					X		
20231010-NPRBG-(D20 6996-W-10:26)@1.5											X		

Tristan Schmalz

10/10/2023

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

Remarks:

pH _____ Temp _____

Flow _____ Other _____

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

Tracking # 6525 5572 1479

Sample Receipt Checklist

COC Seal Present/Intact:	NP	X Y N
COC Signed/Accurate:		✓ Y N
Bottles arrive intact:		✓ Y N
Correct bottles used:		✓ Y N
Sufficient volume sent:		✓ Y N
If Applicable		
VOA Zero Headspace:		✓ Y N
Preservation Correct/Checked:		✓ Y N
RAD Screen <0.5 mR/hr:		X Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Tristan Schmalz	10/10/2023	13:30		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: CC 4.8 °C Bottles Received: 1
	10 10 23	1500		.6+0
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:
			Christopher L Gallion	10/11/23 0845

If preservation required by Login: Date/Time

Hold:

Condition: NCF // OK

ANALYTICAL REPORT

October 12, 2023

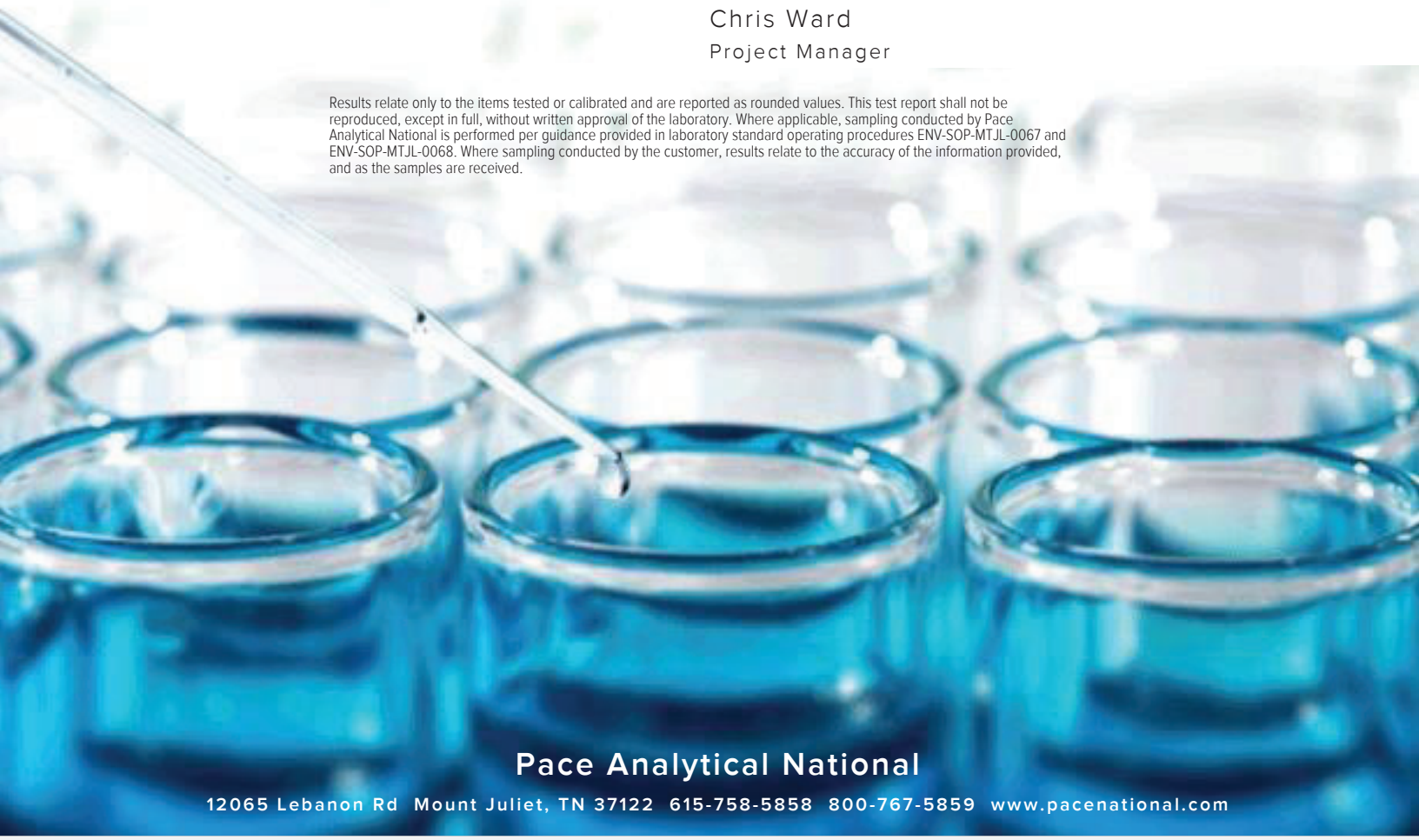
1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Caerus Oil and Gas

Sample Delivery Group:	L1665065
Samples Received:	10/11/2023
Project Number:	
Description:	D20 696 Pit Remediation
Site:	D20 696 PAD
Report To:	Jake J. / Brett M. / Blair R. / Andy V. 143 Diamond Avenue Parachute, CO 81635

Entire Report Reviewed By: Chris Ward

Chris Ward
Project Manager



Pace Analytical National
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TABLE OF CONTENTS

SAMPLE SUMMARY

20231010-NPRBG-(D20 696-W-10:43)@2 L1665065-01 Solid

Collected by: Tristan Schmalz
Collected date/time: 10/10/23 10:43
Received date/time: 10/11/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020	WG2149660	5	10/12/23 00:26	10/12/23 13:56	JPD	Mt. Juliet, TN

20231010-NPRBG-(D20 696-W-10:43)@2 L1665065-02 Solid

Collected by: Tristan Schmalz
Collected date/time: 10/10/23 10:43
Received date/time: 10/11/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020	WG2149660	5	10/12/23 00:26	10/12/23 13:59	JPD	Mt. Juliet, TN

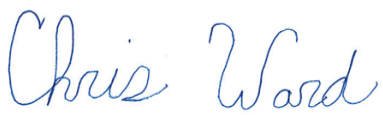
20231010-NPRBG-(D20 696-W-10:43)@2 L1665065-03 Solid

Collected by: Tristan Schmalz
Collected date/time: 10/10/23 10:43
Received date/time: 10/11/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020	WG2149660	5	10/12/23 00:26	10/12/23 14:02	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

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Arsenic	13.4		0.100	1.00	5	10/12/2023 13:56	WG2149660

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Arsenic	14.3		0.100	1.00	5	10/12/2023 13:59	WG2149660

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Arsenic	12.4		0.100	1.00	5	10/12/2023 14:02	WG2149660

Method Blank (MB)

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

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

Laboratory Control Sample (LCS)

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

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	92.7	92.7	80.0-120	

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

(OS) L1665072-01 10/12/23 13:08 • (MS) R3985448-5 10/12/23 13:18 • (MSD) R3985448-6 10/12/23 13:22

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	2.93	90.7	85.5	87.7	82.5	5	75.0-125			5.91	20

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

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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

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

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

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

Caerus Oil and Gas
143 Diamond Avenue
Parachute, CO 81635

Billing Information: SAME AS LEFT

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

Pace Analytical® National Center for Testing & Innovation

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

Report to: Blair Rollins

Email To: brollins@caerusoilandgas.com

Project Description: D20 6916 Pit Remediation

City/State Collected: Piceance Crk, CO

Please Circle: PT (MT) CT ET

SDG # L1685065
F098

Phone: (970) 640-6919

Client Project #

Lab Project #

Collected by (print): Tristan Schmalz

Site/Facility ID # D20 6916 PAD

P.O. #

Collected by (signature): Tristan Schmalz

Immediately Packed on Ice N ___ Y X

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

Quote #

Date Results Needed: Standard TAT

Acctnum:
Template:
Prelogin:
PM:
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	COGCC Table 915-1	EC, pH, SAR	Arsenic, Boron	COGCC Table 910-1	Arsenic							Remarks	Sample # (lab only)
20231010-NPREG-(D20 6916-W-10:43)@2	Grab	SS	2Ft	10/10/2023	10:43	1					X								-01
20231010-NPREG-(D20 6916-W-10:43)@2											X								-02
20231010-NPREG-(D20 6916-W-10:43)@2											X								-03

Tristan Schmalz 10/10/2023

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

Remarks:

pH _____ Temp _____

Flow _____ Other _____

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

Tracking # 6525 5572 1479

Sample Receipt Checklist
COC Seal Present/Intact: __NP X Y __N
COC Signed/Accurate: X Y __N
Bottles arrive intact: X Y __N
Correct bottles used: X Y __N
Sufficient volume sent: X Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: X Y __N
RAD Screen <0.5 mR/hr: X Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Tristan Schmalz	10/10/2023	13:30		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 0.6 °C Bottles Received: 1
	10/10 23	1520		If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10/11/23 Time: 0845
			Christopher L Gallin	Hold: Condition: NCF / OK

ANALYTICAL REPORT

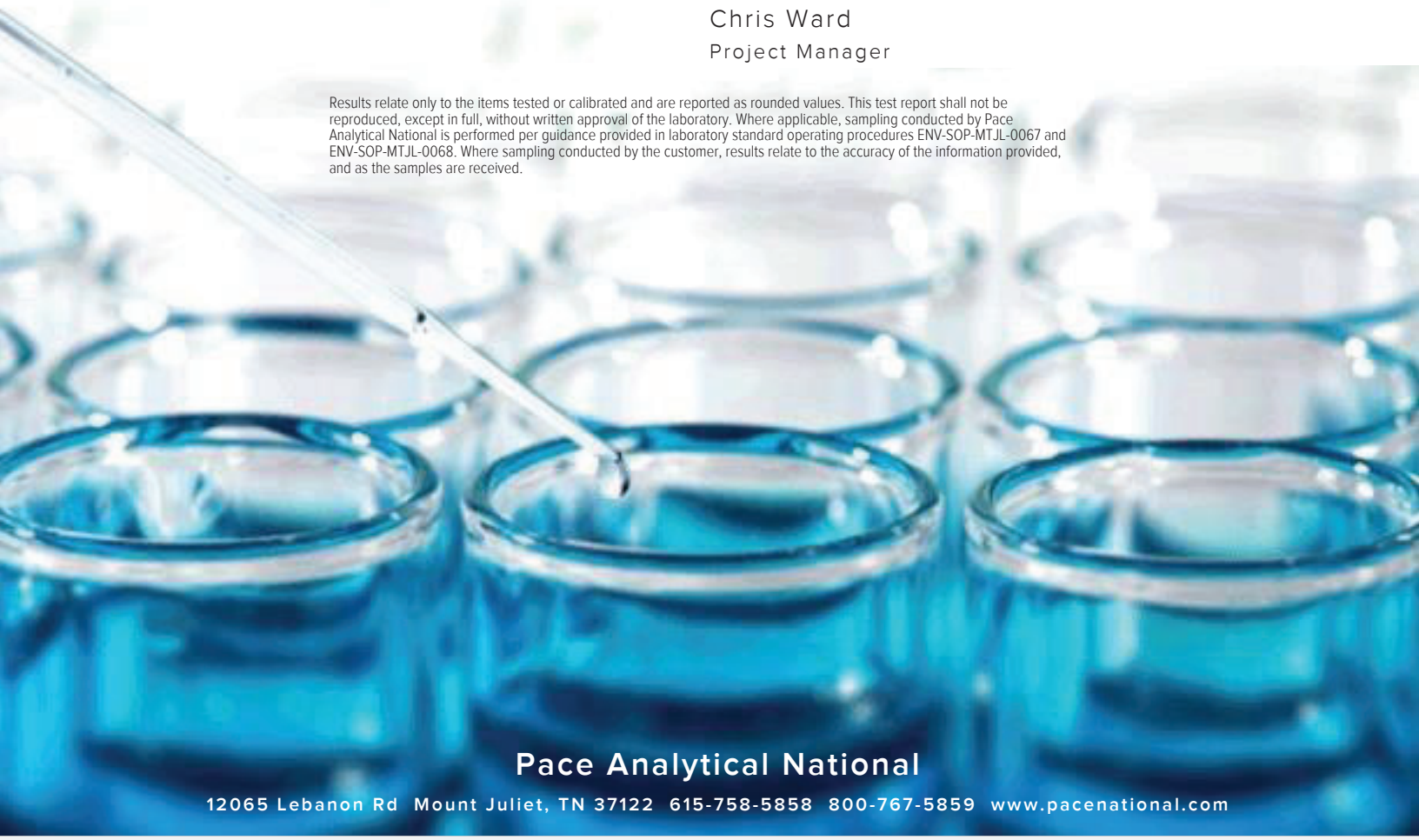
October 12, 2023

Caerus Oil and Gas

Sample Delivery Group:	L1665062
Samples Received:	10/11/2023
Project Number:	
Description:	D20 696 Pit Remediation
Site:	D20 696 PAD
Report To:	Jake J. / Brett M. / Blair R. / Andy V. 143 Diamond Avenue Parachute, CO 81635

Entire Report Reviewed By: Chris Ward

Chris Ward
Project Manager



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

TABLE OF CONTENTS

SAMPLE SUMMARY

20231010-NPRBG-(020696-W-10:57)@2 L1665062-01 Solid

Collected by: Tristan Schmalz
Collected date/time: 10/10/23 10:57
Received date/time: 10/11/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020	WG2149660	5	10/12/23 00:26	10/12/23 13:31	JPD	Mt. Juliet, TN

20231010-NPRBG-(020696-W-10:57)@2 L1665062-02 Solid

Collected by: Tristan Schmalz
Collected date/time: 10/10/23 10:57
Received date/time: 10/11/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020	WG2149660	5	10/12/23 00:26	10/12/23 13:49	JPD	Mt. Juliet, TN

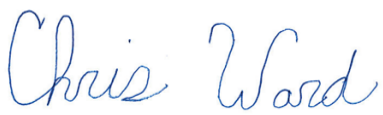
20231010-NPRBG-(020696-W-10:57)@2 L1665062-03 Solid

Collected by: Tristan Schmalz
Collected date/time: 10/10/23 10:57
Received date/time: 10/11/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020	WG2149660	5	10/12/23 00:26	10/12/23 13:52	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

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	7.48		0.100	1.00	5	10/12/2023 13:31	WG2149660

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	7.81		0.100	1.00	5	10/12/2023 13:49	WG2149660

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Arsenic	9.27		0.100	1.00	5	10/12/2023 13:52	WG2149660

Method Blank (MB)

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

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

Laboratory Control Sample (LCS)

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

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	92.7	92.7	80.0-120	

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

(OS) L1665072-01 10/12/23 13:08 • (MS) R3985448-5 10/12/23 13:18 • (MSD) R3985448-6 10/12/23 13:22

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	2.93	90.7	85.5	87.7	82.5	5	75.0-125			5.91	20

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.

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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

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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

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

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

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

Caerus Oil and Gas
143 Diamond Avenue
Parachute, CO 81635

Billing Information: SAME AS LEFT

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

Pace Analytical® National Center for Testing & Innovation

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

Report to: Blair Rollins

Email To: brollins@caerusoilandgas.com

Project Description: D20 6916 Pit Remediation

City/State Collected: Piceance Crk, CO

Please Circle: PT MT CT ET

SDG # L1645062

F097

Phone: (970) 640-6919

Client Project #

Lab Project #

Collected by (print): Tristan Schmalz

Site/Facility ID # D20 6916 PAD

P.O. #

Collected by (signature): Tristan Schmalz

Immediately Packed on Ice N ___ Y X

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

Quote #

Date Results Needed: Standard TAT

Acctnum:
Template:
Prelogin:
PM:
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	COGCC Table 915-1	EC, pH, SAR	Arsenic, Boron	COGCC Table 910-1	Arsenic	Remarks	Sample # (lab only)
20231010-NPREG-D20 696-W-10:57)@2	Grab	SS	2ft	10/10/23	10:57	1					X		-01
20231010-NPREG-(D20 696-W-10:57)@2	↓	↓	↓	↓	↓	↓					X		-02
20231010-NPREG-(D20 696-W-10:57)@2											X		-03

Tristan Schmalz 10/10/2023

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

Remarks:

pH _____ Temp _____

Flow _____ Other _____

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

Tracking # 652555724479

Sample Receipt Checklist
COC Seal Present/Intact: __NP X Y __N
COC Signed/Accurate: X Y __N
Bottles arrive intact: X Y __N
Correct bottles used: X Y __N
Sufficient volume sent: X Y __N
If Applicable
VOA Zero Headspace: X Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: X Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Tristan Schmalz	10/10/2023	13:30		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp 4.8 °C Bottles Received: 1
	10/10/23	1500		4.0
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10/10/23 Time: 2345

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

ANALYTICAL REPORT

April 26, 2023

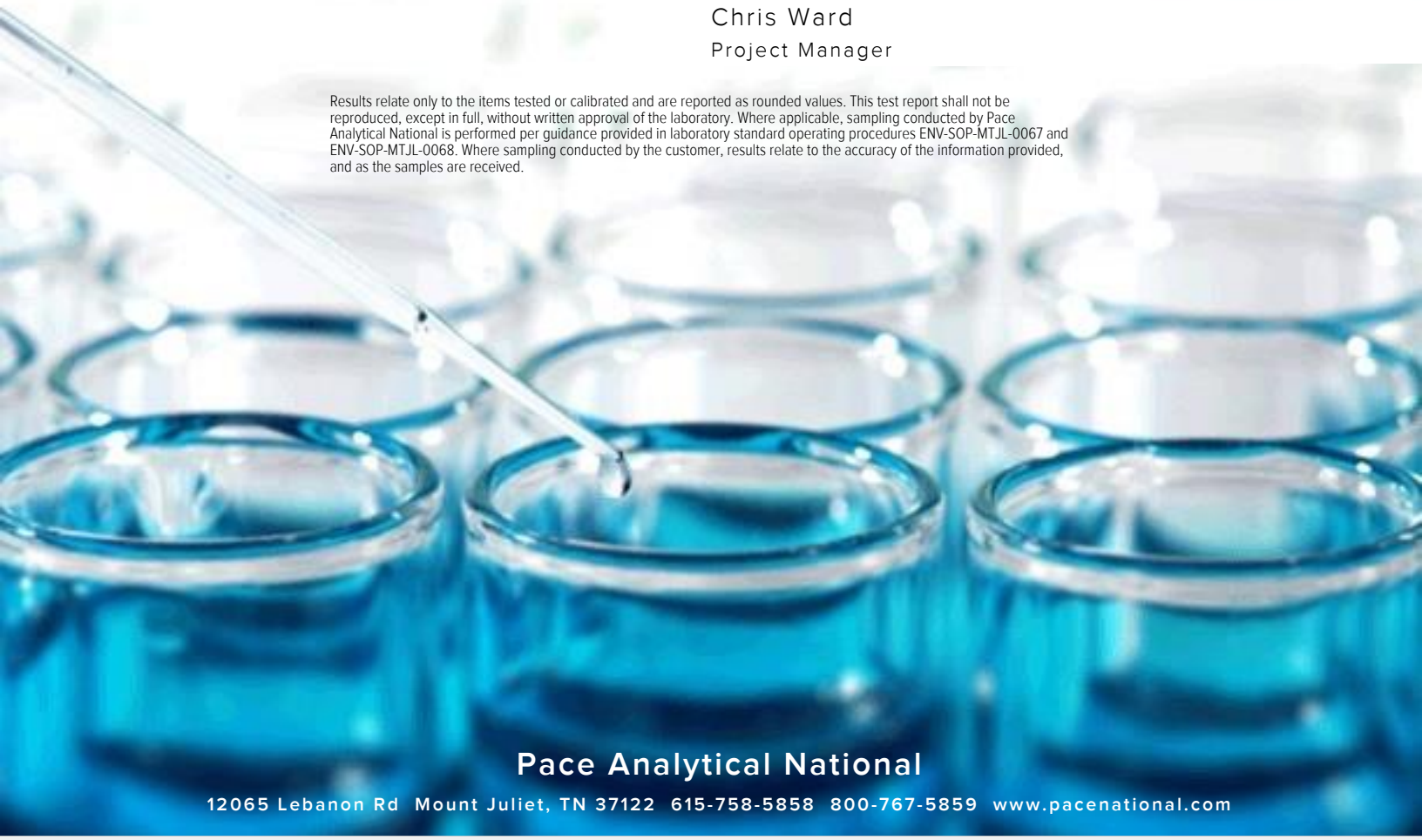
Revised Report

Caerus Oil and Gas

Sample Delivery Group:	L1606586
Samples Received:	04/18/2023
Project Number:	
Description:	D20 696 Flowline Investigation
Site:	D20 696
Report To:	Brett M. , Jake J. , Blair R. 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

20230417-NPRBG-(D20 696-N01)@0.25 L1606586-01 Solid

Collected by: Tristan Schmalz
Collected date/time: 04/17/23 11:25
Received date/time: 04/18/23 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2045647	1	04/25/23 12:45	04/25/23 12:45	SPL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2045352	1	04/21/23 11:53	04/24/23 01:43	VSS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2045165	1	04/20/23 07:02	04/20/23 13:52	DB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2045122	1	04/21/23 08:08	04/21/23 10:17	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2045650	1	04/24/23 11:40	04/25/23 09:33	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2044991	5	04/20/23 00:21	04/20/23 11:58	JPD	Mt. Juliet, TN

20230417-NPRBG-(D20 696-W01)@0.25 L1606586-02 Solid

Collected by: Tristan Schmalz
Collected date/time: 04/17/23 11:40
Received date/time: 04/18/23 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2045647	1	04/25/23 12:47	04/25/23 12:47	SPL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2045352	1	04/21/23 11:53	04/24/23 01:48	VSS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2045165	1	04/20/23 07:02	04/20/23 13:52	DB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2045122	1	04/21/23 08:08	04/21/23 10:17	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2045650	1	04/24/23 11:40	04/25/23 09:36	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2044991	5	04/20/23 00:21	04/20/23 12:02	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

Report Revision History

Level II Report - Version 1: 04/25/23 17:27

Project Narrative

Report reissued 4/26 to update sample IDs

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	SAR				
Sodium Adsorption Ratio	33.7		1	04/25/2023 12:45	WG2045647

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	04/24/2023 01:43	WG2045352

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	7.95	T8	1	04/20/2023 13:52	WG2045165

Sample Narrative:

L1606586-01 WG2045165: 7.95 at 19.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	6350		10.0	1	04/21/2023 10:17	WG2045122

Sample Narrative:

L1606586-01 WG2045122: at 25C

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	1.56		0.0167	0.200	1	04/25/2023 09:33	WG2045650

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	7.09		0.100	1.00	5	04/20/2023 11:58	WG2044991
Barium	155		0.152	2.50	5	04/20/2023 11:58	WG2044991
Cadmium	0.613	J	0.0855	1.00	5	04/20/2023 11:58	WG2044991
Copper	15.5		0.132	5.00	5	04/20/2023 11:58	WG2044991
Lead	12.4		0.0990	2.00	5	04/20/2023 11:58	WG2044991
Nickel	14.7		0.197	2.50	5	04/20/2023 11:58	WG2044991
Selenium	0.851	J	0.180	2.50	5	04/20/2023 11:58	WG2044991
Silver	0.0907	J	0.0865	0.500	5	04/20/2023 11:58	WG2044991
Zinc	59.5		0.740	25.0	5	04/20/2023 11:58	WG2044991

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	SAR				
Sodium Adsorption Ratio	30.7		1	04/25/2023 12:47	WG2045647

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	04/24/2023 01:48	WG2045352

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.22	T8	1	04/20/2023 13:52	WG2045165

Sample Narrative:

L1606586-02 WG2045165: 8.22 at 19.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	12400		10.0	1	04/21/2023 10:17	WG2045122

Sample Narrative:

L1606586-02 WG2045122: at 25C

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.394		0.0167	0.200	1	04/25/2023 09:36	WG2045650

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.18		0.100	1.00	5	04/20/2023 12:02	WG2044991
Barium	31.7		0.152	2.50	5	04/20/2023 12:02	WG2044991
Cadmium	0.376	J	0.0855	1.00	5	04/20/2023 12:02	WG2044991
Copper	11.5		0.132	5.00	5	04/20/2023 12:02	WG2044991
Lead	8.58		0.0990	2.00	5	04/20/2023 12:02	WG2044991
Nickel	9.86		0.197	2.50	5	04/20/2023 12:02	WG2044991
Selenium	0.440	J	0.180	2.50	5	04/20/2023 12:02	WG2044991
Silver	U		0.0865	0.500	5	04/20/2023 12:02	WG2044991
Zinc	42.4		0.740	25.0	5	04/20/2023 12:02	WG2044991

Method Blank (MB)

(MB) R3916419-1 04/24/23 01:20

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

L1606425-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1606425-09 04/24/23 01:33 • (DUP) R3916419-3 04/24/23 01:38

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

L1606853-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1606853-05 04/24/23 03:12 • (DUP) R3916419-8 04/24/23 03:27

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) R3916419-2 04/24/23 01:28

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	10.0	10.5	105	80.0-120	

L1606850-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1606850-05 04/24/23 02:25 • (MS) R3916419-5 04/24/23 02:35 • (MSD) R3916419-6 04/24/23 02:40

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	U	15.2	15.7	75.8	78.3	1	75.0-125			3.23	20

L1606850-05 Original Sample (OS) • Matrix Spike (MS)

(OS) L1606850-05 04/24/23 02:25 • (MS) R3916419-7 04/24/23 02:46

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	643	U	586	91.1	50	75.0-125	

L1606586-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1606586-02 04/20/23 13:52 • (DUP) R3915440-2 04/20/23 13:52

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	pH	su		%		%
pH	8.22	8.25	1	0.364		1

Sample Narrative:

OS: 8.22 at 19.5C

DUP: 8.25 at 19.4C

Laboratory Control Sample (LCS)

(LCS) R3915440-1 04/20/23 13:52

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 18.7C

Method Blank (MB)

(MB) R3915755-1 04/21/23 10:17

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

L1606143-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1606143-02 04/21/23 10:17 • (DUP) R3915755-3 04/21/23 10:17

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	2620	2610	1	0.0765		20

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

L1606591-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1606591-01 04/21/23 10:17 • (DUP) R3915755-4 04/21/23 10:17

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	5630	5660	1	0.531		20

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

Laboratory Control Sample (LCS)

(LCS) R3915755-2 04/21/23 10:17

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	1120	1070	95.3	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3917057-1 04/25/23 09:25

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) R3917057-2 04/25/23 09:27 • (LCSD) R3917057-3 04/25/23 09:30

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	1.05	1.04	105	104	80.0-120			0.515	20

Method Blank (MB)

(MB) R3915359-1 04/20/23 10:28

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

Laboratory Control Sample (LCS)

(LCS) R3915359-2 04/20/23 10:32

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	92.1	92.1	80.0-120	
Barium	100	93.4	93.4	80.0-120	
Cadmium	100	97.4	97.4	80.0-120	
Copper	100	89.5	89.5	80.0-120	
Lead	100	94.9	94.9	80.0-120	
Nickel	100	94.7	94.7	80.0-120	
Selenium	100	100	100	80.0-120	
Silver	20.0	19.6	98.1	80.0-120	
Zinc	100	93.3	93.3	80.0-120	

L1606530-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1606530-01 04/20/23 10:35 • (MS) R3915359-5 04/20/23 10:45 • (MSD) R3915359-6 04/20/23 10:48

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	99.7	3.32	94.2	90.0	90.9	86.7	5	75.0-125			4.54	20
Barium	99.7	86.0	178	156	92.3	69.6	5	75.0-125		J6	13.6	20
Cadmium	99.7	0.211	97.3	92.1	97.1	91.9	5	75.0-125			5.43	20
Copper	99.7	7.01	93.4	88.2	86.4	81.2	5	75.0-125			5.74	20
Lead	99.7	9.23	102	99.9	92.6	90.7	5	75.0-125			1.97	20
Nickel	99.7	11.0	104	98.4	93.5	87.4	5	75.0-125			6.04	20
Selenium	99.7	0.473	98.9	94.6	98.4	94.1	5	75.0-125			4.49	20
Silver	20.0	U	19.1	18.4	95.3	91.8	5	75.0-125			3.72	20
Zinc	99.7	32.7	127	114	93.8	81.3	5	75.0-125			10.4	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
J	The identification of the analyte is acceptable; the reported value is an estimate.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
T8	Sample(s) received past/too close to holding time expiration.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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

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

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

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

Caerus Oil and Gas
143 Diamond Avenue
Parachute, CO 81635

Billing Information:
SAME AS LEFT

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

Pace Analytical®
National Center for Testing & Innovation

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

Report to:
Blair Rollins

Email To:
brollins@caerusoilandgas.com

Project Description:
D20 696 Flowline Investigation

City/State Collected: Piceance Crk, CO

Please Circle: PT (MT) CT ET

Phone: (970) 640-6919

Client Project #

Lab Project #

SDG # L1626586

Table #

B149

Acctnum:

Template:

Prelogin:

PM:

PB:

Shipped Via:

Collected by (print):
Tristan Schmalz

Site/Facility ID #
D20 696

P.O. #

Collected by (signature):
Tristan Schmalz

Immediately Packed on Ice N ___ Y X

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

Quote #

Date Results Needed
Standard TAT

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	COGCC Table 915-1	EC, pH, SAR	Arsenic, Boron	COGCC Table 910-1	COGCC Table 915-1 MINUS Organics						Remarks	Sample # (lab only)
20230417-NPRBG-(D20 696-W01)@0.25	Grab	SS	0.25 ft	4/17/23	11:26	2					X							-01
20230417-NPRBG-(D20 696-W01)@0.25	Grab	SS	0.25 ft	4/17/23	11:40	2					X							-02

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

Remarks:

pH ______ Temp ______
Flow ______ Other ______

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

Tracking # 6126 6537 6018

Sample Receipt Checklist
COC Seal Present/Intact: __NP (Y) __N
COC Signed/Accurate: Y __N
Bottles arrive intact: Y __N
Correct bottles used: Y __N
Sufficient volume sent: Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: (Y) __N

Relinquished by : (Signature) Tristan Schmalz — Date: 4/17/23 — Time: 13:30 — Received by: (Signature) [signature]

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

Relinquished by : (Signature) [signature] — Date: 4/17/23 — Time: 1600 — Received by: (Signature)

Temp: LSLU °C 3.9+0=3.9 — Bottles Received: 4

If preservation required by Login: Date/Time

Relinquished by : (Signature) — Date: — Time: — Received for lab by: (Signature) [signature] 10

Date: 4-18-23 — Time: 9:30

Hold:

Condition: NCF / (OK)

ANALYTICAL REPORT

March 09, 2023

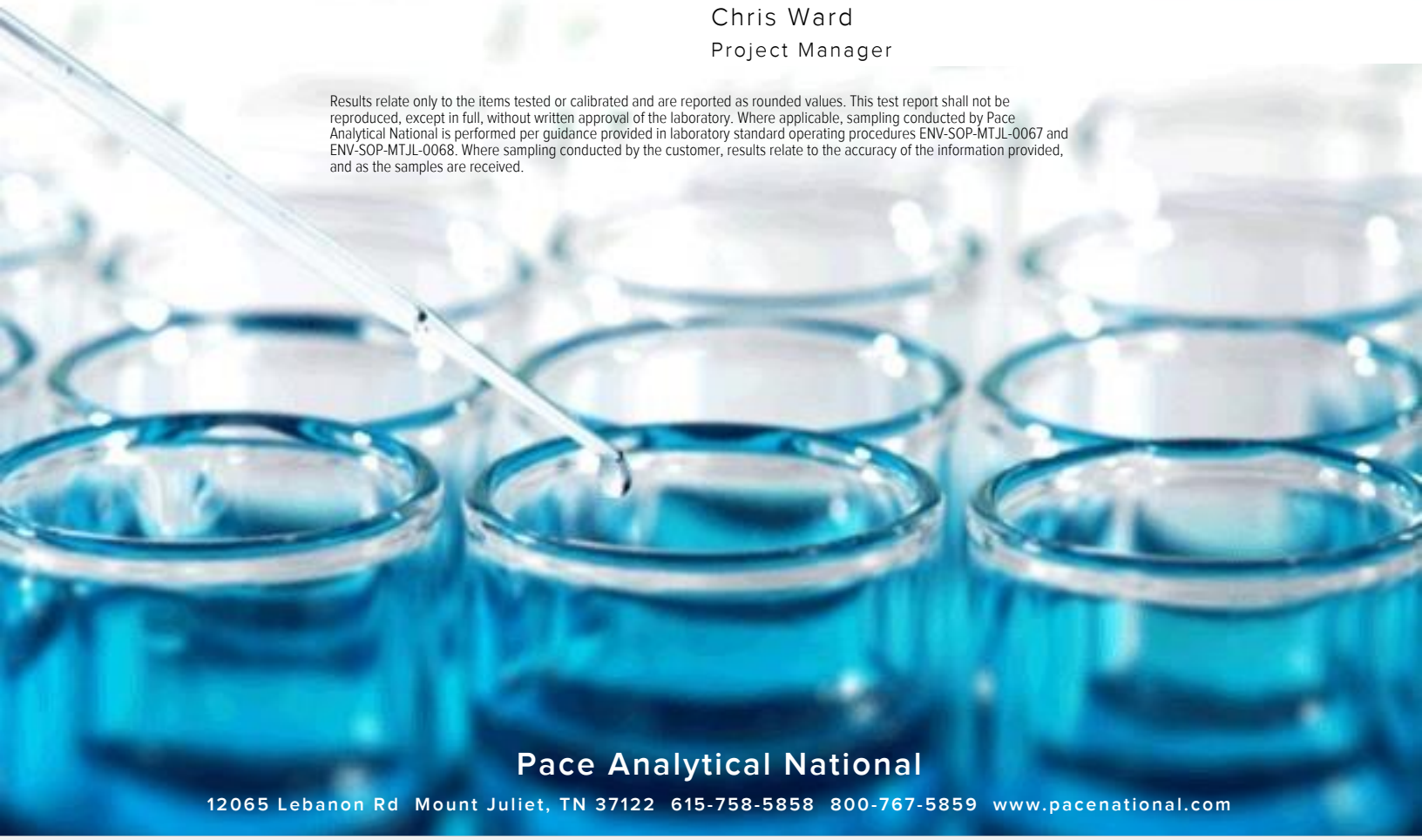
Caerus Oil and Gas

Sample Delivery Group:	L1590238
Samples Received:	03/01/2023
Project Number:	
Description:	D20 Background Samples
Site:	D20 PAD
Report To:	Blair R., Jake J., Brett M. 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

20230228_D20_BG01 @ 1FT L1590238-01 Solid

Collected by: Tristan Schmalz | Collected date/time: 02/28/23 10:30 | Received date/time: 03/01/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2014955	1	03/02/23 14:13	03/02/23 14:13	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2015403	1	03/02/23 06:29	03/02/23 16:36	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2015296	1	03/01/23 19:00	03/01/23 21:24	KAD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2014712	1	03/02/23 07:30	03/02/23 10:05	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2018611	1	03/08/23 09:55	03/08/23 16:01	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2015893	5	03/02/23 13:44	03/02/23 23:45	LD	Mt. Juliet, TN

20230228_D20_BG02 @ 1FT L1590238-02 Solid

Collected by: Tristan Schmalz | Collected date/time: 02/28/23 10:42 | Received date/time: 03/01/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2014955	1	03/02/23 14:16	03/02/23 14:16	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2015403	1	03/02/23 06:29	03/02/23 16:42	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2015296	1	03/01/23 19:00	03/01/23 21:24	KAD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2014712	1	03/02/23 07:30	03/02/23 10:05	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2018611	1	03/08/23 09:55	03/08/23 16:04	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2015893	5	03/02/23 13:44	03/02/23 22:30	LD	Mt. Juliet, TN

20230228_D20_BG03 @ 1FT L1590238-03 Solid

Collected by: Tristan Schmalz | Collected date/time: 02/28/23 10:54 | Received date/time: 03/01/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2014955	1	03/02/23 14:19	03/02/23 14:19	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2015403	1	03/02/23 06:29	03/02/23 16:47	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2015296	1	03/01/23 19:00	03/01/23 21:24	KAD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2014712	1	03/02/23 07:30	03/02/23 10:05	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2018611	1	03/08/23 09:55	03/08/23 16:07	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2015893	5	03/02/23 13:44	03/02/23 23:48	LD	Mt. Juliet, TN

20230228_D20_BG04 @ 1FT L1590238-04 Solid

Collected by: Tristan Schmalz | Collected date/time: 02/28/23 11:09 | Received date/time: 03/01/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2014955	1	03/02/23 14:21	03/02/23 14:21	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2015403	1	03/02/23 06:29	03/02/23 17:23	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2015296	1	03/01/23 19:00	03/01/23 21:24	KAD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2014712	1	03/02/23 07:30	03/02/23 10:05	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2018611	1	03/08/23 09:55	03/08/23 16:10	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2015893	5	03/02/23 13:44	03/02/23 23:51	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	1.83		1	03/02/2023 14:13	WG2014955

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	03/02/2023 16:36	WG2015403

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	9.02	T8	1	03/01/2023 21:24	WG2015296

Sample Narrative:

L1590238-01 WG2015296: 9.02 at 21.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	173		10.0	1	03/02/2023 10:05	WG2014712

Sample Narrative:

L1590238-01 WG2014712: at 25C

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.809		0.0167	0.200	1	03/08/2023 16:01	WG2018611

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	6.70		0.100	1.00	5	03/02/2023 23:45	WG2015893
Barium	192		0.152	2.50	5	03/02/2023 23:45	WG2015893
Cadmium	0.470	J	0.0855	1.00	5	03/02/2023 23:45	WG2015893
Copper	13.3		0.132	5.00	5	03/02/2023 23:45	WG2015893
Lead	10.3		0.0990	2.00	5	03/02/2023 23:45	WG2015893
Nickel	14.0		0.197	2.50	5	03/02/2023 23:45	WG2015893
Selenium	0.639	J	0.180	2.50	5	03/02/2023 23:45	WG2015893
Silver	U		0.0865	0.500	5	03/02/2023 23:45	WG2015893
Zinc	54.7		0.740	25.0	5	03/02/2023 23:45	WG2015893

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.391		1	03/02/2023 14:16	WG2014955

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	03/02/2023 16:42	WG2015403

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.00	T8	1	03/01/2023 21:24	WG2015296

Sample Narrative:

L1590238-02 WG2015296: 8 at 21.4C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	294		10.0	1	03/02/2023 10:05	WG2014712

Sample Narrative:

L1590238-02 WG2014712: at 25C

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.759		0.0167	0.200	1	03/08/2023 16:04	WG2018611

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	16.4		0.100	1.00	5	03/02/2023 22:30	WG2015893
Barium	269	J6	0.152	2.50	5	03/02/2023 22:30	WG2015893
Cadmium	0.537	J	0.0855	1.00	5	03/02/2023 22:30	WG2015893
Copper	11.2		0.132	5.00	5	03/02/2023 22:30	WG2015893
Lead	10.7		0.0990	2.00	5	03/02/2023 22:30	WG2015893
Nickel	8.68		0.197	2.50	5	03/02/2023 22:30	WG2015893
Selenium	0.957	J	0.180	2.50	5	03/02/2023 22:30	WG2015893
Silver	U		0.0865	0.500	5	03/02/2023 22:30	WG2015893
Zinc	28.7	O1	0.740	25.0	5	03/02/2023 22:30	WG2015893

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.0814		1	03/02/2023 14:19	WG2014955

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U	J3 J6	0.255	1.00	1	03/02/2023 16:47	WG2015403

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	7.81	T8	1	03/01/2023 21:24	WG2015296

Sample Narrative:

L1590238-03 WG2015296: 7.81 at 21.9C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	1210		10.0	1	03/02/2023 10:05	WG2014712

Sample Narrative:

L1590238-03 WG2014712: at 25C

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.670		0.0167	0.200	1	03/08/2023 16:07	WG2018611

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.30		0.100	1.00	5	03/02/2023 23:48	WG2015893
Barium	90.2		0.152	2.50	5	03/02/2023 23:48	WG2015893
Cadmium	0.763	J	0.0855	1.00	5	03/02/2023 23:48	WG2015893
Copper	15.4		0.132	5.00	5	03/02/2023 23:48	WG2015893
Lead	12.2		0.0990	2.00	5	03/02/2023 23:48	WG2015893
Nickel	20.1		0.197	2.50	5	03/02/2023 23:48	WG2015893
Selenium	1.10	J	0.180	2.50	5	03/02/2023 23:48	WG2015893
Silver	U		0.0865	0.500	5	03/02/2023 23:48	WG2015893
Zinc	68.5		0.740	25.0	5	03/02/2023 23:48	WG2015893

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.0447		1	03/02/2023 14:21	WG2014955

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	03/02/2023 17:23	WG2015403

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	7.57	T8	1	03/01/2023 21:24	WG2015296

Sample Narrative:

L1590238-04 WG2015296: 7.57 at 21.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	651		10.0	1	03/02/2023 10:05	WG2014712

Sample Narrative:

L1590238-04 WG2014712: at 25C

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.759		0.0167	0.200	1	03/08/2023 16:10	WG2018611

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	1.79		0.100	1.00	5	03/02/2023 23:51	WG2015893
Barium	58.0		0.152	2.50	5	03/02/2023 23:51	WG2015893
Cadmium	0.706	J	0.0855	1.00	5	03/02/2023 23:51	WG2015893
Copper	29.2		0.132	5.00	5	03/02/2023 23:51	WG2015893
Lead	17.4		0.0990	2.00	5	03/02/2023 23:51	WG2015893
Nickel	19.2		0.197	2.50	5	03/02/2023 23:51	WG2015893
Selenium	0.563	J	0.180	2.50	5	03/02/2023 23:51	WG2015893
Silver	0.109	J	0.0865	0.500	5	03/02/2023 23:51	WG2015893
Zinc	90.6		0.740	25.0	5	03/02/2023 23:51	WG2015893

Method Blank (MB)

(MB) R3897065-1 03/02/23 15:11

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

L1590231-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1590231-01 03/02/23 15:24 • (DUP) R3897065-3 03/02/23 15:29

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

L1590235-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1590235-01 03/02/23 15:55 • (DUP) R3897065-4 03/02/23 16:00

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) R3897065-2 03/02/23 15:19

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	10.0	11.7	117	80.0-120	

L1590238-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1590238-03 03/02/23 16:47 • (MS) R3897065-7 03/02/23 16:52 • (MSD) R3897065-8 03/02/23 16:57

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	20.0	U	14.5	18.5	72.3	92.6	1	75.0-125	J6	J3	24.6	20

L1590238-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1590238-03 03/02/23 16:47 • (MS) R3897065-9 03/02/23 17:02

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	641	U	734	114	50	75.0-125	

L1590235-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1590235-03 03/01/23 21:24 • (DUP) R3896339-2 03/01/23 21:24

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	pH	su		%		%
pH	8.56	8.54	1	0.234		1

Sample Narrative:

OS: 8.56 at 22.1C

DUP: 8.54 at 21.8C

L1590238-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1590238-04 03/01/23 21:24 • (DUP) R3896339-3 03/01/23 21:24

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	pH	su		%		%
pH	7.57	7.61	1	0.527		1

Sample Narrative:

OS: 7.57 at 21.7C

DUP: 7.61 at 21.6C

Laboratory Control Sample (LCS)

(LCS) R3896339-1 03/01/23 21:24

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	9.96	99.6	99.0-101	

Sample Narrative:

LCS: 9.96 at 21.7C

Method Blank (MB)

(MB) R3896483-1 03/02/23 10:05

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

L1589348-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1589348-07 03/02/23 10:05 • (DUP) R3896483-3 03/02/23 10:05

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	535	531	1	0.750		20

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

L1589779-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1589779-01 03/02/23 10:05 • (DUP) R3896483-4 03/02/23 10:05

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	8540	8460	1	0.941		20

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

Laboratory Control Sample (LCS)

(LCS) R3896483-2 03/02/23 10:05

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	1120	1150	103	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3898999-1 03/08/23 15:21

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) R3898999-2 03/08/23 15:24 • (LCSD) R3898999-3 03/08/23 15:26

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	1.09	1.12	109	112	80.0-120			2.39	20

Method Blank (MB)

(MB) R3896797-1 03/02/23 22:24

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

Laboratory Control Sample (LCS)

(LCS) R3896797-2 03/02/23 22:27

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	97.9	97.9	80.0-120	
Barium	100	98.0	98.0	80.0-120	
Cadmium	100	104	104	80.0-120	
Copper	100	109	109	80.0-120	
Lead	100	102	102	80.0-120	
Nickel	100	101	101	80.0-120	
Selenium	100	107	107	80.0-120	
Silver	20.0	19.0	95.1	80.0-120	
Zinc	100	98.7	98.7	80.0-120	

L1590238-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1590238-02 03/02/23 22:30 • (MS) R3896797-5 03/02/23 22:40 • (MSD) R3896797-6 03/02/23 22:43

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	16.4	107	108	90.2	91.9	5	75.0-125			1.63	20
Barium	100	269	313	320	44.5	51.5	5	75.0-125	J6	J6	2.22	20
Cadmium	100	0.537	106	106	106	106	5	75.0-125			0.364	20
Copper	100	11.2	107	112	96.0	101	5	75.0-125			4.48	20
Lead	100	10.7	116	114	106	104	5	75.0-125			1.73	20
Nickel	100	8.68	108	108	98.8	99.3	5	75.0-125			0.382	20
Selenium	100	0.957	111	110	110	109	5	75.0-125			0.340	20
Silver	20.0	U	19.1	18.8	95.7	93.9	5	75.0-125			1.91	20
Zinc	100	28.7	123	123	94.0	94.5	5	75.0-125			0.433	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
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.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
T8	Sample(s) received past/too close to holding time expiration.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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

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

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

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

Caerus Oil and Gas
143 Diamond Avenue
Parachute, CO 81635

Billing Information: SAME AS LEFT

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

Pace Analytical®
National Center for Testing & Innovation

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

Report to: Blair Rollins

Email To: brollins@caerusoilandgas.com

Project Description: D20 Background Samples

City/State Collected: Piceance Crk, CO

Please Circle: PT (MT) CT ET

SDG # L590238
A050

Phone: (970) 640-6919

Client Project #

Lab Project #

Collected by (print): Tristan Schmalz

Site/Facility ID # D20 Pad

P.O. #

Collected by (signature): Tristan Schmalz

Immediately Packed on Ice N ___ Y X

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

Quote #

Date Results Needed: Standard TAT

Acctnum:
Template:
Prelogin:
PM:
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	COGCC Table 915-1	EC, pH, SAR	Arsenic, Boron	COGCC Table 910-1	COGCC Table 915-1 Minus Organics						Remarks	Sample # (lab only)
20230228_D20_BG01@1ft	Grab	SS	1ft	2/28/23	10:30	2					X							-01
20230228_D20_BG02@1ft	Grab	SS	1ft	2/28/23	10:42	2					X							-02
20230228_D20_BG03@1ft	Grab	SS	1ft	2/28/23	10:54	2					X							-03
20230228_D20_BG04@1ft	Grab	SS	1ft	2/28/23	11:09	2					X							-04

Tristan Schmalz

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

Remarks:

pH _____ Temp _____

Flow _____ Other _____

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

Tracking # 6126 6537 4633

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Tristan Schmalz	2/28/23	12:45	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	2/28/23	1500	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: USA 7 °C Bottles Received: 8
1.5+0=1.5

If preservation required by Login: Date/Time

Date: 3-01-23 Time: 0900

Hold:

Condition: NCF / OK