May 17, 2023

Jake Janicek
Environmental Specialist
Caerus Oil & Gas LLC (Operator #: 10456)
jjanicek@caerusoilandgas.com

Report of Work Completed – Flowline Release

COGCC Location Name (ID)	ELU J14 /FED-496 PAD (467272)
Operator Location Name	J14 496
Spill/Release Point ID	483962
Legal Description	NESW Sec. 14 T4S-R96W
Coordinates (Lat/Long)	39.700728 / -108.136451
County	Rio Blanco County, Colorado

Mr. Janicek,

Confluence Compliance Companies, LLC (Confluence) prepared this Report of Work Completed (ROWC) for Caerus Oil & Gas LLC (Caerus) to document recent characterization activities associated with a flowline release at the J14 496 well pad (Location). The Location is 17.5 miles northwest of Parachute, Colorado in Rio Blanco County as illustrated in the attached Topographic Location Map. Additional information on the Location and associated release is provided in the title block above, attached Site Diagrams, and laboratory analytical reports. This ROWC provides background on the Location, methods used to complete the remedial investigation, results of the investigation, and recommendations for how to proceed with this information.

Background

On March 6, 2023, gas was detected leaking from the wellhead area at the Location. The suspected flowline was exposed, and the point of release (POR) was identified as a hole in the flowline, resulting in the release of an unknown volume of comingled fluids. The spill was reported using Colorado Oil and Gas Conservation Commission (COGCC) Form 19 Document 403340060, and Spill ID 483962 was assigned to the release.

Methodology

On March 14, 2023, Confluence conducted initial investigation activities to characterize potential soil impacts associated with the release. Prior to sampling activities, the flowline was trenched and the POR had been exposed. One soil sample was collected from the base of the excavation beneath the POR, and one soil sample was collected from each excavation sidewall. A composite soil sample was also collected from the stockpile on site. Soil samples were characterized using visual and olfactory observations and field screened for volatile organic compounds using a photoionization detector (PID).

All collected samples were placed in laboratory provided containers, immediately placed on ice, under chain of custody, and analyzed for COGCC Table 915-1 soil constituents of concern. The release area and sample locations are illustrated in the attached Site Diagram.

Results

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

Laboratory analytical reports are attached and summarized in the Laboratory Results Summary Table.

Lithology and Hydrogeology

Lithology at the Location is characterized as sandy gravel. Groundwater is expected to flow north along the East Fork Creek, and ultimately into the White River, located 21.5 miles north of the Location. Division of Water Resources (DWR) well permit 56839, located 0.12 miles north of the Location, lists a depth to water of 74 feet below ground surface (bgs) and sits approximately 150 feet lower in elevation than the Location. Based on this data, depth to groundwater at the Location is estimated to be greater than 100 feet bgs.

Initial Characterization Results

Field screening indicated potential impacts to soil with PID measurements ranging from 1.1 to 60.4 parts per million (ppm). Odor was noted in the eastern sidewall sample, and both odor and staining were noted in the northern sidewall sample. Analytical results of initial characterization soil samples are compliant with COGCC Table 915-1 Residential Soil Screening Levels except for total petroleum hydrocarbons (TPH), sodium adsorption ratio (SAR), pH, arsenic, and hexavalent chromium. TPH exceeds at 4,280 milligrams per kilogram (mg/kg). SAR exceedances range from 6.77 to 21.8. Exceedances of pH range from 8.60 to 8.81. Arsenic exceedances range from 3.01 to 4.91 mg/kg. Hexavalent chromium exceeds at 0.401 mg/kg.

Stockpile Characterization Results

Field screening did not indicate potential soil impacts with no odor or staining and a PID measurement of 5.7 ppm. Analytical results of stockpile characterization soil samples are compliant with COGCC Table 915-1 Residential Soil Screening Levels except for arsenic and pH. Arsenic exceeds at 4.80 mg/kg, and pH exceeds at 8.44.

Analysis and Recommendations

Due to the significant depth to groundwater of greater than 100 feet bgs, Confluence recommends that Caerus request to compare results of release investigation to COGCC Table 915-1 Residential Soil Screening Levels as no pathway to groundwater appears to exist.

Although levels of pH and arsenic above allowable limits remain in the investigation area, background samples collected from native, non-impacted, nearby soil in support of previous remedial investigations at the Location also demonstrate elevated levels of pH and arsenic.

Background sample 20220620-J14_496BGE(1510)@20' indicates a native arsenic value of 5.84 mg/kg. Soil boring 20220620-J14_496BGE is located approximately 20 feet higher in elevation than the release investigation samples, and the background sample was collected from 20 feet bgs while the spill investigation samples were collected from 4 feet bgs. Based on the elevation difference and sample collection depths, the samples were collected from approximately the same elevation.

Background samples BG01 through BG04 indicate a native pH value of 8.81. These samples were collected from the southern edge of the pad just below the soil surface prior to pad construction. Therefore, it is reasonable to conclude that 20220620-J14_496BGE(1510)@20', BG01, BG02, BG03, and BG04 background samples were collected from soil representative of those collected in support of release characterization. Confluence recommends that Caerus request alternative allowable limits for pH and arsenic of 8.81 and 5.84 mg/kg, respectively, in accordance with COGCC Table 915-1 Footnote 1.

Assuming the proposed screening levels and alternative allowable limits are accepted, all constituents of concern are delineated with the exception of TPH, SAR, and hexavalent chromium. TPH remains undelineated north of the POR, SAR remains undelineated both south and north of the POR, and hexavalent chromium remains undelineated south of the POR. Confluence recommends additional release investigation to delineate the horizontal extent of soil impacts. Confluence also recommends that Caerus request a reduced analyte list of TPH, SAR, and hexavalent chromium prior to additional remedial investigation.

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

Regards,

Sage Maher
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Managing Partner
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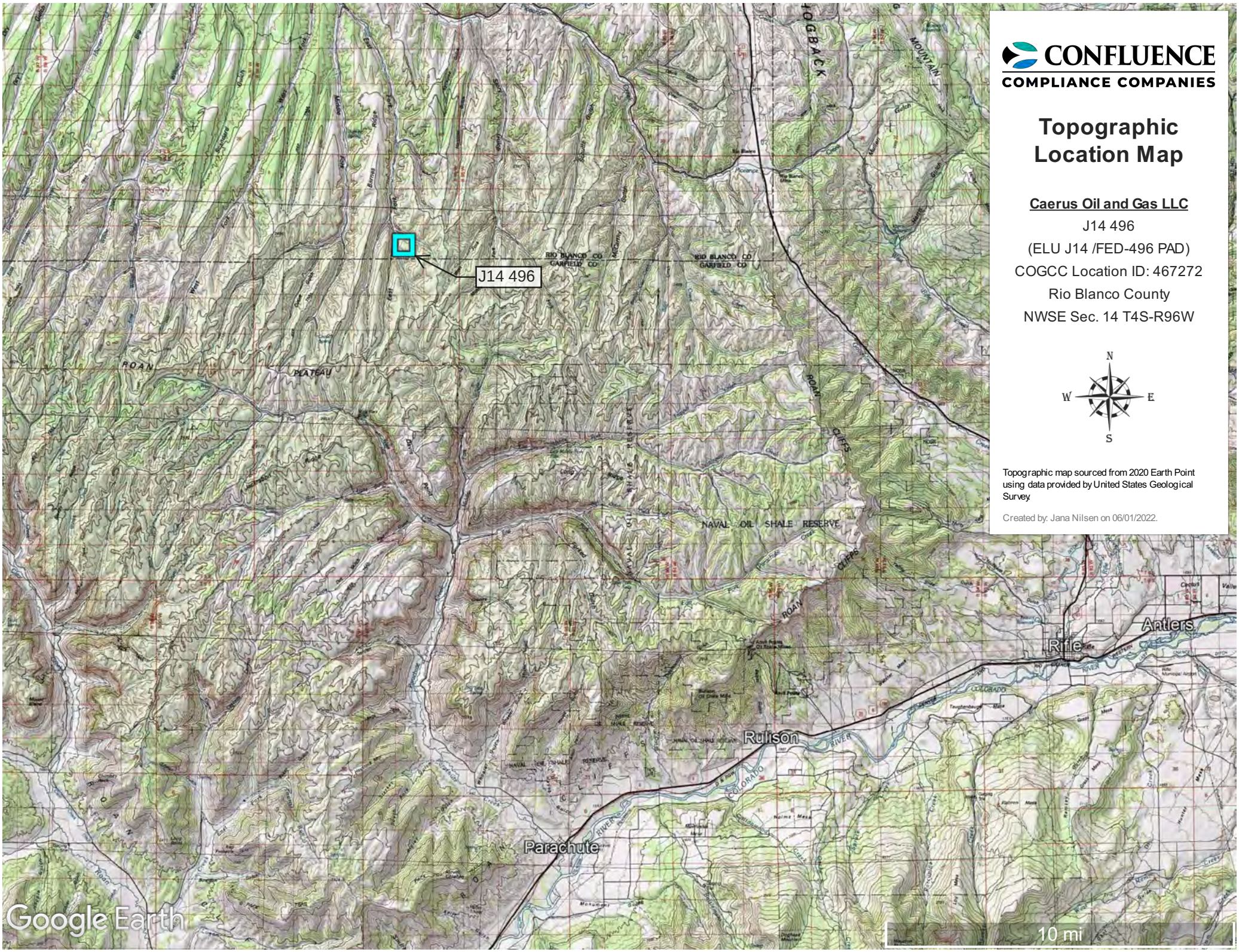
Attachments

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



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Topographic Location Map

Caerus Oil and Gas LLC

J14 496

(ELU J14 /FED-496 PAD)

COGCC Location ID: 467272

Rio Blanco County

NWSE Sec. 14 T4S-R96W

N
W E
S

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

Created by: Jana Nilsen on 06/01/2022.

CONFLUENCE
COMPLIANCE COMPANIES

Site Diagram
Site Investigation

Caerus Oil and Gas LLC
J14 496 Flowline Release
(ELU J14/FED-496)
COGCC Location ID: 467272
Rio Blanco County
NESW Sec. 14 T4S-R96W

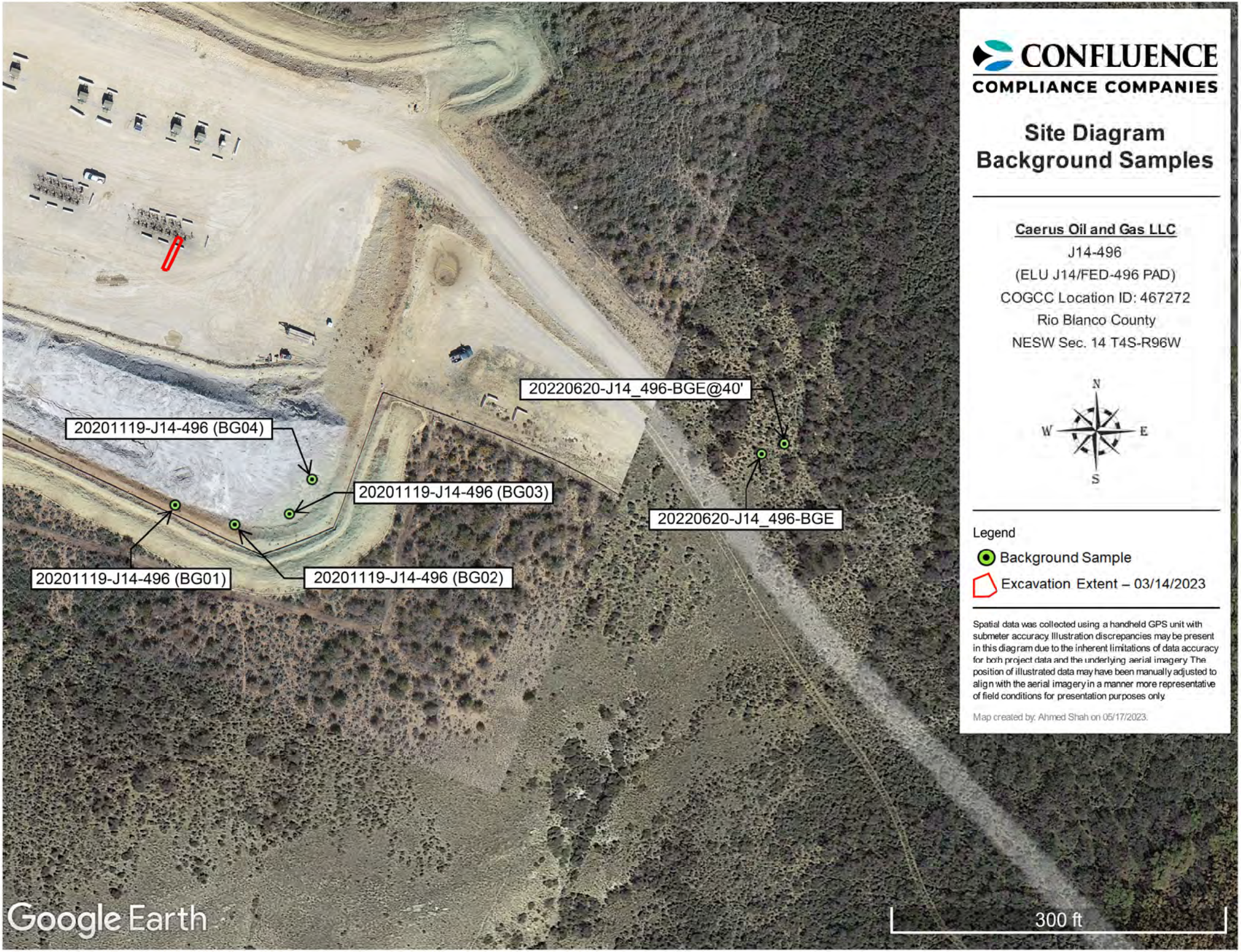
N
W E
S

Legend

- Soil Sample – 03/14/2023
- Excavation Boundary
- Soil Stockpile

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: Sage Maher on 03/17/2023.



CONFLUENCE
COMPLIANCE COMPANIES

Site Diagram
Background Samples

Caerus Oil and Gas LLC

J14-496

(ELU J14/FED-496 PAD)

COGCC Location ID: 467272

Rio Blanco County

NESW Sec. 14 T4S-R96W

N
W E
S

Legend

- Background Sample
- Excavation Extent – 03/14/2023

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: Ahmed Shah on 05/17/2023.

CONFLUENCE

Laboratory Results Summary Table - Soil
J14 496 Flowline Release

4/10/2023

Soil Screening and Remediation Limits					Organic Compounds (mg/kg [ppm])																										
COGCC 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	Sold(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-C10) Low Fraction	TPH-DRO (C10-C28) High Fraction	TPH-ORO (C28-C36) High Fraction	Benzene	Toluene	Ethylbenzene	Xylenes - total (sum of o-, m-, p- isomers)	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Acenaphthene	Anthracene	Benzo(A)anthracene	Benzo(A)pyrene	Benzo(B)fluoranthene	Benzo(K)fluoranthene	Chrysene	Dibenz(A,H)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-C,D)pyrene	1 - Methylnaphthalene	2 - Methylnaphthalene	Naphthalene	Pyrene
3/14/2023	Stockpile	NA	20230314-J14-469-STOCK_COMP	5.7	104.8	0.297	34.1	70.4	<0.00100	<0.00500	<0.00250	<0.00650	<0.00500	<0.00500	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	0.00326	<0.00600	0.0114	0.0186	0.00582	<0.00200
3/14/2023	Flowline	-4	20230314_J14-496_BOTTOM@4'	32.1	475.0	34.0	242	199	<0.0800	<0.400	<0.200	<0.520	0.454	0.502	0.00527	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	0.0103	<0.00600	0.284	0.935	0.345	0.00240
3/14/2023	Flowline	-4	20230314_J14-496_EWALL@4'	10.9	175.8	28.3	71.3	76.2	0.3650	2.08	0.197	3.80	1.47	1.37	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	0.0846	0.368	0.589	<0.00600
3/14/2023	Flowline	-4	20230314_J14-496_WWALL@4'	7.1	25.8	0.832	8.87	16.1	<0.00100	0.00288	0.00247	0.0230	0.0180	0.0136	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	0.00743	0.0169	0.00840	<0.00600
3/14/2023	Flowline	-4	20230314_J14-496_SWALL@4'	1.1	28.5	0.0500	8.23	20.2	<0.00100	<0.00500	<0.00250	<0.00650	<0.00500	<0.00500	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.0200	<0.0200	<0.0200	<0.00600
3/14/2023	Flowline	-4	20230314_J14-496_NWALL@4'	60.4	4280	201	3910	169	0.0380	1.08	0.396	5.56	4.87	5.75	<0.0600	<0.00600	<0.00600	<0.00600	0.00261	<0.00600	0.00769	<0.00600	0.023	1.01	<0.00600	2.28	9.54	1.75	0.0157
6/20/2022	Background	-30	20220620-J14_496-BGE(1520)@30'	NA	5.75	<0.100	<4.00	5.75	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6/20/2022	Background	-40	20220620-J14_496BGE(1640)@40'	NA	14.7	<0.100	<4.00	14.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6/20/2022	Background	-12	20220620-J14_496BGE(1455)@10'-12'	NA	ND	<0.100	<4.00	<4.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6/20/2022	Background	-20	20220620-J14_496BGE(1510)@20'	NA	ND	<0.100	<4.00	<4.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/19/2020	Background	NA	2020119-J14-496 (BG01)	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	NA
11/19/2020	Background	NA	2020119-J14-496 (BG02)	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	NA
11/19/2020	Background	NA	2020119-J14-496 (BG03)	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	NA
11/19/2020	Background	NA	2020119-J14-496 (BG04)	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	NA

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

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

CONFLUENCE

Laboratory Results Summary Table - Soil
J14 496 Flowline Release

4/10/2023

Soil Screening and Remediation Limits					Soil Suitability for Reclamation				Metals (mg/kg [ppm])									
COGCC Table 915-1 Residential -->				NA	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	PID (ppm)	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
3/14/2023	Stockpile	NA	20230314-J14-469-STOCK_COMP	5.7	0.515	3.14	8.44	0.21	4.80	2010	0.299	<1.00	12.1	9.56	15.7	0.321	<0.500	41.0
3/14/2023	Flowline	-4	20230314_J14-496_BOTTOM@4'	32.1	0.205	1.95	8.27	0.164	3.01	2330	0.174	<1.00	15.3	10.2	6.6	0.331	<0.500	47.2
3/14/2023	Flowline	-4	20230314_J14-496_EWALL@4'	10.9	0.112	1.00	8.66	0.0959	4.15	571	0.304	<1.00	12.9	7.56	8.6	0.391	<0.500	31.1
3/14/2023	Flowline	-4	20230314_J14-496_WWALL@4'	7.1	0.301	4.51	8.60	0.320	4.91	603	0.138	<1.00	9.40	8.06	15.4	0.310	<0.500	37.6
3/14/2023	Flowline	-4	20230314_J14-496_SWALL@4'	1.1	0.379	6.77	8.81	0.0877	4.71	423	0.337	0.401	10.7	9.03	15.2	0.433	<0.500	38.4
3/14/2023	Flowline	-4	20230314_J14-496_NWALL@4'	60.4	1.160	21.8	8.65	0.308	3.25	1490	0.242	<1.00	8.63	6.79	14.2	0.423	<0.500	39.7
6/20/2022	Background	-30	20220620-J14_496-BGE(1520)@30'	NA	0.300	0.0738	8.66	<0.200	2.67	381	<0.500	<1.00	15.4	9.44	16.5	<2.00	<1.00	40.7
6/20/2022	Background	-40	20220620-J14_496BGE(1640)@40'	NA	0.279	0.441	8.34	<0.200	3.23	513	<0.500	<1.00	13.3	8.29	16.2	<2.00	<1.00	42.2
6/20/2022	Background	-12	20220620-J14_496BGE(1455)@10'-12'	NA	0.262	1.38	8.35	<0.200	3.66	296	<0.500	<1.00	18.8	11.7	20.2	<2.00	<1.00	54.7
6/20/2022	Background	-20	20220620-J14_496BGE(1510)@20'	NA	0.216	1.16	8.43	<0.200	5.84	164	<0.500	<1.00	10.1	7.24	25.2	<2.00	<1.00	37.3
11/19/2020	Background	NA	2020119-J14-496 (BG01)	NA	0.110	0.639	8.74	NA	3.31	NA	NA	<2.00	NA	NA	NA	NA	NA	NA
11/19/2020	Background	NA	2020119-J14-496 (BG02)	NA	0.268	2.36	8.81	NA	2.41	NA	NA	<2.00	NA	NA	NA	NA	NA	NA
11/19/2020	Background	NA	2020119-J14-496 (BG03)	NA	0.289	1.84	8.59	NA	3.62	NA	NA	<2.00	NA	NA	NA	NA	NA	NA
11/19/2020	Background	NA	2020119-J14-496 (BG04)	NA	0.500	2.63	8.49	NA	3.45	NA	NA	<2.00	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 Compliance Companies, LLC
info@confluence-cc.com

ANALYTICAL REPORT

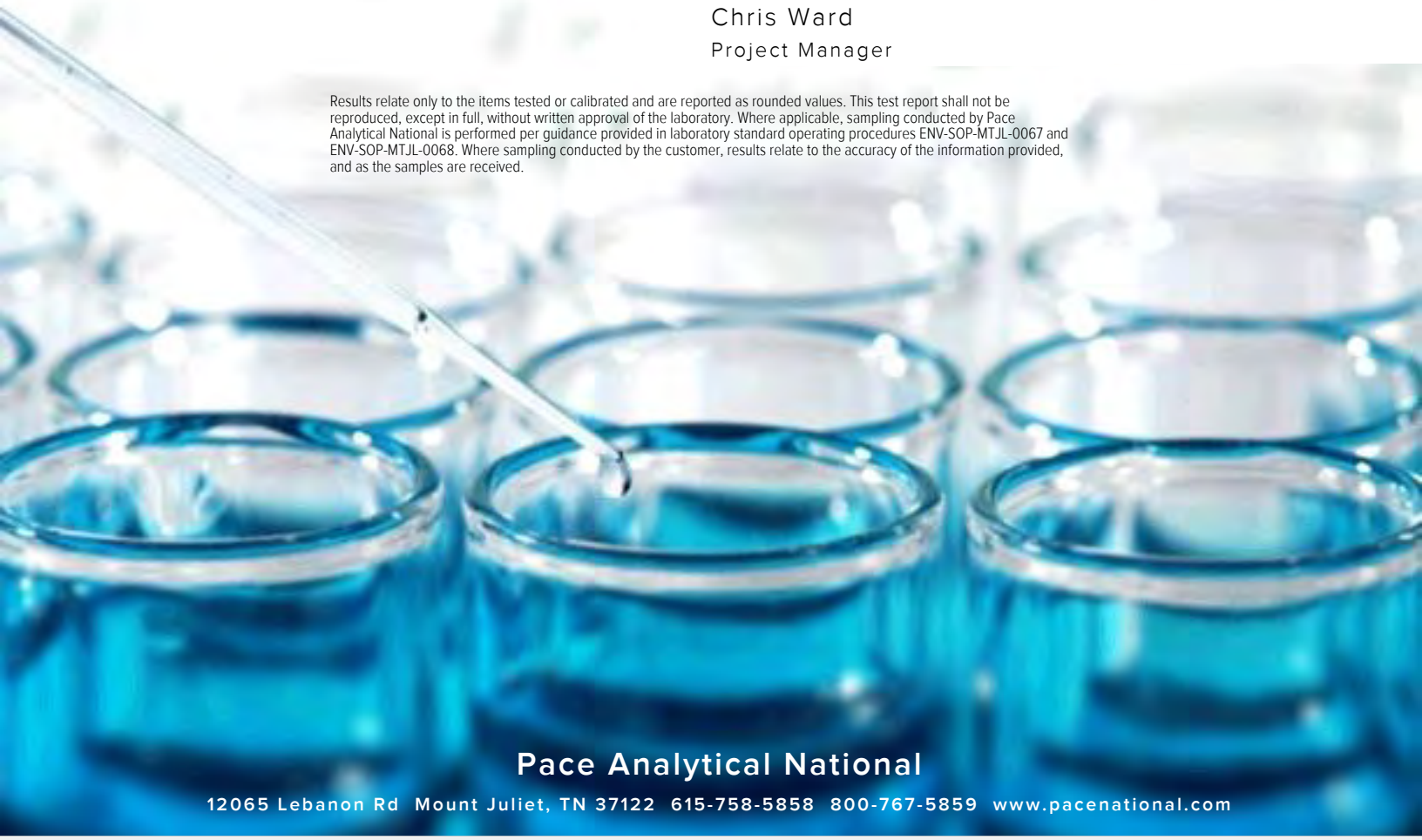
March 24, 2023

Caerus Oil and Gas

Sample Delivery Group:	L1595630
Samples Received:	03/16/2023
Project Number:	
Description:	J14 496 Flowline Release
Site:	J14 496
Report To:	Brett M. , Jake J. , Blair R. 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

20230314_J14-496_BOTTOM@4' L1595630-01 Solid

Collected by: Ahmed Shah | Collected date/time: 03/14/23 09:45 | Received date/time: 03/16/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2025022	1	03/19/23 16:30	03/19/23 16:30	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2025789	1	03/18/23 12:31	03/21/23 05:39	VSS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2025445	1	03/17/23 21:10	03/18/23 09:33	DB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2024847	1	03/17/23 17:00	03/18/23 15:26	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2025019	1	03/17/23 10:54	03/19/23 19:05	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2025439	20	03/17/23 17:01	03/20/23 12:25	SJM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2025439	5	03/17/23 17:01	03/20/23 03:25	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2027553	25	03/17/23 14:08	03/22/23 12:45	NCC	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2025782	80	03/17/23 14:08	03/18/23 18:28	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2027277	5	03/21/23 20:34	03/22/23 11:46	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2026853	1	03/22/23 05:47	03/23/23 04:48	AMG	Mt. Juliet, TN

20230314_J14-496_EWALL@4' L1595630-02 Solid

Collected by: Ahmed Shah | Collected date/time: 03/14/23 10:00 | Received date/time: 03/16/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2025022	1	03/19/23 16:33	03/19/23 16:33	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2025789	1	03/18/23 12:31	03/21/23 05:44	VSS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2025445	1	03/17/23 21:10	03/18/23 09:33	DB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2024847	1	03/17/23 17:00	03/18/23 15:26	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2025019	1	03/17/23 10:54	03/19/23 19:08	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2025439	5	03/17/23 17:01	03/20/23 03:29	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2027553	25	03/17/23 14:08	03/22/23 13:08	NCC	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2026697	1	03/17/23 14:08	03/20/23 23:23	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2027277	1	03/21/23 20:34	03/22/23 10:51	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2027320	1	03/22/23 08:32	03/23/23 05:21	AMG	Mt. Juliet, TN

20230314_J14-496_WWALL@4' L1595630-03 Solid

Collected by: Ahmed Shah | Collected date/time: 03/14/23 10:05 | Received date/time: 03/16/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2025022	1	03/19/23 16:35	03/19/23 16:35	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2025789	1	03/18/23 12:31	03/21/23 05:49	VSS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2025445	1	03/17/23 21:10	03/18/23 09:33	DB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2025290	1	03/22/23 07:00	03/22/23 11:06	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2025019	1	03/17/23 10:54	03/19/23 19:16	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2025439	5	03/17/23 17:01	03/20/23 03:32	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2026123	1	03/17/23 14:08	03/19/23 15:28	NCC	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2025782	1	03/17/23 14:08	03/18/23 12:59	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2027277	1	03/21/23 20:34	03/22/23 10:31	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2027320	1	03/22/23 08:32	03/23/23 05:38	AMG	Mt. Juliet, TN

20230314_J14-496_SWALL@4' L1595630-04 Solid

Collected by: Ahmed Shah | Collected date/time: 03/14/23 10:10 | Received date/time: 03/16/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2025022	1	03/19/23 16:38	03/19/23 16:38	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2025789	1	03/18/23 12:31	03/21/23 06:00	VSS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2025445	1	03/17/23 21:10	03/18/23 09:33	DB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2025290	1	03/22/23 07:00	03/22/23 11:06	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2025019	1	03/17/23 10:54	03/19/23 19:18	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2025439	5	03/17/23 17:01	03/20/23 01:20	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2026123	1	03/17/23 14:08	03/19/23 15:48	NCC	Mt. Juliet, TN

20230314_J14-496_SWALL@4' L1595630-04 Solid

Collected by: Ahmed Shah
Collected date/time: 03/14/23 10:10
Received date/time: 03/16/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2025782	1	03/17/23 14:08	03/18/23 13:18	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2027277	1	03/21/23 20:34	03/22/23 10:44	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2027320	1	03/22/23 08:32	03/23/23 06:30	AMG	Mt. Juliet, TN

20230314_J14-496_NWALL@4' L1595630-05 Solid

Collected by: Ahmed Shah
Collected date/time: 03/14/23 10:15
Received date/time: 03/16/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2025022	1	03/19/23 16:41	03/19/23 16:41	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2025789	1	03/18/23 12:31	03/21/23 06:05	VSS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2025445	1	03/17/23 21:10	03/18/23 09:33	DB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2025290	1	03/22/23 07:00	03/22/23 11:06	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2025019	1	03/17/23 10:54	03/19/23 19:21	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2025439	20	03/17/23 17:01	03/20/23 12:28	SJM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2025439	5	03/17/23 17:01	03/20/23 03:09	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2027553	100	03/17/23 14:08	03/22/23 13:31	NCC	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2025782	80	03/17/23 14:08	03/18/23 19:06	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2027277	25	03/21/23 20:34	03/22/23 11:25	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2027320	1	03/22/23 08:32	03/23/23 06:47	AMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2027320	10	03/22/23 08:32	03/23/23 15:26	AED	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	1.95		1	03/19/2023 16:30	WG2025022

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	03/21/2023 05:39	WG2025789

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.27	T8	1	03/18/2023 09:33	WG2025445

Sample Narrative:

L1595630-01 WG2025445: 8.27 at 20.8C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	205		10.0	1	03/18/2023 15:26	WG2024847

Sample Narrative:

L1595630-01 WG2024847: 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	0.164	J	0.0167	0.200	1	03/19/2023 19:05	WG2025019

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.01		0.100	1.00	5	03/20/2023 03:25	WG2025439
Barium	2330		0.608	10.0	20	03/20/2023 12:25	WG2025439
Cadmium	0.174	J	0.0855	1.00	5	03/20/2023 03:25	WG2025439
Copper	15.3		0.132	5.00	5	03/20/2023 03:25	WG2025439
Lead	10.2		0.0990	2.00	5	03/20/2023 03:25	WG2025439
Nickel	6.59		0.197	2.50	5	03/20/2023 03:25	WG2025439
Selenium	0.331	J	0.180	2.50	5	03/20/2023 03:25	WG2025439
Silver	U		0.0865	0.500	5	03/20/2023 03:25	WG2025439
Zinc	47.2		0.740	25.0	5	03/20/2023 03:25	WG2025439

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	34.0		0.543	2.50	25	03/22/2023 12:45	WG2027553
(S) a,a,a-Trifluorotoluene(FID)	*97.1*			*77.0-120*		*03/22/2023 12:45*	WG2027553

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.0374	0.0800	80	03/18/2023 18:28	WG2025782
Toluene	U		0.104	0.400	80	03/18/2023 18:28	WG2025782
Ethylbenzene	U		0.0590	0.200	80	03/18/2023 18:28	WG2025782
Xylenes, Total	U		0.0704	0.520	80	03/18/2023 18:28	WG2025782
1,2,4-Trimethylbenzene	0.454		0.126	0.400	80	03/18/2023 18:28	WG2025782
1,3,5-Trimethylbenzene	0.502		0.160	0.400	80	03/18/2023 18:28	WG2025782
(S) Toluene-d8	*99.3*			*75.0-131*		*03/18/2023 18:28*	WG2025782
(S) 4-Bromofluorobenzene	*93.1*			*67.0-138*		*03/18/2023 18:28*	WG2025782
(S) 1,2-Dichloroethane-d4	*104*			*70.0-130*		*03/18/2023 18:28*	WG2025782

Sample Narrative:

L1595630-01 WG2025782: Non-target compounds too high to run at a lower dilution.

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	242		8.05	20.0	5	03/22/2023 11:46	WG2027277
C28-C36 Motor Oil Range	199		1.37	20.0	5	03/22/2023 11:46	WG2027277
(S) o-Terphenyl	*44.3*			*18.0-148*		*03/22/2023 11:46*	WG2027277

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	0.00527	J	0.00209	0.00600	1	03/23/2023 04:48	WG2026853
Anthracene	U		0.00230	0.00600	1	03/23/2023 04:48	WG2026853
Benzo(a)anthracene	U		0.00173	0.00600	1	03/23/2023 04:48	WG2026853
Benzo(b)fluoranthene	U		0.00153	0.00600	1	03/23/2023 04:48	WG2026853
Benzo(k)fluoranthene	U		0.00215	0.00600	1	03/23/2023 04:48	WG2026853
Benzo(a)pyrene	U		0.00179	0.00600	1	03/23/2023 04:48	WG2026853
Chrysene	U		0.00232	0.00600	1	03/23/2023 04:48	WG2026853
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	03/23/2023 04:48	WG2026853
Fluoranthene	U		0.00227	0.00600	1	03/23/2023 04:48	WG2026853
Fluorene	0.0103		0.00205	0.00600	1	03/23/2023 04:48	WG2026853
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	03/23/2023 04:48	WG2026853
1-Methylnaphthalene	0.284		0.00449	0.0200	1	03/23/2023 04:48	WG2026853
2-Methylnaphthalene	0.935		0.00427	0.0200	1	03/23/2023 04:48	WG2026853
Naphthalene	0.345		0.00408	0.0200	1	03/23/2023 04:48	WG2026853
Pyrene	0.00240	J	0.00200	0.00600	1	03/23/2023 04:48	WG2026853
(S) p-Terphenyl-d14	*91.3*			*23.0-120*		*03/23/2023 04:48*	WG2026853
(S) Nitrobenzene-d5	*331*	J1		*14.0-149*		*03/23/2023 04:48*	WG2026853
(S) 2-Fluorobiphenyl	*87.3*			*34.0-125*		*03/23/2023 04:48*	WG2026853

Sample Narrative:

L1595630-01 WG2026853: Surrogate failure due to matrix interference

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	SAR				
Sodium Adsorption Ratio	1.00		1	03/19/2023 16:33	WG2025022

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	03/21/2023 05:44	WG2025789

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.66	T8	1	03/18/2023 09:33	WG2025445

Sample Narrative:

L1595630-02 WG2025445: 8.66 at 20.4C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	112		10.0	1	03/18/2023 15:26	WG2024847

Sample Narrative:

L1595630-02 WG2024847: 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	0.0959	J	0.0167	0.200	1	03/19/2023 19:08	WG2025019

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.15		0.100	1.00	5	03/20/2023 03:29	WG2025439
Barium	571		0.152	2.50	5	03/20/2023 03:29	WG2025439
Cadmium	0.304	J	0.0855	1.00	5	03/20/2023 03:29	WG2025439
Copper	12.9		0.132	5.00	5	03/20/2023 03:29	WG2025439
Lead	7.56		0.0990	2.00	5	03/20/2023 03:29	WG2025439
Nickel	8.61		0.197	2.50	5	03/20/2023 03:29	WG2025439
Selenium	0.391	J	0.180	2.50	5	03/20/2023 03:29	WG2025439
Silver	U		0.0865	0.500	5	03/20/2023 03:29	WG2025439
Zinc	31.1		0.740	25.0	5	03/20/2023 03:29	WG2025439

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	28.3		0.543	2.50	25	03/22/2023 13:08	WG2027553
(S) a,a,a-Trifluorotoluene(FID)	*97.4*			*77.0-120*		*03/22/2023 13:08*	WG2027553

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.365		0.000467	0.00100	1	03/20/2023 23:23	WG2026697
Toluene	2.08		0.00130	0.00500	1	03/20/2023 23:23	WG2026697
Ethylbenzene	0.197		0.000737	0.00250	1	03/20/2023 23:23	WG2026697
Xylenes, Total	3.80		0.000880	0.00650	1	03/20/2023 23:23	WG2026697
1,2,4-Trimethylbenzene	1.47		0.00158	0.00500	1	03/20/2023 23:23	WG2026697
1,3,5-Trimethylbenzene	1.37		0.00200	0.00500	1	03/20/2023 23:23	WG2026697
(S) Toluene-d8	*99.7*			*75.0-131*		*03/20/2023 23:23*	WG2026697
(S) 4-Bromofluorobenzene	*97.4*			*67.0-138*		*03/20/2023 23:23*	WG2026697
(S) 1,2-Dichloroethane-d4	*94.8*			*70.0-130*		*03/20/2023 23:23*	WG2026697

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	71.3		1.61	4.00	1	03/22/2023 10:51	WG2027277
C28-C36 Motor Oil Range	76.2		0.274	4.00	1	03/22/2023 10:51	WG2027277
(S) o-Terphenyl	*50.9*			*18.0-148*		*03/22/2023 10:51*	WG2027277

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	03/23/2023 05:21	WG2027320
Anthracene	U		0.00230	0.00600	1	03/23/2023 05:21	WG2027320
Benzo(a)anthracene	U		0.00173	0.00600	1	03/23/2023 05:21	WG2027320
Benzo(b)fluoranthene	U		0.00153	0.00600	1	03/23/2023 05:21	WG2027320
Benzo(k)fluoranthene	U		0.00215	0.00600	1	03/23/2023 05:21	WG2027320
Benzo(a)pyrene	U		0.00179	0.00600	1	03/23/2023 05:21	WG2027320
Chrysene	U		0.00232	0.00600	1	03/23/2023 05:21	WG2027320
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	03/23/2023 05:21	WG2027320
Fluoranthene	U		0.00227	0.00600	1	03/23/2023 05:21	WG2027320
Fluorene	U		0.00205	0.00600	1	03/23/2023 05:21	WG2027320
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	03/23/2023 05:21	WG2027320
1-Methylnaphthalene	0.0846		0.00449	0.0200	1	03/23/2023 05:21	WG2027320
2-Methylnaphthalene	0.368		0.00427	0.0200	1	03/23/2023 05:21	WG2027320
Naphthalene	0.589		0.00408	0.0200	1	03/23/2023 05:21	WG2027320
Pyrene	U	J4	0.00200	0.00600	1	03/23/2023 05:21	WG2027320
(S) p-Terphenyl-d14	*135*	J1		*23.0-120*		*03/23/2023 05:21*	WG2027320
(S) Nitrobenzene-d5	*133*			*14.0-149*		*03/23/2023 05:21*	WG2027320
(S) 2-Fluorobiphenyl	*108*			*34.0-125*		*03/23/2023 05:21*	WG2027320

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	SAR				
Sodium Adsorption Ratio	4.51		1	03/19/2023 16:35	WG2025022

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	03/21/2023 05:49	WG2025789

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.60	T8	1	03/18/2023 09:33	WG2025445

Sample Narrative:

L1595630-03 WG2025445: 8.6 at 20.2C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	301		10.0	1	03/22/2023 11:06	WG2025290

Sample Narrative:

L1595630-03 WG2025290: 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	0.320		0.0167	0.200	1	03/19/2023 19:16	WG2025019

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.91		0.100	1.00	5	03/20/2023 03:32	WG2025439
Barium	603		0.152	2.50	5	03/20/2023 03:32	WG2025439
Cadmium	0.138	J	0.0855	1.00	5	03/20/2023 03:32	WG2025439
Copper	9.40		0.132	5.00	5	03/20/2023 03:32	WG2025439
Lead	8.06		0.0990	2.00	5	03/20/2023 03:32	WG2025439
Nickel	15.4		0.197	2.50	5	03/20/2023 03:32	WG2025439
Selenium	0.310	J	0.180	2.50	5	03/20/2023 03:32	WG2025439
Silver	U		0.0865	0.500	5	03/20/2023 03:32	WG2025439
Zinc	37.6		0.740	25.0	5	03/20/2023 03:32	WG2025439

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.832		0.0217	0.100	1	03/19/2023 15:28	WG2026123
(S) a,a,a-Trifluorotoluene(FID)	*95.1*			*77.0-120*		*03/19/2023 15:28*	WG2026123

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	03/18/2023 12:59	WG2025782
Toluene	0.00288	J	0.00130	0.00500	1	03/18/2023 12:59	WG2025782
Ethylbenzene	0.00247	J	0.000737	0.00250	1	03/18/2023 12:59	WG2025782
Xylenes, Total	0.0230		0.000880	0.00650	1	03/18/2023 12:59	WG2025782
1,2,4-Trimethylbenzene	0.0180		0.00158	0.00500	1	03/18/2023 12:59	WG2025782
1,3,5-Trimethylbenzene	0.0136		0.00200	0.00500	1	03/18/2023 12:59	WG2025782
(S) Toluene-d8	*99.0*			*75.0-131*		*03/18/2023 12:59*	WG2025782
(S) 4-Bromofluorobenzene	*88.7*			*67.0-138*		*03/18/2023 12:59*	WG2025782
(S) 1,2-Dichloroethane-d4	*94.8*			*70.0-130*		*03/18/2023 12:59*	WG2025782

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	8.87		1.61	4.00	1	03/22/2023 10:31	WG2027277
C28-C36 Motor Oil Range	16.1		0.274	4.00	1	03/22/2023 10:31	WG2027277
(S) o-Terphenyl	*48.6*			*18.0-148*		*03/22/2023 10:31*	WG2027277

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	03/23/2023 05:38	WG2027320
Anthracene	U		0.00230	0.00600	1	03/23/2023 05:38	WG2027320
Benzo(a)anthracene	U		0.00173	0.00600	1	03/23/2023 05:38	WG2027320
Benzo(b)fluoranthene	U		0.00153	0.00600	1	03/23/2023 05:38	WG2027320
Benzo(k)fluoranthene	U		0.00215	0.00600	1	03/23/2023 05:38	WG2027320
Benzo(a)pyrene	U		0.00179	0.00600	1	03/23/2023 05:38	WG2027320
Chrysene	U		0.00232	0.00600	1	03/23/2023 05:38	WG2027320
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	03/23/2023 05:38	WG2027320
Fluoranthene	U		0.00227	0.00600	1	03/23/2023 05:38	WG2027320
Fluorene	U		0.00205	0.00600	1	03/23/2023 05:38	WG2027320
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	03/23/2023 05:38	WG2027320
1-Methylnaphthalene	0.00743	J	0.00449	0.0200	1	03/23/2023 05:38	WG2027320
2-Methylnaphthalene	0.0169	J	0.00427	0.0200	1	03/23/2023 05:38	WG2027320
Naphthalene	0.00840	J	0.00408	0.0200	1	03/23/2023 05:38	WG2027320
Pyrene	U	J4	0.00200	0.00600	1	03/23/2023 05:38	WG2027320
(S) p-Terphenyl-d14	*102*			*23.0-120*		*03/23/2023 05:38*	WG2027320
(S) Nitrobenzene-d5	*87.8*			*14.0-149*		*03/23/2023 05:38*	WG2027320
(S) 2-Fluorobiphenyl	*91.0*			*34.0-125*		*03/23/2023 05:38*	WG2027320

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	SAR				
Sodium Adsorption Ratio	6.77		1	03/19/2023 16:38	WG2025022

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.401	J	0.255	1.00	1	03/21/2023 06:00	WG2025789

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.81	T8	1	03/18/2023 09:33	WG2025445

Sample Narrative:

L1595630-04 WG2025445: 8.81 at 20.2C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	379		10.0	1	03/22/2023 11:06	WG2025290

Sample Narrative:

L1595630-04 WG2025290: 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	0.0877	J	0.0167	0.200	1	03/19/2023 19:18	WG2025019

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.71		0.100	1.00	5	03/20/2023 01:20	WG2025439
Barium	423		0.152	2.50	5	03/20/2023 01:20	WG2025439
Cadmium	0.337	J	0.0855	1.00	5	03/20/2023 01:20	WG2025439
Copper	10.7		0.132	5.00	5	03/20/2023 01:20	WG2025439
Lead	9.03		0.0990	2.00	5	03/20/2023 01:20	WG2025439
Nickel	15.2		0.197	2.50	5	03/20/2023 01:20	WG2025439
Selenium	0.433	J	0.180	2.50	5	03/20/2023 01:20	WG2025439
Silver	U		0.0865	0.500	5	03/20/2023 01:20	WG2025439
Zinc	38.4		0.740	25.0	5	03/20/2023 01:20	WG2025439

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0500	J	0.0217	0.100	1	03/19/2023 15:48	WG2026123
(S) a,a,a-Trifluorotoluene(FID)	*95.0*			*77.0-120*		*03/19/2023 15:48*	WG2026123

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	03/18/2023 13:18	WG2025782
Toluene	U		0.00130	0.00500	1	03/18/2023 13:18	WG2025782
Ethylbenzene	U		0.000737	0.00250	1	03/18/2023 13:18	WG2025782
Xylenes, Total	U		0.000880	0.00650	1	03/18/2023 13:18	WG2025782
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	03/18/2023 13:18	WG2025782
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	03/18/2023 13:18	WG2025782
(S) Toluene-d8	*95.5*			*75.0-131*		*03/18/2023 13:18*	WG2025782
(S) 4-Bromofluorobenzene	*89.9*			*67.0-138*		*03/18/2023 13:18*	WG2025782
(S) 1,2-Dichloroethane-d4	*94.9*			*70.0-130*		*03/18/2023 13:18*	WG2025782

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	8.23		1.61	4.00	1	03/22/2023 10:44	WG2027277
C28-C36 Motor Oil Range	20.2		0.274	4.00	1	03/22/2023 10:44	WG2027277
(S) o-Terphenyl	*48.3*			*18.0-148*		*03/22/2023 10:44*	WG2027277

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	03/23/2023 06:30	WG2027320
Anthracene	U		0.00230	0.00600	1	03/23/2023 06:30	WG2027320
Benzo(a)anthracene	U		0.00173	0.00600	1	03/23/2023 06:30	WG2027320
Benzo(b)fluoranthene	U		0.00153	0.00600	1	03/23/2023 06:30	WG2027320
Benzo(k)fluoranthene	U		0.00215	0.00600	1	03/23/2023 06:30	WG2027320
Benzo(a)pyrene	U		0.00179	0.00600	1	03/23/2023 06:30	WG2027320
Chrysene	U		0.00232	0.00600	1	03/23/2023 06:30	WG2027320
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	03/23/2023 06:30	WG2027320
Fluoranthene	U		0.00227	0.00600	1	03/23/2023 06:30	WG2027320
Fluorene	U		0.00205	0.00600	1	03/23/2023 06:30	WG2027320
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	03/23/2023 06:30	WG2027320
1-Methylnaphthalene	U		0.00449	0.0200	1	03/23/2023 06:30	WG2027320
2-Methylnaphthalene	U		0.00427	0.0200	1	03/23/2023 06:30	WG2027320
Naphthalene	U		0.00408	0.0200	1	03/23/2023 06:30	WG2027320
Pyrene	U	J4	0.00200	0.00600	1	03/23/2023 06:30	WG2027320
(S) p-Terphenyl-d14	*116*			*23.0-120*		*03/23/2023 06:30*	WG2027320
(S) Nitrobenzene-d5	*88.9*			*14.0-149*		*03/23/2023 06:30*	WG2027320
(S) 2-Fluorobiphenyl	*95.1*			*34.0-125*		*03/23/2023 06:30*	WG2027320

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	21.8		1	03/19/2023 16:41	WG2025022

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	03/21/2023 06:05	WG2025789

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.65	T8	1	03/18/2023 09:33	WG2025445

Sample Narrative:

L1595630-05 WG2025445: 8.65 at 20.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	1160		10.0	1	03/22/2023 11:06	WG2025290

Sample Narrative:

L1595630-05 WG2025290: 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	0.308		0.0167	0.200	1	03/19/2023 19:21	WG2025019

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.25		0.100	1.00	5	03/20/2023 03:09	WG2025439
Barium	1490		0.608	10.0	20	03/20/2023 12:28	WG2025439
Cadmium	0.242	J	0.0855	1.00	5	03/20/2023 03:09	WG2025439
Copper	8.63		0.132	5.00	5	03/20/2023 03:09	WG2025439
Lead	6.79		0.0990	2.00	5	03/20/2023 03:09	WG2025439
Nickel	14.2		0.197	2.50	5	03/20/2023 03:09	WG2025439
Selenium	0.423	J	0.180	2.50	5	03/20/2023 03:09	WG2025439
Silver	U		0.0865	0.500	5	03/20/2023 03:09	WG2025439
Zinc	39.7		0.740	25.0	5	03/20/2023 03:09	WG2025439

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	201		2.17	10.0	100	03/22/2023 13:31	WG2027553
(S) a,a,a-Trifluorotoluene(FID)	*93.0*			*77.0-120*		*03/22/2023 13:31*	WG2027553

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.0380	J	0.0374	0.0800	80	03/18/2023 19:06	WG2025782
Toluene	1.08		0.104	0.400	80	03/18/2023 19:06	WG2025782
Ethylbenzene	0.396		0.0590	0.200	80	03/18/2023 19:06	WG2025782
Xylenes, Total	5.56		0.0704	0.520	80	03/18/2023 19:06	WG2025782
1,2,4-Trimethylbenzene	4.87		0.126	0.400	80	03/18/2023 19:06	WG2025782
1,3,5-Trimethylbenzene	5.75		0.160	0.400	80	03/18/2023 19:06	WG2025782
(S) Toluene-d8	*90.6*			*75.0-131*		*03/18/2023 19:06*	WG2025782
(S) 4-Bromofluorobenzene	*93.1*			*67.0-138*		*03/18/2023 19:06*	WG2025782
(S) 1,2-Dichloroethane-d4	*102*			*70.0-130*		*03/18/2023 19:06*	WG2025782

Sample Narrative:

L1595630-05 WG2025782: Non-target compounds too high to run at a lower dilution.

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	3910		40.3	100	25	03/22/2023 11:25	WG2027277
C28-C36 Motor Oil Range	169		6.85	100	25	03/22/2023 11:25	WG2027277
(S) o-Terphenyl	*0.000*	J7		*18.0-148*		*03/22/2023 11:25*	WG2027277

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.0209	0.0600	10	03/23/2023 15:26	WG2027320
Anthracene	U		0.00230	0.00600	1	03/23/2023 06:47	WG2027320
Benzo(a)anthracene	U		0.00173	0.00600	1	03/23/2023 06:47	WG2027320
Benzo(b)fluoranthene	0.00261	J	0.00153	0.00600	1	03/23/2023 06:47	WG2027320
Benzo(k)fluoranthene	U		0.00215	0.00600	1	03/23/2023 06:47	WG2027320
Benzo(a)pyrene	U		0.00179	0.00600	1	03/23/2023 06:47	WG2027320
Chrysene	0.00769		0.00232	0.00600	1	03/23/2023 06:47	WG2027320
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	03/23/2023 06:47	WG2027320
Fluoranthene	0.0230		0.00227	0.00600	1	03/23/2023 06:47	WG2027320
Fluorene	1.01		0.0205	0.0600	10	03/23/2023 15:26	WG2027320
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	03/23/2023 06:47	WG2027320
1-Methylnaphthalene	2.28		0.00449	0.0200	1	03/23/2023 06:47	WG2027320
2-Methylnaphthalene	9.54		0.0427	0.200	10	03/23/2023 15:26	WG2027320
Naphthalene	1.75		0.00408	0.0200	1	03/23/2023 06:47	WG2027320
Pyrene	0.0157	J4	0.00200	0.00600	1	03/23/2023 06:47	WG2027320
(S) p-Terphenyl-d14	*116*			*23.0-120*		*03/23/2023 06:47*	WG2027320
(S) p-Terphenyl-d14	*106*			*23.0-120*		*03/23/2023 15:26*	WG2027320
(S) Nitrobenzene-d5	*1020*	J1		*14.0-149*		*03/23/2023 06:47*	WG2027320
(S) Nitrobenzene-d5	*1410*	J1		*14.0-149*		*03/23/2023 15:26*	WG2027320
(S) 2-Fluorobiphenyl	*40.8*			*34.0-125*		*03/23/2023 06:47*	WG2027320
(S) 2-Fluorobiphenyl	*130*	J1		*34.0-125*		*03/23/2023 15:26*	WG2027320

Sample Narrative:

L1595630-05 WG2027320: Surrogate failure due to matrix interference

Method Blank (MB)

(MB) R3903307-1 03/21/23 03:27

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

L1591732-33 Original Sample (OS) • Duplicate (DUP)

(OS) L1591732-33 03/21/23 04:05 • (DUP) R3903307-3 03/21/23 04:11

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

L1595630-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1595630-03 03/21/23 05:49 • (DUP) R3903307-8 03/21/23 05:55

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) R3903307-2 03/21/23 03:34

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	10.0	10.1	101	80.0-120	

L1591732-42 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1591732-42 03/21/23 04:42 • (MS) R3903307-4 03/21/23 04:47 • (MSD) R3903307-5 03/21/23 04:52

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	20.0	U	19.2	20.0	95.9	99.8	1	75.0-125			3.95	20

L1591732-42 Original Sample (OS) • Matrix Spike (MS)

(OS) L1591732-42 03/21/23 04:42 • (MS) R3903307-6 03/21/23 04:57

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	643	U	703	109	50	75.0-125	

L1595630-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1595630-05 03/18/23 09:33 • (DUP) R3902535-2 03/18/23 09:33

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	pH	su		%		%
pH	8.65	8.70	1	0.576		1

Sample Narrative:

OS: 8.65 at 20.6C

DUP: 8.7 at 20.5C

L1595676-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1595676-01 03/18/23 09:33 • (DUP) R3902535-3 03/18/23 09:33

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.69	8.74	1	0.574		1

Sample Narrative:

OS: 8.69 at 20.5C

DUP: 8.74 at 20.6C

Laboratory Control Sample (LCS)

(LCS) R3902535-1 03/18/23 09:33

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 20.6C

Method Blank (MB)

(MB) R3902594-1 03/18/23 15:26

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

L1591722-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1591722-03 03/18/23 15:26 • (DUP) R3902594-3 03/18/23 15:26

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	2540	2560	1	0.549		20

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

L1591728-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1591728-04 03/18/23 15:26 • (DUP) R3902594-4 03/18/23 15:26

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	1250	1400	1	11.3		20

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

Laboratory Control Sample (LCS)

(LCS) R3902594-2 03/18/23 15:26

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	1120	1060	94.7	85.0-115	

Sample Narrative:
LCS: at 25C

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

Method Blank (MB)

(MB) R3903943-1 03/22/23 11:06

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

L1595631-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1595631-01 03/22/23 11:06 • (DUP) R3903943-3 03/22/23 11:06

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	515	521	1	1.16		20

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

L1596104-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1596104-02 03/22/23 11:06 • (DUP) R3903943-4 03/22/23 11:06

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	706	717	1	1.55		20

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

Laboratory Control Sample (LCS)

(LCS) R3903943-2 03/22/23 11:06

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	1120	1100	98.3	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3902781-1 03/19/23 18:44

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) R3902781-2 03/19/23 18:46 • (LCSD) R3902781-3 03/19/23 18:49

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	1.14	1.17	114	117	80.0-120			2.68	20

Method Blank (MB)

(MB) R3902853-1 03/20/23 03:02

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

Laboratory Control Sample (LCS)

(LCS) R3902853-2 03/20/23 03:06

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	104	104	80.0-120	
Barium	100	105	105	80.0-120	
Cadmium	100	108	108	80.0-120	
Copper	100	101	101	80.0-120	
Lead	100	105	105	80.0-120	
Nickel	100	105	105	80.0-120	
Selenium	100	116	116	80.0-120	
Silver	20.0	22.2	111	80.0-120	
Zinc	100	103	103	80.0-120	

L1595630-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1595630-05 03/20/23 03:09 • (MS) R3902853-5 03/20/23 03:19 • (MSD) R3902853-6 03/20/23 03:22

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	3.25	93.1	90.9	89.9	87.7	5	75.0-125			2.36	20
Barium	100	1520	1670	1880	149	362	5	75.0-125	E V	E V	12.0	20
Cadmium	100	0.242	94.4	93.4	94.2	93.1	5	75.0-125			1.11	20
Copper	100	8.63	100	95.9	91.4	87.2	5	75.0-125			4.25	20
Lead	100	6.79	97.0	96.1	90.2	89.3	5	75.0-125			0.915	20
Nickel	100	14.2	94.3	94.7	80.1	80.4	5	75.0-125			0.378	20
Selenium	100	0.423	100	100	99.6	100	5	75.0-125			0.444	20
Silver	20.0	U	18.9	19.0	94.6	94.8	5	75.0-125			0.235	20
Zinc	100	39.7	117	119	77.2	79.4	5	75.0-125			1.89	20

Method Blank (MB)

(MB) R3902810-2 03/19/23 14:58

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*98.9*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3902810-1 03/19/23 13:34

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.75	105	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*108*	*77.0-120*	

Method Blank (MB)

(MB) R3904304-2 03/22/23 11:46

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.953	J	0.543	2.50
(S) a,a,a-Trifluorotoluene(FID)	*99.6*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3904304-1 03/22/23 09:50

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	6.50	118	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*119*	*77.0-120*	

Method Blank (MB)

(MB) R3903129-2 03/18/23 12:12

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	*97.2*			*75.0-131*
(S) 4-Bromofluorobenzene	*89.6*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*95.8*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3903129-1 03/18/23 10:55

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.118	94.4	70.0-123	
Toluene	0.125	0.114	91.2	75.0-121	
Ethylbenzene	0.125	0.109	87.2	74.0-126	
Xylenes, Total	0.375	0.337	89.9	72.0-127	
1,2,4-Trimethylbenzene	0.125	0.114	91.2	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.107	85.6	73.0-127	
(S) Toluene-d8			*92.4*	*75.0-131*	
(S) 4-Bromofluorobenzene			*93.6*	*67.0-138*	
(S) 1,2-Dichloroethane-d4			*97.8*	*70.0-130*	

Method Blank (MB)

(MB) R3903302-2 03/20/23 21:15

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	0.000975	J	0.000737	0.00250
Xylenes, Total	0.00268	J	0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	*103*			*75.0-131*
(S) 4-Bromofluorobenzene	*85.4*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*95.6*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3903302-1 03/20/23 19:28

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.137	110	70.0-123	
Toluene	0.125	0.123	98.4	75.0-121	
Ethylbenzene	0.125	0.112	89.6	74.0-126	
Xylenes, Total	0.375	0.351	93.6	72.0-127	
1,2,4-Trimethylbenzene	0.125	0.135	108	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.140	112	73.0-127	
(S) Toluene-d8			*94.3*	*75.0-131*	
(S) 4-Bromofluorobenzene			*87.8*	*67.0-138*	
(S) 1,2-Dichloroethane-d4			*107*	*70.0-130*	

Method Blank (MB)

(MB) R3904086-1 03/22/23 08:15

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	0.282	J	0.274	4.00
(S) o-Terphenyl	*67.3*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3904086-2 03/22/23 08:27

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	34.8	69.6	50.0-150	
(S) o-Terphenyl			*77.5*	*18.0-148*	

L1595353-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1595353-01 03/22/23 11:11 • (MS) R3904090-1 03/22/23 13:58 • (MSD) R3904090-2 03/22/23 14:10

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	50.0	22.0	46.7	49.9	49.4	55.8	10	50.0-150	J6		6.63	20
(S) o-Terphenyl					*91.0*	*93.2*		*18.0-148*				

Sample Narrative:

OS: Dilution due to matrix impact during extract concentration procedure

Method Blank (MB)

(MB) R3904489-2 03/23/23 00:33

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	*101*			*23.0-120*
(S) Nitrobenzene-d5	*114*			*14.0-149*
(S) 2-Fluorobiphenyl	*100*			*34.0-125*

Laboratory Control Sample (LCS)

(LCS) R3904489-1 03/23/23 00:14

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0760	95.0	50.0-120	
Anthracene	0.0800	0.0779	97.4	50.0-126	
Benzo(a)anthracene	0.0800	0.0845	106	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0717	89.6	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0684	85.5	49.0-125	
Benzo(a)pyrene	0.0800	0.0741	92.6	42.0-120	
Chrysene	0.0800	0.0764	95.5	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0766	95.8	47.0-125	
Fluoranthene	0.0800	0.0782	97.8	49.0-129	
Fluorene	0.0800	0.0790	98.8	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0863	108	46.0-125	
1-Methylnaphthalene	0.0800	0.0792	99.0	51.0-121	
2-Methylnaphthalene	0.0800	0.0815	102	50.0-120	
Naphthalene	0.0800	0.0765	95.6	50.0-120	
Pyrene	0.0800	0.0713	89.1	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R3904489-1 03/23/23 00:14

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
(S) p-Terphenyl-d14			*113*	*23.0-120*	
(S) Nitrobenzene-d5			*128*	*14.0-149*	
(S) 2-Fluorobiphenyl			*110*	*34.0-125*	

L1595582-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1595582-01 03/23/23 05:27 • (MS) R3904489-3 03/23/23 05:47 • (MSD) R3904489-4 03/23/23 06:07

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.0788	U	0.0667	0.0644	84.6	81.3	1	14.0-127			3.51	27
Anthracene	0.0788	U	0.0703	0.0663	89.2	83.7	1	10.0-145			5.86	30
Benzo(a)anthracene	0.0788	U	0.0719	0.0692	91.2	87.4	1	10.0-139			3.83	30
Benzo(b)fluoranthene	0.0788	U	0.0617	0.0586	78.3	74.0	1	10.0-140			5.15	36
Benzo(k)fluoranthene	0.0788	U	0.0588	0.0585	74.6	73.9	1	10.0-137			0.512	31
Benzo(a)pyrene	0.0788	U	0.0701	0.0678	89.0	85.6	1	10.0-141			3.34	31
Chrysene	0.0788	U	0.0667	0.0652	84.6	82.3	1	10.0-145			2.27	30
Dibenz(a,h)anthracene	0.0788	U	0.0624	0.0622	79.2	78.5	1	10.0-132			0.321	31
Fluoranthene	0.0788	U	0.0700	0.0668	88.8	84.3	1	10.0-153			4.68	33
Fluorene	0.0788	U	0.0690	0.0664	87.6	83.8	1	11.0-130			3.84	29
Indeno(1,2,3-cd)pyrene	0.0788	U	0.0699	0.0696	88.7	87.9	1	10.0-137			0.430	32
1-Methylnaphthalene	0.0788	U	0.0695	0.0662	88.0	83.4	1	10.0-142			4.86	28
2-Methylnaphthalene	0.0788	U	0.0726	0.0678	92.1	85.6	1	10.0-137			6.84	28
Naphthalene	0.0788	U	0.0679	0.0644	86.2	81.3	1	10.0-135			5.29	27
Pyrene	0.0788	U	0.0621	0.0611	78.8	77.1	1	10.0-148			1.62	35
(S) p-Terphenyl-d14					*91.0*	*96.6*		*23.0-120*				
(S) Nitrobenzene-d5					*110*	*114*		*14.0-149*				
(S) 2-Fluorobiphenyl					*97.0*	*96.1*		*34.0-125*				

Method Blank (MB)

(MB) R3904496-2 03/22/23 23:18

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	*127*	J1		*23.0-120*
(S) Nitrobenzene-d5	*106*			*14.0-149*
(S) 2-Fluorobiphenyl	*107*			*34.0-125*

Laboratory Control Sample (LCS)

(LCS) R3904496-1 03/22/23 23:01

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0858	107	50.0-120	
Anthracene	0.0800	0.0778	97.3	50.0-126	
Benzo(a)anthracene	0.0800	0.0810	101	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0902	113	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0915	114	49.0-125	
Benzo(a)pyrene	0.0800	0.0842	105	42.0-120	
Chrysene	0.0800	0.0880	110	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0808	101	47.0-125	
Fluoranthene	0.0800	0.0865	108	49.0-129	
Fluorene	0.0800	0.0864	108	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0865	108	46.0-125	
1-Methylnaphthalene	0.0800	0.0903	113	51.0-121	
2-Methylnaphthalene	0.0800	0.0891	111	50.0-120	
Naphthalene	0.0800	0.0858	107	50.0-120	
Pyrene	0.0800	0.110	138	43.0-123	J4

Laboratory Control Sample (LCS)

(LCS) R3904496-1 03/22/23 23:01

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
(S) p-Terphenyl-d14			*175*	*23.0-120*	J1
(S) Nitrobenzene-d5			*114*	*14.0-149*	
(S) 2-Fluorobiphenyl			*110*	*34.0-125*	

L1595630-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1595630-03 03/23/23 05:38 • (MS) R3904496-3 03/23/23 05:56 • (MSD) R3904496-4 03/23/23 06:13

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.0800	U	0.0581	0.0640	72.6	80.4	1	14.0-127			9.66	27
Anthracene	0.0800	U	0.0537	0.0577	67.1	72.5	1	10.0-145			7.18	30
Benzo(a)anthracene	0.0800	U	0.0566	0.0606	70.8	76.1	1	10.0-139			6.83	30
Benzo(b)fluoranthene	0.0800	U	0.0623	0.0748	77.9	94.0	1	10.0-140			18.2	36
Benzo(k)fluoranthene	0.0800	U	0.0636	0.0731	79.5	91.8	1	10.0-137			13.9	31
Benzo(a)pyrene	0.0800	U	0.0702	0.0726	87.8	91.2	1	10.0-141			3.36	31
Chrysene	0.0800	U	0.0587	0.0664	73.4	83.4	1	10.0-145			12.3	30
Dibenz(a,h)anthracene	0.0800	U	0.0528	0.0701	66.0	88.1	1	10.0-132			28.2	31
Fluoranthene	0.0800	U	0.0607	0.0715	75.9	89.8	1	10.0-153			16.3	33
Fluorene	0.0800	U	0.0600	0.0664	75.0	83.4	1	11.0-130			10.1	29
Indeno(1,2,3-cd)pyrene	0.0800	U	0.0572	0.0676	71.5	84.9	1	10.0-137			16.7	32
1-Methylnaphthalene	0.0800	0.00743	0.0718	0.0757	80.5	85.8	1	10.0-142			5.29	28
2-Methylnaphthalene	0.0800	0.0169	0.0861	0.0828	86.5	82.8	1	10.0-137			3.91	28
Naphthalene	0.0800	0.00840	0.0738	0.0714	81.8	79.1	1	10.0-135			3.31	27
Pyrene	0.0800	U	0.0650	0.0720	81.3	90.5	1	10.0-148			10.2	35
(S) p-Terphenyl-d14					*96.5*	*112*		*23.0-120*				
(S) Nitrobenzene-d5					*88.7*	*105*		*14.0-149*				
(S) 2-Fluorobiphenyl					*83.1*	*95.7*		*34.0-125*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J4	The associated batch QC was outside the established quality control range for accuracy.
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.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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

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

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

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

Pace Analytical

CHAIN-OF-CUSTODY Analytical Request Document

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

ALL BOLD OUTLINED AREAS are for LAB USE ONLY

Company: Caerus Oil and Gas LLC	Billing Information: Info on file
Address: Info on file	
Report To: Jake Janicek, Brett Middleton, Blair Rollins	Email To: info on file
Copy To: Chris McKisson, remediation@confluence-cc.com	Site Collection Info/Address:
Customer Project Name/Number: J14 496 Flowline Release	State: CO / County/City: Rio Blanco / Time Zone Collected: [ ]PT [X]MT [ ]CT [ ]ET

Container Preservative Type **

Lab Project Manager:

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

Phone: Email:	Site/Facility ID #: J14 496	Compliance Monitoring? [ ] Yes [X] No
Collected By (print): Ahmed Shah	Purchase Order # : Quote #:	DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: Standard Turnaround	Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: (Expedite Charges Apply) [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day	Field Filtered (if applicable): [ ] Yes [ ] No Analysis: _____

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

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Container Type: Plastic (P) or Glass (G)	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)	Lab Sample # / Comments:
20230314_J14-496_BOTTOM@4'	SL	G	3/14/2023	0945				3	G	X	X	X	X	X	X	L1595630-01
20230314_J14-496_EWALL@4'	SL	G	3/14/2023	1000				3	G	X	X	X	X	X	X	-02
20230314_J14-496_WWALL@4'	SL	G	3/14/2023	1005				3	G	X	X	X	X	X	X	-03
20230314_J14-496_SWALL@4'	SL	G	3/14/2023	1010				3	G	X	X	X	X	X	X	-04
20230314_J14-496_NWALL@4'	SL	G	3/14/2023	1015				3	G	X	X	X	X	X	X	-05

Lab Profile/Line:

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

LAB USE ONLY:

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

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

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

Lab Tracking #: 6126 6537 4552

Samples received via: FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: 1.6 NSA6
Cooler 1 Temp Upon Receipt: ___oC
Cooler 1 Therm Corr. Factor: ___oC
Cooler 1 Corrected Temp: ___oC
Comments:

Relinquished by/Company: (Signature)	Date/Time: 3/15/23 1246	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time: 3/15/23 1400	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time: 3-16-23 845

E197

Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y (N) NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: ____ of: ____

ANALYTICAL REPORT

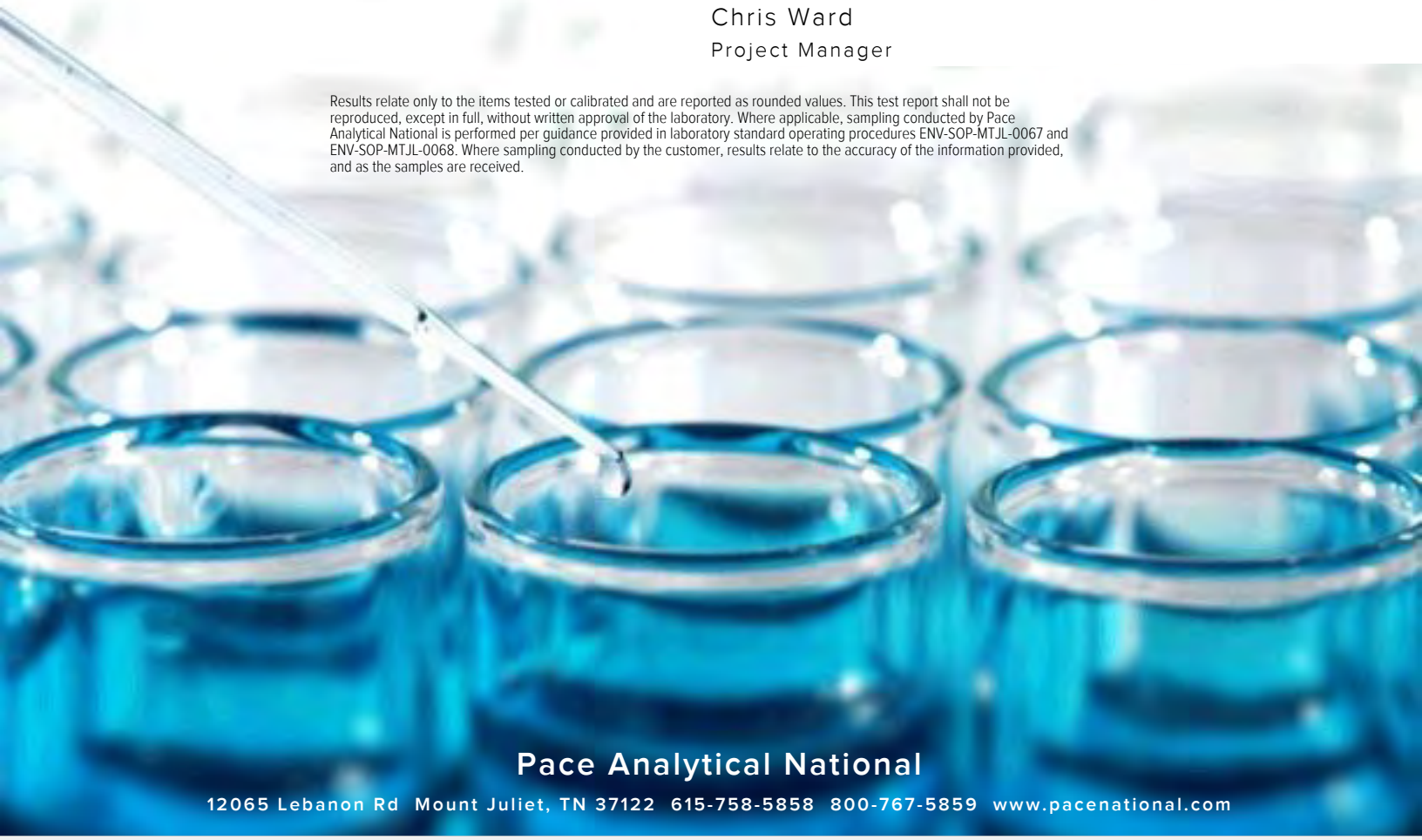
March 23, 2023

Caerus Oil and Gas

Sample Delivery Group:	L1595631
Samples Received:	03/16/2023
Project Number:	
Description:	J14 496 Flowline Release
Site:	J14 496
Report To:	Brett M. , Jake J. , Blair R. 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

20230314-J14-496-STOCK_COMP L1595631-01 Solid

Collected by: Ahmed Shah
Collected date/time: 03/14/23 10:45
Received date/time: 03/16/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2025022	1	03/19/23 16:49	03/19/23 16:49	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2025789	1	03/18/23 12:31	03/21/23 06:10	VSS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2025445	1	03/17/23 21:10	03/18/23 09:33	DB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2025290	1	03/22/23 07:00	03/22/23 11:06	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2025019	1	03/17/23 10:54	03/19/23 19:24	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2025439	20	03/17/23 17:01	03/20/23 12:32	SJM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2025439	5	03/17/23 17:01	03/20/23 01:24	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2026123	1	03/17/23 14:08	03/19/23 16:09	NCC	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2025782	1	03/17/23 14:08	03/18/23 13:37	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2027277	1	03/21/23 20:34	03/22/23 10:44	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2027320	1	03/22/23 08:32	03/23/23 07:05	AMG	Mt. Juliet, TN

CASE NARRATIVE

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

Chris Ward
Project Manager

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	3.14		1	03/19/2023 16:49	WG2025022

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	03/21/2023 06:10	WG2025789

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.44	T8	1	03/18/2023 09:33	WG2025445

Sample Narrative:

L1595631-01 WG2025445: 8.44 at 20.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	515		10.0	1	03/22/2023 11:06	WG2025290

Sample Narrative:

L1595631-01 WG2025290: 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	0.210		0.0167	0.200	1	03/19/2023 19:24	WG2025019

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.80		0.100	1.00	5	03/20/2023 01:24	WG2025439
Barium	2010		0.608	10.0	20	03/20/2023 12:32	WG2025439
Cadmium	0.299	J	0.0855	1.00	5	03/20/2023 01:24	WG2025439
Copper	12.1		0.132	5.00	5	03/20/2023 01:24	WG2025439
Lead	9.56		0.0990	2.00	5	03/20/2023 01:24	WG2025439
Nickel	15.7		0.197	2.50	5	03/20/2023 01:24	WG2025439
Selenium	0.321	J	0.180	2.50	5	03/20/2023 01:24	WG2025439
Silver	U		0.0865	0.500	5	03/20/2023 01:24	WG2025439
Zinc	41.0		0.740	25.0	5	03/20/2023 01:24	WG2025439

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.297		0.0217	0.100	1	03/19/2023 16:09	WG2026123
(S) a,a,a-Trifluorotoluene(FID)	*94.5*			*77.0-120*		*03/19/2023 16:09*	WG2026123

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	03/18/2023 13:37	WG2025782
Toluene	U		0.00130	0.00500	1	03/18/2023 13:37	WG2025782
Ethylbenzene	U		0.000737	0.00250	1	03/18/2023 13:37	WG2025782
Xylenes, Total	U		0.000880	0.00650	1	03/18/2023 13:37	WG2025782
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	03/18/2023 13:37	WG2025782
1,3,5-Trimethylbenzene	0.00580		0.00200	0.00500	1	03/18/2023 13:37	WG2025782
(S) Toluene-d8	*98.9*			*75.0-131*		*03/18/2023 13:37*	WG2025782
(S) 4-Bromofluorobenzene	*90.4*			*67.0-138*		*03/18/2023 13:37*	WG2025782
(S) 1,2-Dichloroethane-d4	*96.5*			*70.0-130*		*03/18/2023 13:37*	WG2025782

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	34.1		1.61	4.00	1	03/22/2023 10:44	WG2027277
C28-C36 Motor Oil Range	70.4		0.274	4.00	1	03/22/2023 10:44	WG2027277
(S) o-Terphenyl	*58.1*			*18.0-148*		*03/22/2023 10:44*	WG2027277

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	03/23/2023 07:05	WG2027320
Anthracene	U		0.00230	0.00600	1	03/23/2023 07:05	WG2027320
Benzo(a)anthracene	U		0.00173	0.00600	1	03/23/2023 07:05	WG2027320
Benzo(b)fluoranthene	U		0.00153	0.00600	1	03/23/2023 07:05	WG2027320
Benzo(k)fluoranthene	U		0.00215	0.00600	1	03/23/2023 07:05	WG2027320
Benzo(a)pyrene	U		0.00179	0.00600	1	03/23/2023 07:05	WG2027320
Chrysene	U		0.00232	0.00600	1	03/23/2023 07:05	WG2027320
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	03/23/2023 07:05	WG2027320
Fluoranthene	U		0.00227	0.00600	1	03/23/2023 07:05	WG2027320
Fluorene	0.00326	J	0.00205	0.00600	1	03/23/2023 07:05	WG2027320
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	03/23/2023 07:05	WG2027320
1-Methylnaphthalene	0.0114	J	0.00449	0.0200	1	03/23/2023 07:05	WG2027320
2-Methylnaphthalene	0.0186	J	0.00427	0.0200	1	03/23/2023 07:05	WG2027320
Naphthalene	0.00582	J	0.00408	0.0200	1	03/23/2023 07:05	WG2027320
Pyrene	U	J4	0.00200	0.00600	1	03/23/2023 07:05	WG2027320
(S) p-Terphenyl-d14	*115*			*23.0-120*		*03/23/2023 07:05*	WG2027320
(S) Nitrobenzene-d5	*103*			*14.0-149*		*03/23/2023 07:05*	WG2027320
(S) 2-Fluorobiphenyl	*86.5*			*34.0-125*		*03/23/2023 07:05*	WG2027320

Method Blank (MB)

(MB) R3903307-1 03/21/23 03:27

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

L1591732-33 Original Sample (OS) • Duplicate (DUP)

(OS) L1591732-33 03/21/23 04:05 • (DUP) R3903307-3 03/21/23 04:11

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

L1595630-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1595630-03 03/21/23 05:49 • (DUP) R3903307-8 03/21/23 05:55

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) R3903307-2 03/21/23 03:34

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	10.0	10.1	101	80.0-120	

L1591732-42 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1591732-42 03/21/23 04:42 • (MS) R3903307-4 03/21/23 04:47 • (MSD) R3903307-5 03/21/23 04:52

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	20.0	U	19.2	20.0	95.9	99.8	1	75.0-125			3.95	20

L1591732-42 Original Sample (OS) • Matrix Spike (MS)

(OS) L1591732-42 03/21/23 04:42 • (MS) R3903307-6 03/21/23 04:57

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	643	U	703	109	50	75.0-125	

L1595630-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1595630-05 03/18/23 09:33 • (DUP) R3902535-2 03/18/23 09:33

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	pH	su		%		%
pH	8.65	8.70	1	0.576		1

Sample Narrative:

OS: 8.65 at 20.6C

DUP: 8.7 at 20.5C

L1595676-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1595676-01 03/18/23 09:33 • (DUP) R3902535-3 03/18/23 09:33

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.69	8.74	1	0.574		1

Sample Narrative:

OS: 8.69 at 20.5C

DUP: 8.74 at 20.6C

Laboratory Control Sample (LCS)

(LCS) R3902535-1 03/18/23 09:33

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 20.6C

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

Method Blank (MB)

(MB) R3903943-1 03/22/23 11:06

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

L1595631-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1595631-01 03/22/23 11:06 • (DUP) R3903943-3 03/22/23 11:06

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	515	521	1	1.16		20

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

L1596104-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1596104-02 03/22/23 11:06 • (DUP) R3903943-4 03/22/23 11:06

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	706	717	1	1.55		20

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

Laboratory Control Sample (LCS)

(LCS) R3903943-2 03/22/23 11:06

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	1120	1100	98.3	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3902781-1 03/19/23 18:44

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) R3902781-2 03/19/23 18:46 • (LCSD) R3902781-3 03/19/23 18:49

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	1.14	1.17	114	117	80.0-120			2.68	20

QUALITY CONTROL SUMMARY

L1595631-01

Method Blank (MB)

(MB) R3902853-1 03/20/23 03:02

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

Laboratory Control Sample (LCS)

(LCS) R3902853-2 03/20/23 03:06

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	104	104	80.0-120	
Barium	100	105	105	80.0-120	
Cadmium	100	108	108	80.0-120	
Copper	100	101	101	80.0-120	
Lead	100	105	105	80.0-120	
Nickel	100	105	105	80.0-120	
Selenium	100	116	116	80.0-120	
Silver	20.0	22.2	111	80.0-120	
Zinc	100	103	103	80.0-120	

L1595630-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1595630-05 03/20/23 03:09 • (MS) R3902853-5 03/20/23 03:19 • (MSD) R3902853-6 03/20/23 03:22

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	3.25	93.1	90.9	89.9	87.7	5	75.0-125			2.36	20
Barium	100	1520	1670	1880	149	362	5	75.0-125	E V	E V	12.0	20
Cadmium	100	0.242	94.4	93.4	94.2	93.1	5	75.0-125			1.11	20
Copper	100	8.63	100	95.9	91.4	87.2	5	75.0-125			4.25	20
Lead	100	6.79	97.0	96.1	90.2	89.3	5	75.0-125			0.915	20
Nickel	100	14.2	94.3	94.7	80.1	80.4	5	75.0-125			0.378	20
Selenium	100	0.423	100	100	99.6	100	5	75.0-125			0.444	20
Silver	20.0	U	18.9	19.0	94.6	94.8	5	75.0-125			0.235	20
Zinc	100	39.7	117	119	77.2	79.4	5	75.0-125			1.89	20

Method Blank (MB)

(MB) R3902810-2 03/19/23 14:58

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*98.9*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3902810-1 03/19/23 13:34

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.75	105	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*108*	*77.0-120*	

Method Blank (MB)

(MB) R3903129-2 03/18/23 12:12

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	*97.2*			*75.0-131*
(S) 4-Bromofluorobenzene	*89.6*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*95.8*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3903129-1 03/18/23 10:55

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.118	94.4	70.0-123	
Toluene	0.125	0.114	91.2	75.0-121	
Ethylbenzene	0.125	0.109	87.2	74.0-126	
Xylenes, Total	0.375	0.337	89.9	72.0-127	
1,2,4-Trimethylbenzene	0.125	0.114	91.2	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.107	85.6	73.0-127	
(S) Toluene-d8			*92.4*	*75.0-131*	
(S) 4-Bromofluorobenzene			*93.6*	*67.0-138*	
(S) 1,2-Dichloroethane-d4			*97.8*	*70.0-130*	

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

Method Blank (MB)

(MB) R3904086-1 03/22/23 08:15

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	0.282	J	0.274	4.00
(S) o-Terphenyl	*67.3*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3904086-2 03/22/23 08:27

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	34.8	69.6	50.0-150	
(S) o-Terphenyl			*77.5*	*18.0-148*	

L1595353-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1595353-01 03/22/23 11:11 • (MS) R3904090-1 03/22/23 13:58 • (MSD) R3904090-2 03/22/23 14:10

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	50.0	22.0	46.7	49.9	49.4	55.8	10	50.0-150	J6		6.63	20
(S) o-Terphenyl					*91.0*	*93.2*		*18.0-148*				

Sample Narrative:

OS: Dilution due to matrix impact during extract concentration procedure

Method Blank (MB)

(MB) R3904496-2 03/22/23 23:18

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	*127*	J1		*23.0-120*
(S) Nitrobenzene-d5	*106*			*14.0-149*
(S) 2-Fluorobiphenyl	*107*			*34.0-125*

Laboratory Control Sample (LCS)

(LCS) R3904496-1 03/22/23 23:01

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0858	107	50.0-120	
Anthracene	0.0800	0.0778	97.3	50.0-126	
Benzo(a)anthracene	0.0800	0.0810	101	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0902	113	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0915	114	49.0-125	
Benzo(a)pyrene	0.0800	0.0842	105	42.0-120	
Chrysene	0.0800	0.0880	110	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0808	101	47.0-125	
Fluoranthene	0.0800	0.0865	108	49.0-129	
Fluorene	0.0800	0.0864	108	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0865	108	46.0-125	
1-Methylnaphthalene	0.0800	0.0903	113	51.0-121	
2-Methylnaphthalene	0.0800	0.0891	111	50.0-120	
Naphthalene	0.0800	0.0858	107	50.0-120	
Pyrene	0.0800	0.110	138	43.0-123	J4

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

Laboratory Control Sample (LCS)

(LCS) R3904496-1 03/22/23 23:01

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
(S) p-Terphenyl-d14			*175*	*23.0-120*	J1
(S) Nitrobenzene-d5			*114*	*14.0-149*	
(S) 2-Fluorobiphenyl			*110*	*34.0-125*	

L1595630-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1595630-03 03/23/23 05:38 • (MS) R3904496-3 03/23/23 05:56 • (MSD) R3904496-4 03/23/23 06:13

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.0800	U	0.0581	0.0640	72.6	80.4	1	14.0-127			9.66	27
Anthracene	0.0800	U	0.0537	0.0577	67.1	72.5	1	10.0-145			7.18	30
Benzo(a)anthracene	0.0800	U	0.0566	0.0606	70.8	76.1	1	10.0-139			6.83	30
Benzo(b)fluoranthene	0.0800	U	0.0623	0.0748	77.9	94.0	1	10.0-140			18.2	36
Benzo(k)fluoranthene	0.0800	U	0.0636	0.0731	79.5	91.8	1	10.0-137			13.9	31
Benzo(a)pyrene	0.0800	U	0.0702	0.0726	87.8	91.2	1	10.0-141			3.36	31
Chrysene	0.0800	U	0.0587	0.0664	73.4	83.4	1	10.0-145			12.3	30
Dibenz(a,h)anthracene	0.0800	U	0.0528	0.0701	66.0	88.1	1	10.0-132			28.2	31
Fluoranthene	0.0800	U	0.0607	0.0715	75.9	89.8	1	10.0-153			16.3	33
Fluorene	0.0800	U	0.0600	0.0664	75.0	83.4	1	11.0-130			10.1	29
Indeno(1,2,3-cd)pyrene	0.0800	U	0.0572	0.0676	71.5	84.9	1	10.0-137			16.7	32
1-Methylnaphthalene	0.0800	0.00743	0.0718	0.0757	80.5	85.8	1	10.0-142			5.29	28
2-Methylnaphthalene	0.0800	0.0169	0.0861	0.0828	86.5	82.8	1	10.0-137			3.91	28
Naphthalene	0.0800	0.00840	0.0738	0.0714	81.8	79.1	1	10.0-135			3.31	27
Pyrene	0.0800	U	0.0650	0.0720	81.3	90.5	1	10.0-148			10.2	35
(S) p-Terphenyl-d14					*96.5*	*112*		*23.0-120*				
(S) Nitrobenzene-d5					*88.7*	*105*		*14.0-149*				
(S) 2-Fluorobiphenyl					*83.1*	*95.7*		*34.0-125*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J4	The associated batch QC was outside the established quality control range for accuracy.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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

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

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

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

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

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

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

ALL BOLD OUTLINED AREAS are for LAB USE ONLY

Company: Caerus Oil and Gas LLC	Billing Information: Info on file
Address: Info on file	
Report To: Jake Janicek, Brett Middleton, Blair Rollins	Email To: info on file
Copy To: Chris McKisson, remediation@confluence-cc.com	Site Collection Info/Address:
Customer Project Name/Number: J14 496 Flowline Release	State: CO / County/City: Rio Blanco / Time Zone Collected: [ ]PT [X]MT [ ]CT [ ]ET
Phone: / Email:	Site/Facility ID #: J14 496 / Compliance Monitoring? [ ] Yes [X] No
Collected By (print): Ahmed Shah	Purchase Order # : / Quote #: / DW PWS ID #: / DW Location Code:
Collected By (signature):	Turnaround Date Required: Standard Turnaround / Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: (Expedite Charges Apply) [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day / Field Filtered (if applicable): [ ] Yes [ ] No / Analysis:

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

Container Preservative Type **

** 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:

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)	Lab Sample # / Comments
20230314-J14-496-STOCK_COMP	SL	G	3/14/2023	1045				3	G	X	X	X	X	X	X	L1595631-01

Analyses

Lab Profile/Line:

Lab Sample Receipt Checklist:

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

LAB USE ONLY:
Lab Sample # / Comments:

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 #: 6126 6537 4552

Samples received via: FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: 1.6 NSA6
Cooler 1 Temp Upon Receipt: __oC
Cooler 1 Therm Corr. Factor: __oC
Cooler 1 Corrected Temp: __oC
Comments:

Relinquished by/Company: (Signature)	Date/Time: 3/15/23 1245	Received by/Company: (Signature)	Date/Time:	E198
Relinquished by/Company: (Signature)	Date/Time: 3/15/23 1400	Received by/Company: (Signature)	Date/Time:	Acctnum: / Template: / Prelogin:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time: 3-16-23 945	PM: / PB:

Trip Blank Received: Y (N) NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: ____ of: ____

ANALYTICAL REPORT

July 18, 2022

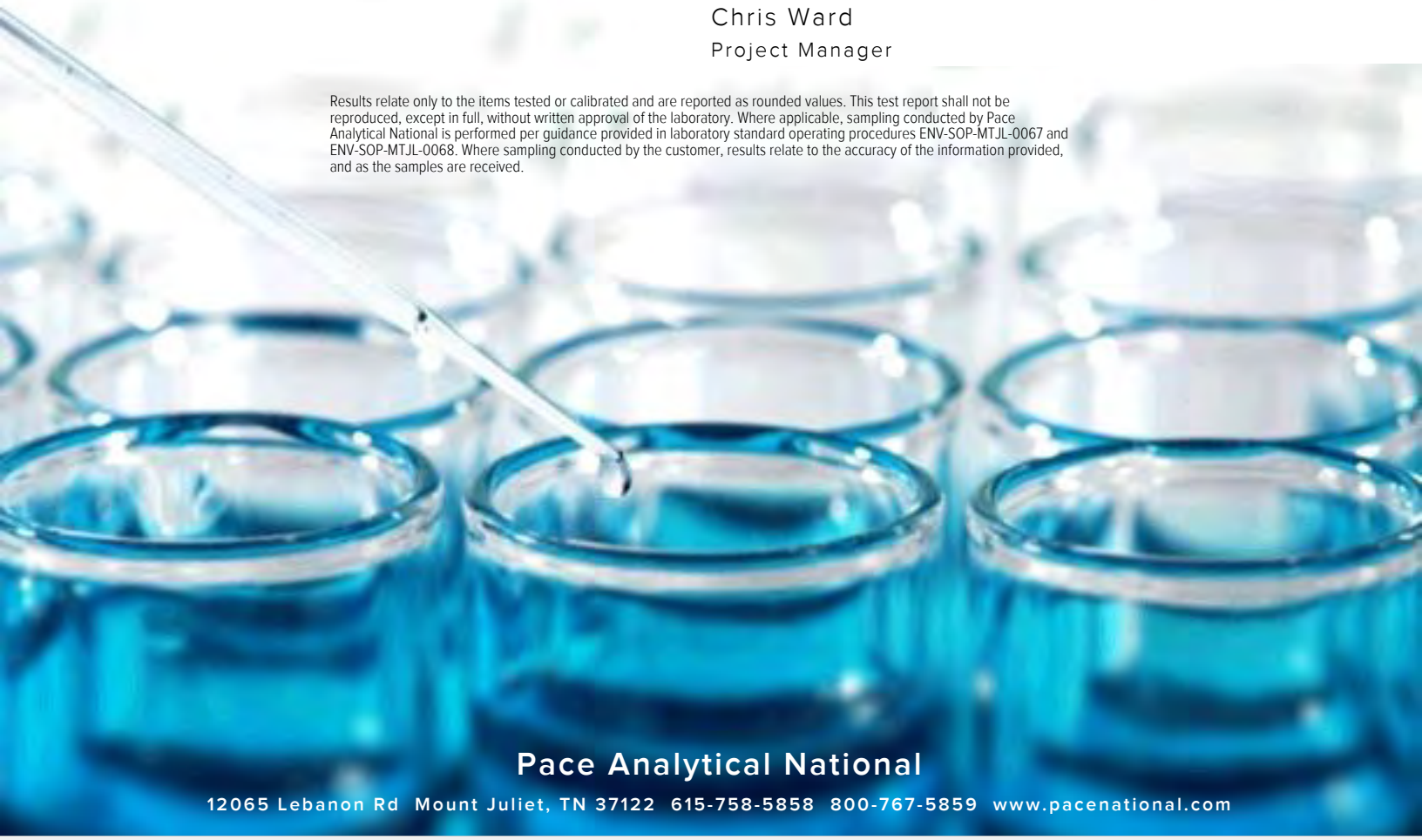
Caerus Oil and Gas

Sample Delivery Group:	L1507626
Samples Received:	06/22/2022
Project Number:	J14 496
Description:	J14 496 Background

Report To: Blair Rollins
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

20220620-J14_496-BGE(1520)@30' L1507626-01 Solid

Collected by: A. Smith
Collected date/time: 06/20/22 15:20
Received date/time: 06/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1891382	1	07/14/22 15:04	07/14/22 15:04	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1887036	1	06/29/22 20:00	07/01/22 13:30	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1888292	1	06/30/22 12:00	07/01/22 13:49	GI	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1885637	1	07/02/22 07:00	07/02/22 10:13	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1885831	1	06/29/22 17:06	07/09/22 02:19	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1891380	1	07/13/22 21:05	07/15/22 16:25	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1885832	5	06/29/22 17:11	06/30/22 17:46	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1885475	1	06/24/22 14:55	06/27/22 04:08	MGF	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1887497	1	06/30/22 03:23	06/30/22 12:27	JAS	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	0.0738		1	07/14/2022 15:04	WG1891382

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Hexavalent Chromium	ND		1.00	1	07/01/2022 13:30	WG1887036

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	pH				
pH	8.66	T8	1	07/01/2022 13:49	WG1888292

Sample Narrative:

L1507626-01 WG1888292: 8.66 at 23.6C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	300		10.0	1	07/02/2022 10:13	WG1885637

Sample Narrative:

L1507626-01 WG1885637: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Barium	381		0.500	1	07/09/2022 02:19	WG1885831
Cadmium	ND		0.500	1	07/09/2022 02:19	WG1885831
Copper	15.4		2.00	1	07/09/2022 02:19	WG1885831
Lead	9.44		0.500	1	07/09/2022 02:19	WG1885831
Nickel	16.5		2.00	1	07/09/2022 02:19	WG1885831
Selenium	ND		2.00	1	07/09/2022 02:19	WG1885831
Silver	ND		1.00	1	07/09/2022 02:19	WG1885831
Zinc	40.7		5.00	1	07/09/2022 02:19	WG1885831

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/l		mg/l			
Hot Water Sol. Boron	ND		0.200	1	07/15/2022 16:25	WG1891380

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Arsenic	2.67		1.00	5	06/30/2022 17:46	WG1885832

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
TPH (GC/FID) Low Fraction	ND		0.100	1	06/27/2022 04:08	WG1885475
(S) a,a,a-Trifluorotoluene(FID)	*95.0*		*77.0-120*		*06/27/2022 04:08*	WG1885475

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	06/30/2022 12:27	WG1887497
C28-C36 Motor Oil Range	5.75		4.00	1	06/30/2022 12:27	WG1887497
(S) o-Terphenyl	*68.7*		*18.0-148*		*06/30/2022 12:27*	WG1887497

Method Blank (MB)

(MB) R3810285-1 07/01/22 12:57

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

L1506558-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1506558-05 07/01/22 13:10 • (DUP) R3810285-3 07/01/22 13:15

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

L1508027-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1508027-04 07/01/22 15:35 • (DUP) R3810285-8 07/01/22 15:40

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) R3810285-2 07/01/22 13:04

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

L1507648-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507648-03 07/01/22 14:12 • (MS) R3810285-4 07/01/22 14:17 • (MSD) R3810285-5 07/01/22 14:22

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 %
Hexavalent Chromium	20.0	ND	15.3	14.5	76.3	72.6	1	75.0-125		J6	5.02	20

Sample Narrative:

MSD: Matrix spike failure due to matrix; sample is a reducer.

L1507648-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1507648-03 07/01/22 14:12 • (MS) R3810285-7 07/01/22 14:33

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	665	ND	548	82.5	50	75.0-125	

L1508027-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1508027-03 07/01/22 13:49 • (DUP) R3810098-2 07/01/22 13:49

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.73	7.71	1	0.259		1

Sample Narrative:

OS: 7.73 at 23.7C

DUP: 7.71 at 23.8C

L1508868-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1508868-01 07/01/22 13:49 • (DUP) R3810098-3 07/01/22 13:49

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.68	8.67	1	0.115		1

Sample Narrative:

OS: 8.68 at 23.7C

DUP: 8.67 at 23.8C

Laboratory Control Sample (LCS)

(LCS) R3810098-1 07/01/22 13:49

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	9.92	99.2	99.0-101	

Sample Narrative:

LCS: 9.92 at 23.3C

Method Blank (MB)

(MB) R3810271-1 07/02/22 10:13

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

L1507648-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1507648-06 07/02/22 10:13 • (DUP) R3810271-3 07/02/22 10:13

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	839	784	1	6.78		20

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

L1507900-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1507900-01 07/02/22 10:13 • (DUP) R3810271-4 07/02/22 10:13

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	14500	14900	1	2.11		20

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

Laboratory Control Sample (LCS)

(LCS) R3810271-2 07/02/22 10:13

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	280	104	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3812803-1 07/09/22 01:41

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Barium	U		0.0852	0.500
Cadmium	U		0.0471	0.500
Copper	U		0.400	2.00
Lead	U		0.208	0.500
Nickel	0.159	J	0.132	2.00
Selenium	U		0.764	2.00
Silver	U		0.127	1.00
Zinc	U		0.832	5.00

Laboratory Control Sample (LCS)

(LCS) R3812803-2 07/09/22 01:44

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	103	103	80.0-120	
Cadmium	100	98.4	98.4	80.0-120	
Copper	100	98.1	98.1	80.0-120	
Lead	100	97.2	97.2	80.0-120	
Nickel	100	102	102	80.0-120	
Selenium	100	96.5	96.5	80.0-120	
Silver	20.0	16.8	84.2	80.0-120	
Zinc	100	100	100	80.0-120	

L1507241-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507241-05 07/09/22 01:47 • (MS) R3812803-5 07/09/22 01:56 • (MSD) R3812803-6 07/09/22 01:58

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	100	316	438	445	123	129	1	75.0-125		J5	1.54	20
Cadmium	100	0.535	111	102	110	102	1	75.0-125			8.00	20
Copper	100	39.7	154	143	114	103	1	75.0-125			7.46	20
Lead	100	24.8	131	121	106	96.5	1	75.0-125			7.31	20
Nickel	100	21.9	131	122	109	99.8	1	75.0-125			7.48	20
Selenium	100	ND	111	103	109	102	1	75.0-125			7.00	20
Silver	20.0	ND	17.8	16.6	89.0	83.0	1	75.0-125			6.99	20
Zinc	100	59.3	158	142	99.2	83.0	1	75.0-125			10.8	20

Method Blank (MB)

(MB) R3815649-1 07/15/22 16:17

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) R3815649-2 07/15/22 16:20 • (LCSD) R3815649-3 07/15/22 16:23

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	0.986	1.01	98.6	101	80.0-120			2.12	20

Method Blank (MB)

(MB) R3809750-1 06/30/22 16:54

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) R3809750-2 06/30/22 16:57

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

L1507241-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507241-05 06/30/22 17:01 • (MS) R3809750-5 06/30/22 17:11 • (MSD) R3809750-6 06/30/22 17:14

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	44.6	151	135	106	90.3	5	75.0-125			11.0	20

Method Blank (MB)

(MB) R3809354-2 06/26/22 19:57

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*97.9*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3809354-1 06/26/22 18:34

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.51	82.0	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*97.2*	*77.0-120*	

Method Blank (MB)

(MB) R3809610-1 06/30/22 12:02

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	0.559	J	0.274	4.00
(S) o-Terphenyl	*84.4*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3809610-2 06/30/22 12:14

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	32.8	65.6	50.0-150	
(S) o-Terphenyl			*57.5*	*18.0-148*	

L1507192-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507192-01 06/30/22 16:12 • (MS) R3809610-3 06/30/22 16:25 • (MSD) R3809610-4 06/30/22 16:38

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	48.3	4.03	35.8	27.8	65.8	48.6	1	50.0-150		J3 J6	25.2	20
(S) o-Terphenyl					*52.6*	*39.7*		*18.0-148*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
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.

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

ALL BOLD OUTLINED AREAS are for LAB USE ONLY

Company: Caerus Oil and Gas LLC	Billing Information: Info on file
Address: Info on file	
Report To: Jake Janicek, Brett Middleton, Blair Rollins	Email To: info on file
Copy To: Chris McKisson, remediation@confluence-cc.com	Site Collection Info/Address:
Customer Project Name/Number: J14 496 Background	State: CO / County/City: Garfield / Time Zone Collected: [ ]PT [X]MT [ ]CT [ ]ET
Phone: / Email:	Site/Facility ID #: J14 496 / Compliance Monitoring? [ ] Yes [X] No
Collected By (print): Andrew Smith	Purchase Order # : / Quote #: / DW PWS ID #: / DW Location Code:
Collected By (Signature): A Smith	Turnaround Date Required: Standard 5-day / Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: (Expedite Charges Apply) [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day / Field Filtered (if applicable): [ ] Yes [ ] No / Analysis: _____

Container Preservative Type **

Lab Project Manager:

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

Analyses

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

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Container Type: Plastic (P) or Glass (G)	Table 915-1 VOCs	TPH (ORO, GRO, DRO)	Table 915-1 Metal's	Table 915-1 PAHs	pH, EC, SAR, Arsenic	Boron (Hot Water Soluble Soil)	Lab Sample # / Comments
20220620-J14_496-BGE(1520)@30'	SL	G	6/20/2022	1520				1	P		X	X		X	X	L1507626 -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:

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 #: 575580848503

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: 0.6 oC
Cooler 1 Therm Corr. Factor: 0 oC
Cooler 1 Corrected Temp: 0.6 oC
Comments: DRAFT

Relinquished by/Company: (Signature) A Smith	Date/Time: 06/21/22 1200	Received by/Company: (Signature)	Date/Time: 6/21 1200	F228
Relinquished by/Company: (Signature)	Date/Time: 6/21 1700	Received by/Company: (Signature)	Date/Time:	Acctnum: / Template: / Prelogin: / PM: / PB:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time: 6/22/22 900	

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: _____ of: _____

ANALYTICAL REPORT

July 18, 2022

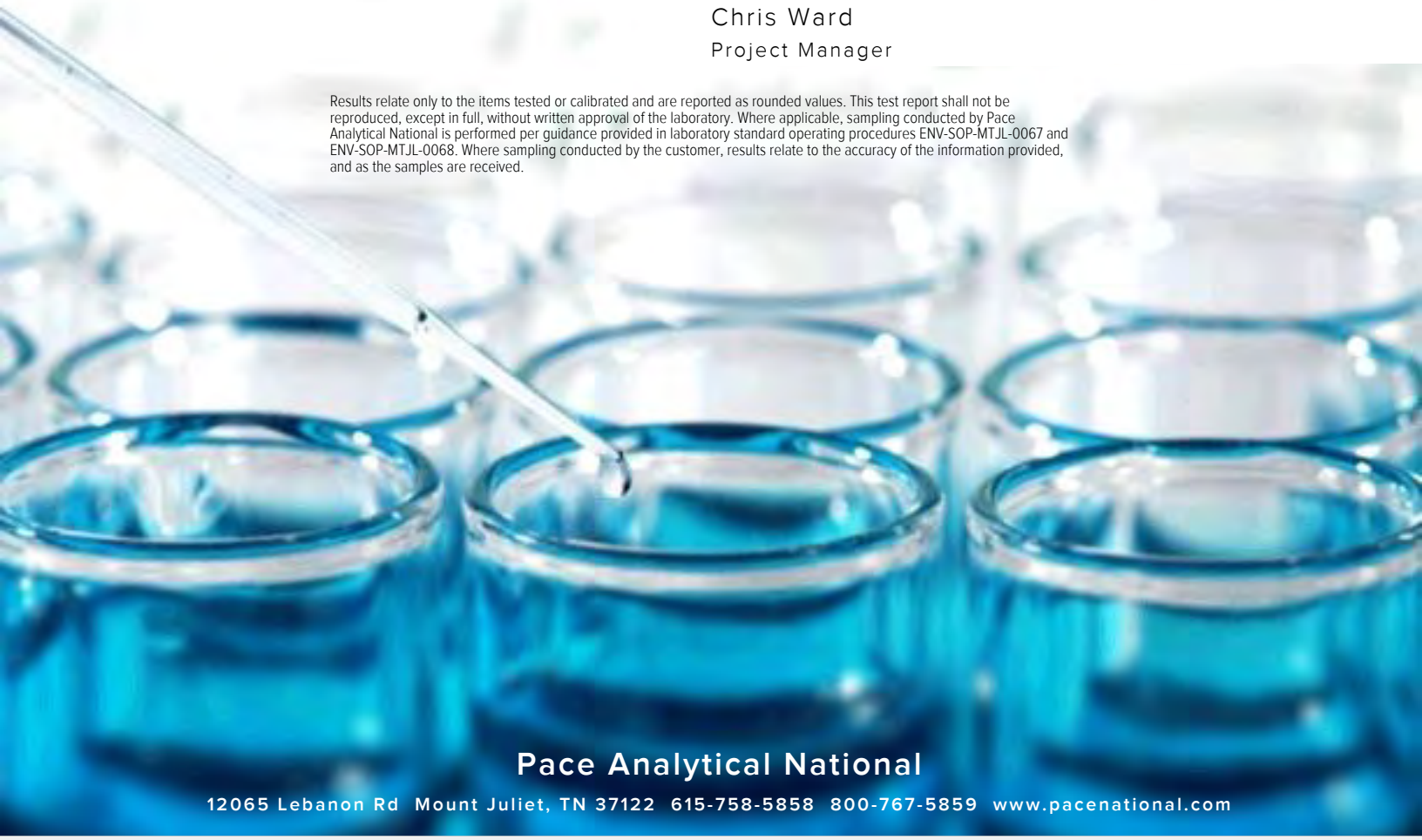
Caerus Oil and Gas

Sample Delivery Group:	L1507629
Samples Received:	06/22/2022
Project Number:	J14 496
Description:	J14 496 Background

Report To: Blair Rollins
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

20220620-J14_496BGE(1640)@40' L1507629-01 Solid

Collected by: A. Smith
Collected date/time: 06/20/22 16:40
Received date/time: 06/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1891382	1	07/14/22 15:07	07/14/22 15:07	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1887036	1	06/29/22 20:00	07/01/22 13:36	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1887564	1	06/30/22 08:00	07/01/22 10:00	GI	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1885637	1	07/02/22 07:00	07/02/22 10:13	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1885831	1	06/29/22 17:06	07/09/22 02:22	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1891380	1	07/13/22 21:05	07/15/22 16:28	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1885832	5	06/29/22 17:11	06/30/22 17:49	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1885475	1	06/24/22 14:55	06/27/22 04:28	MGF	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1887500	1	06/30/22 01:01	06/30/22 16:58	JAS	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	0.441		1	07/14/2022 15:07	WG1891382

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Hexavalent Chromium	ND		1.00	1	07/01/2022 13:36	WG1887036

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	pH				
pH	8.34	T8	1	07/01/2022 10:00	WG1887564

Sample Narrative:

L1507629-01 WG1887564: 8.34 at 23C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	279		10.0	1	07/02/2022 10:13	WG1885637

Sample Narrative:

L1507629-01 WG1885637: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Barium	513		0.500	1	07/09/2022 02:22	WG1885831
Cadmium	ND		0.500	1	07/09/2022 02:22	WG1885831
Copper	13.3		2.00	1	07/09/2022 02:22	WG1885831
Lead	8.29		0.500	1	07/09/2022 02:22	WG1885831
Nickel	16.2		2.00	1	07/09/2022 02:22	WG1885831
Selenium	ND		2.00	1	07/09/2022 02:22	WG1885831
Silver	ND		1.00	1	07/09/2022 02:22	WG1885831
Zinc	42.2		5.00	1	07/09/2022 02:22	WG1885831

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/l		mg/l			
Hot Water Sol. Boron	ND		0.200	1	07/15/2022 16:28	WG1891380

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Arsenic	3.23		1.00	5	06/30/2022 17:49	WG1885832

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
TPH (GC/FID) Low Fraction	ND		0.100	1	06/27/2022 04:28	WG1885475
(S) a,a,a-Trifluorotoluene(FID)	*95.3*		*77.0-120*		*06/27/2022 04:28*	WG1885475

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	06/30/2022 16:58	WG1887500
C28-C36 Motor Oil Range	14.7		4.00	1	06/30/2022 16:58	WG1887500
(S) o-Terphenyl	*53.7*		*18.0-148*		*06/30/2022 16:58*	WG1887500

Method Blank (MB)

(MB) R3810285-1 07/01/22 12:57

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

L1506558-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1506558-05 07/01/22 13:10 • (DUP) R3810285-3 07/01/22 13:15

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

L1508027-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1508027-04 07/01/22 15:35 • (DUP) R3810285-8 07/01/22 15:40

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) R3810285-2 07/01/22 13:04

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

L1507648-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507648-03 07/01/22 14:12 • (MS) R3810285-4 07/01/22 14:17 • (MSD) R3810285-5 07/01/22 14:22

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 %
Hexavalent Chromium	20.0	ND	15.3	14.5	76.3	72.6	1	75.0-125		J6	5.02	20

Sample Narrative:

MSD: Matrix spike failure due to matrix; sample is a reducer.

L1507648-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1507648-03 07/01/22 14:12 • (MS) R3810285-7 07/01/22 14:33

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	665	ND	548	82.5	50	75.0-125	

L1507206-17 Original Sample (OS) • Duplicate (DUP)

(OS) L1507206-17 07/01/22 10:00 • (DUP) R3809868-2 07/01/22 10:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.52	7.50	1	0.266		1

Sample Narrative:

OS: 7.52 at 22.7C

DUP: 7.5 at 22.7C

L1507206-48 Original Sample (OS) • Duplicate (DUP)

(OS) L1507206-48 07/01/22 10:00 • (DUP) R3809868-3 07/01/22 10:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.19	8.16	1	0.367		1

Sample Narrative:

OS: 8.19 at 23.1C

DUP: 8.16 at 23.1C

Laboratory Control Sample (LCS)

(LCS) R3809868-1 07/01/22 10:00

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	9.92	99.2	99.0-101	

Sample Narrative:

LCS: 9.92 at 23C

Method Blank (MB)

(MB) R3810271-1 07/02/22 10:13

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

L1507648-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1507648-06 07/02/22 10:13 • (DUP) R3810271-3 07/02/22 10:13

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	839	784	1	6.78		20

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

L1507900-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1507900-01 07/02/22 10:13 • (DUP) R3810271-4 07/02/22 10:13

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	14500	14900	1	2.11		20

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

Laboratory Control Sample (LCS)

(LCS) R3810271-2 07/02/22 10:13

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	280	104	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3812803-1 07/09/22 01:41

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Barium	U		0.0852	0.500
Cadmium	U		0.0471	0.500
Copper	U		0.400	2.00
Lead	U		0.208	0.500
Nickel	0.159	J	0.132	2.00
Selenium	U		0.764	2.00
Silver	U		0.127	1.00
Zinc	U		0.832	5.00

Laboratory Control Sample (LCS)

(LCS) R3812803-2 07/09/22 01:44

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	103	103	80.0-120	
Cadmium	100	98.4	98.4	80.0-120	
Copper	100	98.1	98.1	80.0-120	
Lead	100	97.2	97.2	80.0-120	
Nickel	100	102	102	80.0-120	
Selenium	100	96.5	96.5	80.0-120	
Silver	20.0	16.8	84.2	80.0-120	
Zinc	100	100	100	80.0-120	

L1507241-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507241-05 07/09/22 01:47 • (MS) R3812803-5 07/09/22 01:56 • (MSD) R3812803-6 07/09/22 01:58

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	100	316	438	445	123	129	1	75.0-125		J5	1.54	20
Cadmium	100	0.535	111	102	110	102	1	75.0-125			8.00	20
Copper	100	39.7	154	143	114	103	1	75.0-125			7.46	20
Lead	100	24.8	131	121	106	96.5	1	75.0-125			7.31	20
Nickel	100	21.9	131	122	109	99.8	1	75.0-125			7.48	20
Selenium	100	ND	111	103	109	102	1	75.0-125			7.00	20
Silver	20.0	ND	17.8	16.6	89.0	83.0	1	75.0-125			6.99	20
Zinc	100	59.3	158	142	99.2	83.0	1	75.0-125			10.8	20

Method Blank (MB)

(MB) R3815649-1 07/15/22 16:17

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) R3815649-2 07/15/22 16:20 • (LCSD) R3815649-3 07/15/22 16:23

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	0.986	1.01	98.6	101	80.0-120			2.12	20

Method Blank (MB)

(MB) R3809750-1 06/30/22 16:54

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) R3809750-2 06/30/22 16:57

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

L1507241-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507241-05 06/30/22 17:01 • (MS) R3809750-5 06/30/22 17:11 • (MSD) R3809750-6 06/30/22 17:14

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	44.6	151	135	106	90.3	5	75.0-125			11.0	20

Method Blank (MB)

(MB) R3809354-2 06/26/22 19:57

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*97.9*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3809354-1 06/26/22 18:34

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.51	82.0	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*97.2*	*77.0-120*	

Method Blank (MB)

(MB) R3809476-1 06/30/22 06:27

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	0.316	J	0.274	4.00
(S) o-Terphenyl	*61.1*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3809476-2 06/30/22 06:41

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	32.5	65.0	50.0-150	
(S) o-Terphenyl			*61.3*	*18.0-148*	

L1507339-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507339-05 06/30/22 14:10 • (MS) R3809476-3 06/30/22 14:24 • (MSD) R3809476-4 06/30/22 14:38

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	50.0	ND	25.1	31.8	50.2	63.6	1	50.0-150		J3	23.6	20
(S) o-Terphenyl					*43.1*	*50.3*		*18.0-148*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
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.

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

ALL BOLD OUTLINED AREAS are for LAB USE ONLY

Company: Caerus Oil and Gas LLC	Billing Information: Info on file
Address: Info on file	
Report To: Jake Janicek, Brett Middleton, Blair Rollins	Email To: info on file
Copy To: Chris McKisson, remediation@confluence-cc.com	Site Collection Info/Address:
Customer Project Name/Number: J14 496 Background	State: CO / County/City: Garfield / Time Zone Collected: [ ]PT [X]MT [ ]CT [ ]ET
Phone: / Email:	Site/Facility ID #: J14 496 / Compliance Monitoring? [ ] Yes [X] No
Collected By (print): Andrew Smith	Purchase Order # : / Quote #: / DW PWS ID #: / DW Location Code:
Collected By (signature): A Smith	Turnaround Date Required: Standard 5-day / Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: ____ [ ] Hold: ____	Rush: (Expedite Charges Apply) [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day / Field Filtered (if applicable): [ ] Yes [ ] No / Analysis: ____

Container Preservative Type **

Lab Project Manager:

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

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

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Container Type: Plastic (P) or Glass (G)	Table 915-1 VOCs	TPH (ORO, GRO, DRO)	Table 915-1 Metal's	Table 915-1 PAHs	pH, EC, SAR, Arsenic	Boron (Hot Water Soluble Soil)
20220620-J14_496-BGE(1640)@40'	SL	G	6/20/2022	1640				1	P		X	X		X	X

Analyses

Lab Profile/Line:

Lab Sample Receipt Checklist:

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

LAB USE ONLY:
Lab Sample # / Comments:
L1507629
-01

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 #: 5755 8084 8503

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: 0.6 oC
Cooler 1 Therm Corr. Factor: 0.0 oC
Cooler 1 Corrected Temp: 0.6 oC
Comments: DRAFT

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
A Smith	06/21/22 1200		6/21 1200
	6/21 1700		
			6/22/22 900

F229

Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: ____ of: ____

06/22-L1507629-NCF CAERUSPCO

R3/R4/RX/EX

Time estimate: oh **Time spent:** oh **Grouping date:** 22 June 2022

Members

Cole Medley (responsible) Chris Ward

~~Due on *25 June 2022 5:00 PM* for target *Done*~~ (Was done by Cole Medley at 22 June 2022 5:30 PM)

- [x] Login Clarification needed
- [ ] Chain of custody is incomplete
- [ ] Please specify Metals requested
- [ ] Please specify TCLP requested
- [ ] Received additional samples not listed on COC
- [ ] Sample IDs on containers do not match IDs on COC
- [ ] Client did not "X" analysis
- [ ] Chain of Custody is missing
- [ ] If no COC: Received by:_____
- [ ] If no COC: Date/Time:_____
- [ ] If no COC: Temp./Cont.Rec./pH:_____
- [ ] If no COC: Carrier:_____
- [ ] If no COC: Tracking #:_____
- [ ] Client informed by call
- [x] Client informed by Email
- [ ] Client informed by Voicemail
- [x] Date/Time:_____6/22/22@1530_____
- [x] PM initials:_____CMW_____
- [x] Client Contact:_____Chris McKisson_____

Comments

Cole Medley *22 June 2022 3:15 PM*

Collection Time listed as 1640 on COC but container has time listed as 1440.
Logged per COC.

Chris Ward *22 June 2022 3:30 PM*

1640 please

Cole Medley *22 June 2022 5:30 PM*

Done.

ANALYTICAL REPORT

July 18, 2022

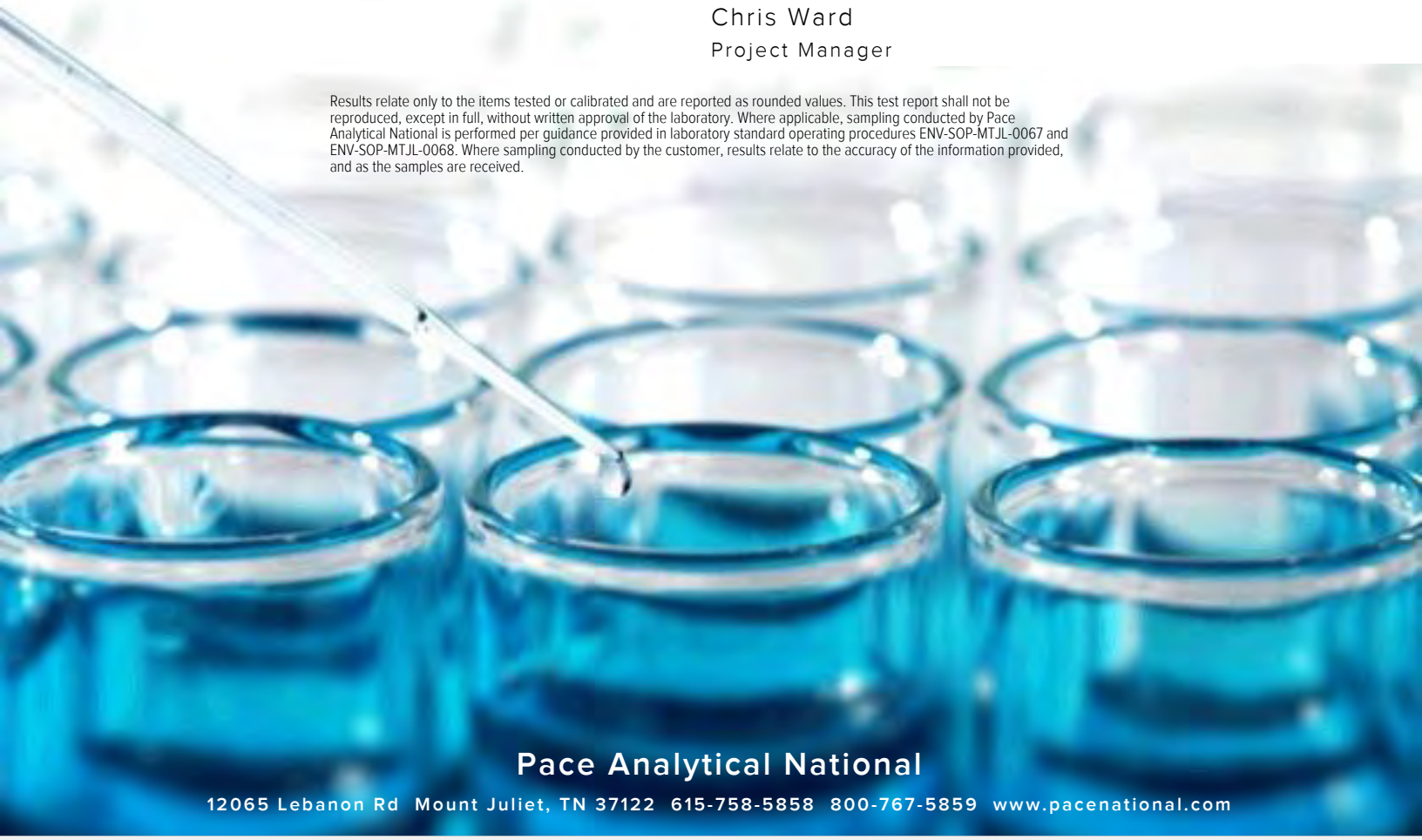
Caerus Oil and Gas

Sample Delivery Group:	L1507636
Samples Received:	06/22/2022
Project Number:	J14 496
Description:	J14 496 Background

Report To: Blair Rollins
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

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SAMPLE SUMMARY

20220620-J14_496BGE(1455)@10'-12' L1507636-01 Solid

Collected by: A. Smith
Collected date/time: 06/20/22 14:55
Received date/time: 06/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1891382	1	07/14/22 15:10	07/14/22 15:10	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1887036	1	06/29/22 20:00	07/01/22 13:41	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1887564	1	06/30/22 08:00	07/01/22 10:00	GI	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1885637	1	07/02/22 07:00	07/02/22 10:13	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1885831	1	06/29/22 17:06	07/09/22 02:25	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1891380	1	07/13/22 21:05	07/15/22 16:31	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1885832	5	06/29/22 17:11	06/30/22 17:52	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1885475	1	06/24/22 14:55	06/27/22 04:49	MGF	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1887500	1	06/30/22 01:01	06/30/22 16:44	JAS	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	1.38		1	07/14/2022 15:10	WG1891382

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	07/01/2022 13:41	WG1887036

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.35	T8	1	07/01/2022 10:00	WG1887564

Sample Narrative:
L1507636-01 WG1887564: 8.35 at 22.9C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	262		10.0	1	07/02/2022 10:13	WG1885637

Sample Narrative:
L1507636-01 WG1885637: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	296		0.500	1	07/09/2022 02:25	WG1885831
Cadmium	ND		0.500	1	07/09/2022 02:25	WG1885831
Copper	18.8		2.00	1	07/09/2022 02:25	WG1885831
Lead	11.7		0.500	1	07/09/2022 02:25	WG1885831
Nickel	20.2		2.00	1	07/09/2022 02:25	WG1885831
Selenium	ND		2.00	1	07/09/2022 02:25	WG1885831
Silver	ND		1.00	1	07/09/2022 02:25	WG1885831
Zinc	54.7		5.00	1	07/09/2022 02:25	WG1885831

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	ND		0.200	1	07/15/2022 16:31	WG1891380

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.66		1.00	5	06/30/2022 17:52	WG1885832

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	06/27/2022 04:49	WG1885475
(S) a,a,a-Trifluorotoluene(FID)	*95.6*		*77.0-120*		*06/27/2022 04:49*	WG1885475

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	06/30/2022 16:44	WG1887500
C28-C36 Motor Oil Range	ND		4.00	1	06/30/2022 16:44	WG1887500
(S) o-Terphenyl	*50.3*		*18.0-148*		*06/30/2022 16:44*	WG1887500

Method Blank (MB)

(MB) R3810285-1 07/01/22 12:57

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

L1506558-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1506558-05 07/01/22 13:10 • (DUP) R3810285-3 07/01/22 13:15

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

L1508027-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1508027-04 07/01/22 15:35 • (DUP) R3810285-8 07/01/22 15:40

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) R3810285-2 07/01/22 13:04

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

L1507648-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507648-03 07/01/22 14:12 • (MS) R3810285-4 07/01/22 14:17 • (MSD) R3810285-5 07/01/22 14:22

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 %
Hexavalent Chromium	20.0	ND	15.3	14.5	76.3	72.6	1	75.0-125		J6	5.02	20

Sample Narrative:

MSD: Matrix spike failure due to matrix; sample is a reducer.

L1507648-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1507648-03 07/01/22 14:12 • (MS) R3810285-7 07/01/22 14:33

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	665	ND	548	82.5	50	75.0-125	

L1507206-17 Original Sample (OS) • Duplicate (DUP)

(OS) L1507206-17 07/01/22 10:00 • (DUP) R3809868-2 07/01/22 10:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.52	7.50	1	0.266		1

Sample Narrative:

OS: 7.52 at 22.7C

DUP: 7.5 at 22.7C

L1507206-48 Original Sample (OS) • Duplicate (DUP)

(OS) L1507206-48 07/01/22 10:00 • (DUP) R3809868-3 07/01/22 10:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.19	8.16	1	0.367		1

Sample Narrative:

OS: 8.19 at 23.1C

DUP: 8.16 at 23.1C

Laboratory Control Sample (LCS)

(LCS) R3809868-1 07/01/22 10:00

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	9.92	99.2	99.0-101	

Sample Narrative:

LCS: 9.92 at 23C

Method Blank (MB)

(MB) R3810271-1 07/02/22 10:13

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

L1507648-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1507648-06 07/02/22 10:13 • (DUP) R3810271-3 07/02/22 10:13

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	839	784	1	6.78		20

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

L1507900-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1507900-01 07/02/22 10:13 • (DUP) R3810271-4 07/02/22 10:13

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	14500	14900	1	2.11		20

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

Laboratory Control Sample (LCS)

(LCS) R3810271-2 07/02/22 10:13

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	280	104	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3812803-1 07/09/22 01:41

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Barium	U		0.0852	0.500
Cadmium	U		0.0471	0.500
Copper	U		0.400	2.00
Lead	U		0.208	0.500
Nickel	0.159	J	0.132	2.00
Selenium	U		0.764	2.00
Silver	U		0.127	1.00
Zinc	U		0.832	5.00

Laboratory Control Sample (LCS)

(LCS) R3812803-2 07/09/22 01:44

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	103	103	80.0-120	
Cadmium	100	98.4	98.4	80.0-120	
Copper	100	98.1	98.1	80.0-120	
Lead	100	97.2	97.2	80.0-120	
Nickel	100	102	102	80.0-120	
Selenium	100	96.5	96.5	80.0-120	
Silver	20.0	16.8	84.2	80.0-120	
Zinc	100	100	100	80.0-120	

L1507241-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507241-05 07/09/22 01:47 • (MS) R3812803-5 07/09/22 01:56 • (MSD) R3812803-6 07/09/22 01:58

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	100	316	438	445	123	129	1	75.0-125		J5	1.54	20
Cadmium	100	0.535	111	102	110	102	1	75.0-125			8.00	20
Copper	100	39.7	154	143	114	103	1	75.0-125			7.46	20
Lead	100	24.8	131	121	106	96.5	1	75.0-125			7.31	20
Nickel	100	21.9	131	122	109	99.8	1	75.0-125			7.48	20
Selenium	100	ND	111	103	109	102	1	75.0-125			7.00	20
Silver	20.0	ND	17.8	16.6	89.0	83.0	1	75.0-125			6.99	20
Zinc	100	59.3	158	142	99.2	83.0	1	75.0-125			10.8	20

Method Blank (MB)

(MB) R3815649-1 07/15/22 16:17

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) R3815649-2 07/15/22 16:20 • (LCSD) R3815649-3 07/15/22 16:23

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	0.986	1.01	98.6	101	80.0-120			2.12	20

Method Blank (MB)

(MB) R3809750-1 06/30/22 16:54

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) R3809750-2 06/30/22 16:57

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

L1507241-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507241-05 06/30/22 17:01 • (MS) R3809750-5 06/30/22 17:11 • (MSD) R3809750-6 06/30/22 17:14

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	44.6	151	135	106	90.3	5	75.0-125			11.0	20

Method Blank (MB)

(MB) R3809354-2 06/26/22 19:57

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*97.9*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3809354-1 06/26/22 18:34

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.51	82.0	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*97.2*	*77.0-120*	

Method Blank (MB)

(MB) R3809476-1 06/30/22 06:27

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	0.316	J	0.274	4.00
(S) o-Terphenyl	*61.1*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3809476-2 06/30/22 06:41

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	32.5	65.0	50.0-150	
(S) o-Terphenyl			*61.3*	*18.0-148*	

L1507339-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507339-05 06/30/22 14:10 • (MS) R3809476-3 06/30/22 14:24 • (MSD) R3809476-4 06/30/22 14:38

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	50.0	ND	25.1	31.8	50.2	63.6	1	50.0-150		J3	23.6	20
(S) o-Terphenyl					*43.1*	*50.3*		*18.0-148*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
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.

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

ALL BOLD OUTLINED AREAS are for LAB USE ONLY

Company: Caerus Oil and Gas LLC	Billing Information: Info on file
Address: Info on file	
Report To: Jake Janicek, Brett Middleton, Blair Rollins	Email To: info on file
Copy To: Chris McKisson, remediation@confluence-cc.com	Site Collection Info/Address:
Customer Project Name/Number: J14 496 Background	State: CO / County/City: Garfield / Time Zone Collected: [ ]PT [X]MT [ ]CT [ ]ET

Container Preservative Type **

Lab Project Manager:

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

Phone: Email:	Site/Facility ID #: J14 496	Compliance Monitoring? [ ] Yes [X] No
Collected By (print): Andrew Smith	Purchase Order # : Quote #:	DW PWS ID #: DW Location Code:
Collected By (signature): A Smith	Turnaround Date Required: Standard 5-day	Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: (Expedite Charges Apply) [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day	Field Filtered (if applicable): [ ] Yes [ ] No Analysis: _____

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

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Container Type: Plastic (P) or Glass (G)	Table 915-1 VOCs	TPH (ORO, GRO, DRO)	Table 915-1 Metal's	Table 915-1 PAHs	pH, EC, SAR, Arsenic	Boron (Hot Water Soluble Soil)	Lab Sample # / Comments
20220620-J14_496-BGE(1455)@10'-12'	SL	G	6/20/2022	1455				1	P		X	X		X	X	L1507436

Analyses

Lab Profile/Line:

Lab Sample Receipt Checklist:

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

LAB USE ONLY:

Lab Sample # / Comments:

L1507436

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 #: 5755 8084 8503

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: 0.6 oC

Cooler 1 Therm Corr. Factor: 0 oC

Cooler 1 Corrected Temp: 0.6 oC

Comments: DRAFT

Relinquished by/Company: (Signature) A Smith	Date/Time: 06/21/22 1200	Received by/Company: (Signature)	Date/Time: 6/21 1200
Relinquished by/Company: (Signature)	Date/Time: 6/21 1700	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time: 6/22/22 900

F230

Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: ____ of: ____

ANALYTICAL REPORT

July 18, 2022

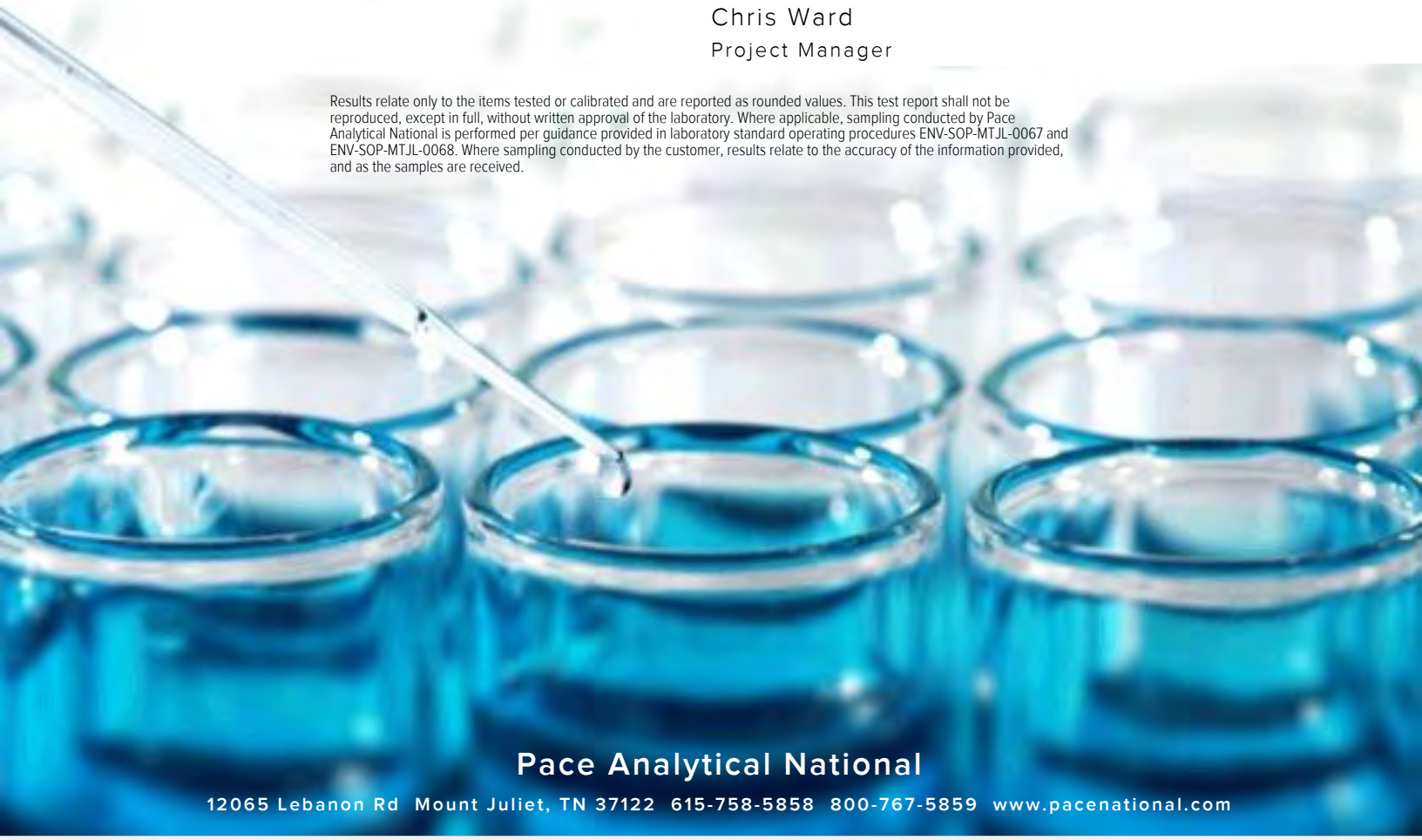
Caerus Oil and Gas

Sample Delivery Group:	L1507638
Samples Received:	06/22/2022
Project Number:	J14 496
Description:	J14 496 Background

Report To: Blair Rollins
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

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SAMPLE SUMMARY

20220620-J14_496BGE(1510)@20' L1507638-01 Solid

Collected by: A. Smith
Collected date/time: 06/20/22 15:10
Received date/time: 06/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1891382	1	07/14/22 15:12	07/14/22 15:12	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1887036	1	06/29/22 20:00	07/01/22 13:46	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1887564	1	06/30/22 08:00	07/01/22 10:00	GI	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1885637	1	07/02/22 07:00	07/02/22 10:13	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1885831	1	06/29/22 17:06	07/09/22 02:28	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1891380	1	07/13/22 21:05	07/15/22 16:33	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1885832	5	06/29/22 17:11	06/30/22 17:56	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1888058	1	06/24/22 14:55	07/01/22 20:18	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1887500	1	06/30/22 01:01	06/30/22 15:06	JAS	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	1.16		1	07/14/2022 15:12	WG1891382

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	07/01/2022 13:46	WG1887036

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.43	T8	1	07/01/2022 10:00	WG1887564

Sample Narrative:

L1507638-01 WG1887564: 8.43 at 23.1C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	216		10.0	1	07/02/2022 10:13	WG1885637

Sample Narrative:

L1507638-01 WG1885637: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	164		0.500	1	07/09/2022 02:28	WG1885831
Cadmium	ND		0.500	1	07/09/2022 02:28	WG1885831
Copper	10.1		2.00	1	07/09/2022 02:28	WG1885831
Lead	7.24		0.500	1	07/09/2022 02:28	WG1885831
Nickel	25.2		2.00	1	07/09/2022 02:28	WG1885831
Selenium	ND		2.00	1	07/09/2022 02:28	WG1885831
Silver	ND		1.00	1	07/09/2022 02:28	WG1885831
Zinc	37.3		5.00	1	07/09/2022 02:28	WG1885831

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	ND		0.200	1	07/15/2022 16:33	WG1891380

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.84		1.00	5	06/30/2022 17:56	WG1885832

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	07/01/2022 20:18	WG1888058
(S) a,a,a-Trifluorotoluene(FID)	*93.3*		*77.0-120*		*07/01/2022 20:18*	WG1888058

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	06/30/2022 15:06	WG1887500
C28-C36 Motor Oil Range	ND		4.00	1	06/30/2022 15:06	WG1887500
(S) o-Terphenyl	*54.1*		*18.0-148*		*06/30/2022 15:06*	WG1887500

Method Blank (MB)

(MB) R3810285-1 07/01/22 12:57

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

L1506558-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1506558-05 07/01/22 13:10 • (DUP) R3810285-3 07/01/22 13:15

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

L1508027-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1508027-04 07/01/22 15:35 • (DUP) R3810285-8 07/01/22 15:40

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) R3810285-2 07/01/22 13:04

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

L1507648-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507648-03 07/01/22 14:12 • (MS) R3810285-4 07/01/22 14:17 • (MSD) R3810285-5 07/01/22 14:22

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 %
Hexavalent Chromium	20.0	ND	15.3	14.5	76.3	72.6	1	75.0-125		J6	5.02	20

Sample Narrative:

MSD: Matrix spike failure due to matrix; sample is a reducer.

L1507648-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1507648-03 07/01/22 14:12 • (MS) R3810285-7 07/01/22 14:33

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	665	ND	548	82.5	50	75.0-125	

L1507206-17 Original Sample (OS) • Duplicate (DUP)

(OS) L1507206-17 07/01/22 10:00 • (DUP) R3809868-2 07/01/22 10:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.52	7.50	1	0.266		1

Sample Narrative:

OS: 7.52 at 22.7C

DUP: 7.5 at 22.7C

L1507206-48 Original Sample (OS) • Duplicate (DUP)

(OS) L1507206-48 07/01/22 10:00 • (DUP) R3809868-3 07/01/22 10:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.19	8.16	1	0.367		1

Sample Narrative:

OS: 8.19 at 23.1C

DUP: 8.16 at 23.1C

Laboratory Control Sample (LCS)

(LCS) R3809868-1 07/01/22 10:00

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	9.92	99.2	99.0-101	

Sample Narrative:

LCS: 9.92 at 23C

Method Blank (MB)

(MB) R3810271-1 07/02/22 10:13

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

L1507648-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1507648-06 07/02/22 10:13 • (DUP) R3810271-3 07/02/22 10:13

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	839	784	1	6.78		20

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

L1507900-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1507900-01 07/02/22 10:13 • (DUP) R3810271-4 07/02/22 10:13

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	14500	14900	1	2.11		20

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

Laboratory Control Sample (LCS)

(LCS) R3810271-2 07/02/22 10:13

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	280	104	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3812803-1 07/09/22 01:41

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Barium	U		0.0852	0.500
Cadmium	U		0.0471	0.500
Copper	U		0.400	2.00
Lead	U		0.208	0.500
Nickel	0.159	J	0.132	2.00
Selenium	U		0.764	2.00
Silver	U		0.127	1.00
Zinc	U		0.832	5.00

Laboratory Control Sample (LCS)

(LCS) R3812803-2 07/09/22 01:44

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	103	103	80.0-120	
Cadmium	100	98.4	98.4	80.0-120	
Copper	100	98.1	98.1	80.0-120	
Lead	100	97.2	97.2	80.0-120	
Nickel	100	102	102	80.0-120	
Selenium	100	96.5	96.5	80.0-120	
Silver	20.0	16.8	84.2	80.0-120	
Zinc	100	100	100	80.0-120	

L1507241-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507241-05 07/09/22 01:47 • (MS) R3812803-5 07/09/22 01:56 • (MSD) R3812803-6 07/09/22 01:58

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	100	316	438	445	123	129	1	75.0-125		J5	1.54	20
Cadmium	100	0.535	111	102	110	102	1	75.0-125			8.00	20
Copper	100	39.7	154	143	114	103	1	75.0-125			7.46	20
Lead	100	24.8	131	121	106	96.5	1	75.0-125			7.31	20
Nickel	100	21.9	131	122	109	99.8	1	75.0-125			7.48	20
Selenium	100	ND	111	103	109	102	1	75.0-125			7.00	20
Silver	20.0	ND	17.8	16.6	89.0	83.0	1	75.0-125			6.99	20
Zinc	100	59.3	158	142	99.2	83.0	1	75.0-125			10.8	20

Method Blank (MB)

(MB) R3815649-1 07/15/22 16:17

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) R3815649-2 07/15/22 16:20 • (LCSD) R3815649-3 07/15/22 16:23

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	0.986	1.01	98.6	101	80.0-120			2.12	20

Method Blank (MB)

(MB) R3809750-1 06/30/22 16:54

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) R3809750-2 06/30/22 16:57

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

L1507241-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507241-05 06/30/22 17:01 • (MS) R3809750-5 06/30/22 17:11 • (MSD) R3809750-6 06/30/22 17:14

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	44.6	151	135	106	90.3	5	75.0-125			11.0	20

Method Blank (MB)

(MB) R3810610-2 07/01/22 18:00

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*94.3*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3810610-1 07/01/22 16:28

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.55	101	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*101*	*77.0-120*	

Method Blank (MB)

(MB) R3809476-1 06/30/22 06:27

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	0.316	J	0.274	4.00
(S) o-Terphenyl	*61.1*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3809476-2 06/30/22 06:41

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	32.5	65.0	50.0-150	
(S) o-Terphenyl			*61.3*	*18.0-148*	

L1507339-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507339-05 06/30/22 14:10 • (MS) R3809476-3 06/30/22 14:24 • (MSD) R3809476-4 06/30/22 14:38

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	50.0	ND	25.1	31.8	50.2	63.6	1	50.0-150		J3	23.6	20
(S) o-Terphenyl					*43.1*	*50.3*		*18.0-148*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
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.

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

F239

ALL BOLD OUTLINED AREAS are for LAB USE ONLY

Company: Caerus Oil and Gas LLC	Billing Information: Info on file
Address: Info on file	
Report To: Jake Janicek, Brett Middleton, Blair Rollins	Email To: info on file
Copy To: Chris McKisson, remediation@confluence-cc.com	Site Collection Info/Address:
Customer Project Name/Number: J14 496 Background	State: CO / County/City: Garfield / Time Zone Collected: [ ]PT [X]MT [ ]CT [ ]ET
Phone: / Email:	Site/Facility ID #: J14 496 / Compliance Monitoring? [ ] Yes [X] No
Collected By (print): Andrew Smith	Purchase Order # : / Quote #: / DW PWS ID #: / DW Location Code:
Collected By (signature): A Smith	Turnaround Date Required: Standard 5-day / Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: ____ [ ] Hold: ____	Rush: (Expedite Charges Apply) [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day / Field Filtered (if applicable): [ ] Yes [ ] No / Analysis: ____

Container Preservative Type **

** 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:

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

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Container Type: Plastic (P) or Glass (G)	Table 915-1 VOCs	TPH (ORO, GRO, DRO)	Table 915-1 Metal's	Table 915-1 PAHs	pH, EC, SAR, Arsenic	Boron (Hot Water Soluble Soil)					Lab Sample # / Comments
20220620-J14_496-BGE(1510)@20'	SL	G	6/20/2022	1510				1	P		X	X		X	X					L1507638 -01

Analyses

Lab Profile/Line:

Lab Sample Receipt Checklist:

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

LAB USE ONLY:

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

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

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

Lab Tracking #: 5755 8084 8503

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: 0.6 oC

Cooler 1 Therm Corr. Factor: 0.0 oC

Cooler 1 Corrected Temp: 0.6 oC

Comments: DRY

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
A Smith	06/21/22 1200		6/21 1200
	6/21 1700		
			6/22/22 900

MTJL LAB USE ONLY

Table #:

Acctnum:

Template:

Prelogin:

PM:

PB:

Trip Blank Received: Y N NA

HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: ____ of: ____

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

December 03, 2020

Caerus Oil and Gas

Sample Delivery Group:	L1288879
Samples Received:	11/21/2020
Project Number:	J14-496
Description:	J14-496
Site:	J14-496
Report To:	Jake Janicek 143 Diamond Avenue Parachute, CO 81635

Entire Report Reviewed By: Chris Ward

Chris Ward
Project Manager

TABLE OF CONTENTS

2020119-J14-496 (BG01) L1288879-01 Solid

Collected by: Evan Mason | Collected date/time: 11/19/20 11:00 | Received date/time: 11/21/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1583854	1	12/02/20 16:53	12/02/20 16:53	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1583386	1	11/29/20 12:38	11/30/20 12:20	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1584820	1	12/01/20 18:34	12/01/20 20:02	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1584860	1	12/01/20 14:18	12/02/20 14:00	JRB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1583982	1	11/30/20 07:58	12/02/20 15:47	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1583983	5	11/30/20 07:59	11/30/20 19:28	LD	Mt. Juliet, TN

2020119-J14-496 (BG02) L1288879-02 Solid

Collected by: Evan Mason | Collected date/time: 11/19/20 11:10 | Received date/time: 11/21/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1583854	1	12/02/20 16:56	12/02/20 16:56	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1583386	1	11/29/20 12:38	11/30/20 12:22	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1584820	1	12/01/20 18:34	12/01/20 20:02	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1584289	1	11/30/20 15:27	12/01/20 14:00	JRB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1583982	1	11/30/20 07:58	12/02/20 16:02	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1583983	5	11/30/20 07:59	11/30/20 19:45	LD	Mt. Juliet, TN

2020119-J14-496 (BG03) L1288879-03 Solid

Collected by: Evan Mason | Collected date/time: 11/19/20 11:20 | Received date/time: 11/21/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1583854	1	12/02/20 16:59	12/02/20 16:59	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1583386	1	11/29/20 12:38	11/30/20 12:22	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1584820	1	12/01/20 18:34	12/01/20 20:02	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1584289	1	11/30/20 15:27	12/01/20 14:00	JRB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1583982	1	11/30/20 07:58	12/02/20 16:05	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1583983	5	11/30/20 07:59	11/30/20 19:48	LD	Mt. Juliet, TN

2020119-J14-496 (BG04) L1288879-04 Solid

Collected by: Evan Mason | Collected date/time: 11/19/20 11:30 | Received date/time: 11/21/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1583854	1	12/02/20 17:01	12/02/20 17:01	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1583386	1	11/29/20 12:38	11/30/20 12:23	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1584820	1	12/01/20 18:34	12/01/20 20:02	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1584289	1	11/30/20 15:27	12/01/20 14:00	JRB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1583982	1	11/30/20 07:58	12/02/20 16:08	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1583983	5	11/30/20 07:59	11/30/20 19:51	LD	Mt. Juliet, TN

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

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

Chris Ward
Project Manager

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.639		1	12/02/2020 16:53	WG1583854

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	ND		2.00	1	11/30/2020 12:20	WG1583386

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.74	T8	1	12/01/2020 20:02	WG1584820

Sample Narrative:

L1288879-01 WG1584820: 8.74 at 23C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	110		10.0	1	12/02/2020 14:00	WG1584860

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Boron	ND		10.0	1	12/02/2020 15:47	WG1583982

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.31		1.00	5	11/30/2020 19:28	WG1583983

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.36		1	12/02/2020 16:56	WG1583854

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	ND		2.00	1	11/30/2020 12:22	WG1583386

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.81	T8	1	12/01/2020 20:02	WG1584820

Sample Narrative:

L1288879-02 WG1584820: 8.81 at 21.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	268		10.0	1	12/01/2020 14:00	WG1584289

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Boron	ND		10.0	1	12/02/2020 16:02	WG1583982

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.41		1.00	5	11/30/2020 19:45	WG1583983

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.84		1	12/02/2020 16:59	WG1583854

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	ND		2.00	1	11/30/2020 12:22	WG1583386

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.59	T8	1	12/01/2020 20:02	WG1584820

Sample Narrative:

L1288879-03 WG1584820: 8.59 at 21.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	289		10.0	1	12/01/2020 14:00	WG1584289

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Boron	ND		10.0	1	12/02/2020 16:05	WG1583982

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.62		1.00	5	11/30/2020 19:48	WG1583983

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.63		1	12/02/2020 17:01	WG1583854

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	ND		2.00	1	11/30/2020 12:23	WG1583386

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.49	T8	1	12/01/2020 20:02	WG1584820

Sample Narrative:

L1288879-04 WG1584820: 8.49 at 20.8C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	500		10.0	1	12/01/2020 14:00	WG1584289

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Boron	ND		10.0	1	12/02/2020 16:08	WG1583982

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.45		1.00	5	11/30/2020 19:51	WG1583983

Method Blank (MB)

(MB) R3598475-1 11/30/20 12:16

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chromium,Hexavalent	U		0.640	2.00

L1288377-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1288377-01 11/30/20 12:16 • (DUP) R3598475-3 11/30/20 12:16

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

L1288875-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1288875-01 11/30/20 12:20 • (DUP) R3598475-4 11/30/20 12:20

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

Laboratory Control Sample (LCS)

(LCS) R3598475-2 11/30/20 12:16

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chromium,Hexavalent	24.0	22.6	94.0	80.0-120	

L1290336-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1290336-01 11/30/20 12:23 • (MS) R3598475-5 11/30/20 12:23 • (MSD) R3598475-6 11/30/20 12:23

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chromium,Hexavalent	20.0	ND	ND	ND	0.000	0.000	1	75.0-125	J6	J6	0.000	20

L1289541-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1289541-01 12/01/20 20:02 • (DUP) R3599213-2 12/01/20 20:02

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	10.2	10.2	1	0.295		1

Sample Narrative:

OS: 10.19 at 20.8C

DUP: 10.16 at 19.9C

Laboratory Control Sample (LCS)

(LCS) R3599213-1 12/01/20 20:02

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: 10.04 at 19.1C

Method Blank (MB)

(MB) R3599054-1 12/01/20 14:00

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

L1288377-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1288377-02 12/01/20 14:00 • (DUP) R3599054-3 12/01/20 14:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	226	225	1	0.443		20

L1288879-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1288879-03 12/01/20 14:00 • (DUP) R3599054-4 12/01/20 14:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	289	290	1	0.104		20

Laboratory Control Sample (LCS)

(LCS) R3599054-2 12/01/20 14:00

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	483	481	99.6	85.0-115	

Method Blank (MB)

(MB) R3599629-1 12/02/20 14:00

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

L1288535-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1288535-05 12/02/20 14:00 • (DUP) R3599629-3 12/02/20 14:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	umhos/cm	umhos/cm		%		%
Specific Conductance	537	529	1	1.50		20

Laboratory Control Sample (LCS)

(LCS) R3599629-2 12/02/20 14:00

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	umhos/cm	umhos/cm	%	%	
Specific Conductance	483	483	100	85.0-115	

Method Blank (MB)

(MB) R3599765-1 12/02/20 15:41

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Boron	U		1.67	10.0

Laboratory Control Sample (LCS)

(LCS) R3599765-2 12/02/20 15:44

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	100	98.6	98.6	80.0-120	

L1288879-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1288879-01 12/02/20 15:47 • (MS) R3599765-5 12/02/20 15:55 • (MSD) R3599765-6 12/02/20 15:58

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 %
Boron	100	ND	96.0	87.6	96.0	87.6	1	75.0-125			9.07	20

Method Blank (MB)

(MB) R3598762-1 11/30/20 19:21

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) R3598762-2 11/30/20 19:25

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	96.0	96.0	80.0-120	

L1288879-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1288879-01 11/30/20 19:28 • (MS) R3598762-5 11/30/20 19:38 • (MSD) R3598762-6 11/30/20 19:41

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	20.0	3.31	96.4	87.6	93.1	84.3	5	75.0-125			9.56	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
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.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* 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 National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
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	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

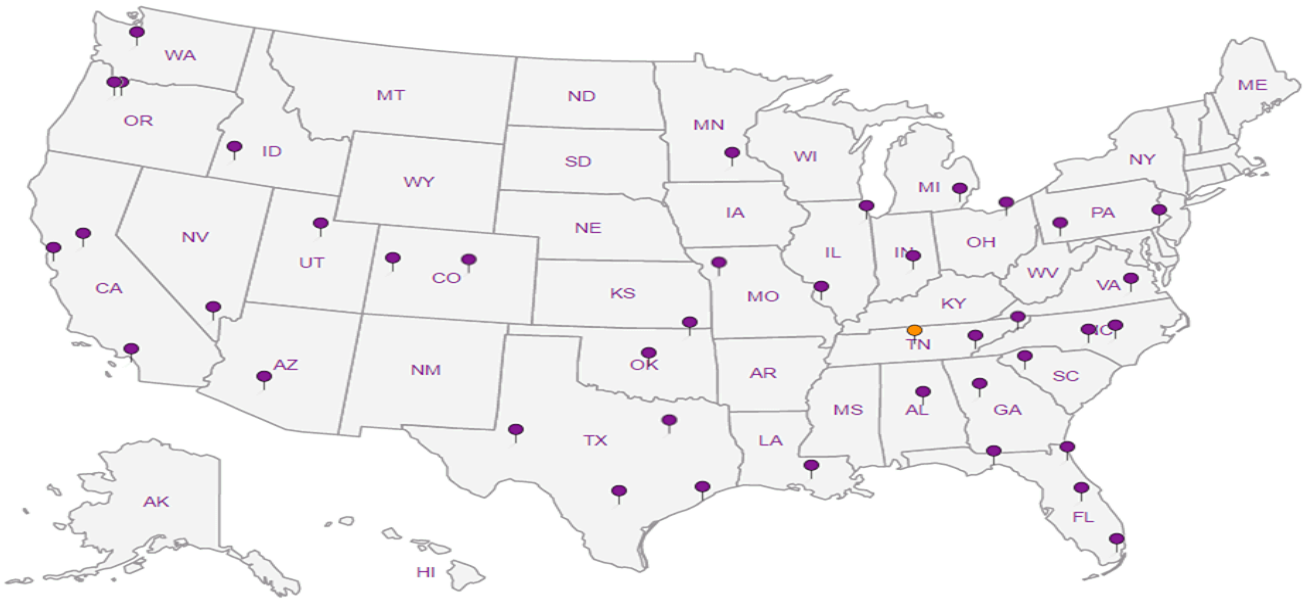
Third Party Federal Accreditations

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

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



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

Billing Information: **Same as above**

Report to: **jjanicek@caerusoilandgas.com**

Email To: **jjanciek@caerusoilandgas.com**

Project Description: **J14 - 496**

City/State Collected: **Piceance, CO**

Phone:
Fax:

Client Project # **J14 - 496**

Lab Project # **J14 - 496**

Collected by (print): Evan Mason

Site/Facility ID # **J14 - 496**

P.O. # **J14 - 496**

Collected by (signature):

Immediately Packed on Ice N ___ Y X

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

Quote #

Date Results Needed: **Standard TAT**

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Arsenic	Boron	Hexavalent Chromium [Cr(VI)]	SAR, EC, pH	Remarks	Sample # (lab only)
20201119-J14-496(BG01)@8'	Grab	SS	8'	11/19/20	1100	2	X	X	X	X		01
20201119-J14-496(BG02)@8'	"	"	8'	"	1110	2	X	X	X	X		02
20201119-J14-496(BG03)@8'	"	"	8'	"	1120	2	X	X	X	X		03
20201119-J14-496(BG04)@8'	"	"	8'	"	1130	2	X	X	X	X		04

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 # L289879

C080

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

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

Remarks:

pH _____ Temp _____
Flow _____ Other _____

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

Tracking #

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
	11/20/20	1300		
Relinquished by : (Signature)	Date: 11/20/20	Time: 1700	Received by: (Signature)	Temp: 0.8+1=1.7 Bottles Received: 8
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 11/21/20 Time: 9:00

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK