August 21, 2024

Jake Janicek
EHS Specialist
Caerus Oil and Gas LLC (Operator: 10456)
jjanicek@caerusoilandgas.com

Report of Work Completed – J14 496 (23B-14) Flowline Release

ECMC Location Name (ID)	ELU J14/FED-496 PAD (467272)
Operator Location Name	J14 496 (23B-14)
Spill/Release Point ID	487210
Legal Description	NESW Sec. 14 T4S-R96W
Coordinates (Lat/Long)	39.700811 / -108.136767
County	Rio Blanco County, Colorado

Mr. Janicek,

Confluence Compliance Companies, LLC (Confluence) prepared this Report of Work Completed (ROWC) for Caerus Oil and 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 June 29, 2024, Caerus discovered an underground flowline leak at the ELU J14 FED #23B-14-496 wellhead (API: 05-103-12374). The well was immediately shut-in and the release was reported via Energy & Carbon Management Commission (ECMC) Form 19 Document 403840754 to open Spill/Release Point ID 487210.

Methodology

On July 15, 2024, Confluence provided initial sampling support to characterize potential soil impacts at the point of release (POR). Prior to investigative activities, the flowline was trenched and the POR was exposed. Using hand tools, six soil samples were collected: one from directly beneath the POR at 4 feet below ground surface (bgs), one from the base of the excavation at 3 feet bgs, and four from the sidewalls of the excavation at 2 to 4 feet bgs. 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 jars, immediately placed on ice, shipped under a completed chain-of-custody form to Pace Analytical Services (Pace), and analyzed for ECMC Table 915-1 soil constituents of concern.

Results

These results summarize observations from onsite 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. Collected spatial data are depicted in the attached Site Diagrams. Laboratory reports are attached and summarized in the Analytical Results Summary Tables.

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-MH, located 0.12 miles north of the Location, lists a depth to water at 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 PID measurements ranging from 3.1 parts per million (ppm) at the south sidewall to 462.2 ppm at the north sidewall. Analytical results of initial characterization soil samples are compliant with ECMC Table 915-1 Residential Soil Screening Levels (RSSLs) except for total petroleum hydrocarbons (TPH), electrical conductivity (EC), sodium adsorption ratio (SAR), arsenic, and hexavalent chromium. TPH exceeds at the POR, the north sidewall, and the east sidewall with concentrations of 640, 592, and 1,052 milligrams per kilogram (mg/kg), respectively. Exceedances of EC were noted at the POR, the north sidewall, and the east sidewall with values of 8.300, 21.800, and 4.260 millimhos per centimeter (mmhos/cm), respectively. SAR exceedances of 15.5 and 20.5 were detected at the POR and in the north sidewall, respectively. Arsenic exceedances were observed in all samples and range from 2.9 to 4.7 mg/kg, and hexavalent chromium exceedances were noted in all samples except for the POR and range from 0.317 to 0.968 mg/kg.

Analysis and Recommendations

Based on the estimated depth to groundwater at greater than 100 feet bgs, Confluence recommends Caerus request to compare results of release investigation to Table 915-1 RSSLs as no reasonable pathway to groundwater appears to exist.

Historical soil sample data collected immediately adjacent to the Location indicates native background levels of arsenic consistently above allowable limits in native soil. According to the National Resource Conservation Service (NRCS), both the release investigation area and all collected background samples are located within the Starman-Vandamore complex soil classification. Analytical results of background samples indicate native arsenic values ranging from 2.67 to 5.84 mg/kg. The background soil boring 20220620-J14_496BGE is located approximately 20 feet higher in elevation than the release investigation area and included sample intervals from 10 to 40 feet bgs. Based on relative elevation, soil type, and laboratory analytical results, it is reasonable to conclude background samples are representative of soil conditions at the Location. Confluence recommends Caerus request an alternative allowable limit for arsenic of 5.84 mg/kg in accordance with Table 915-1 Footnote 1.

Although hexavalent chromium concentrations exceeding ECMC Table 915-1 RSSLs are present in the investigation area, the reported concentrations are between the laboratory Method Detection Limit

(MDL) of 0.255 mg/kg and the Reported Detection Limit (RDL) of 1.0 mg/kg. Analytical results between the MDL and RDL are considered estimated values due to equipment capabilities. Based on this limitation of laboratory analysis and reporting, Confluence recommends Caerus request consideration of Table 915-1 Footnote 9 to substitute the RDL of 1.0 mg/kg as an alternative screening level for hexavalent chromium.

Assuming the proposed screening levels and alternative allowable limits are accepted, TPH, EC, and SAR remain undelineated in the investigation area. TPH and EC remain undelineated vertically and horizontally to the north and east. SAR remains undelineated vertically and horizontally to the north. Based on these results, Confluence recommends additional site investigation to delineate the extent of identified soil impacts. Prior to additional sampling, Confluence recommends Caerus request a reduced analyte suite of TPH, EC, and SAR.

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

Regards,

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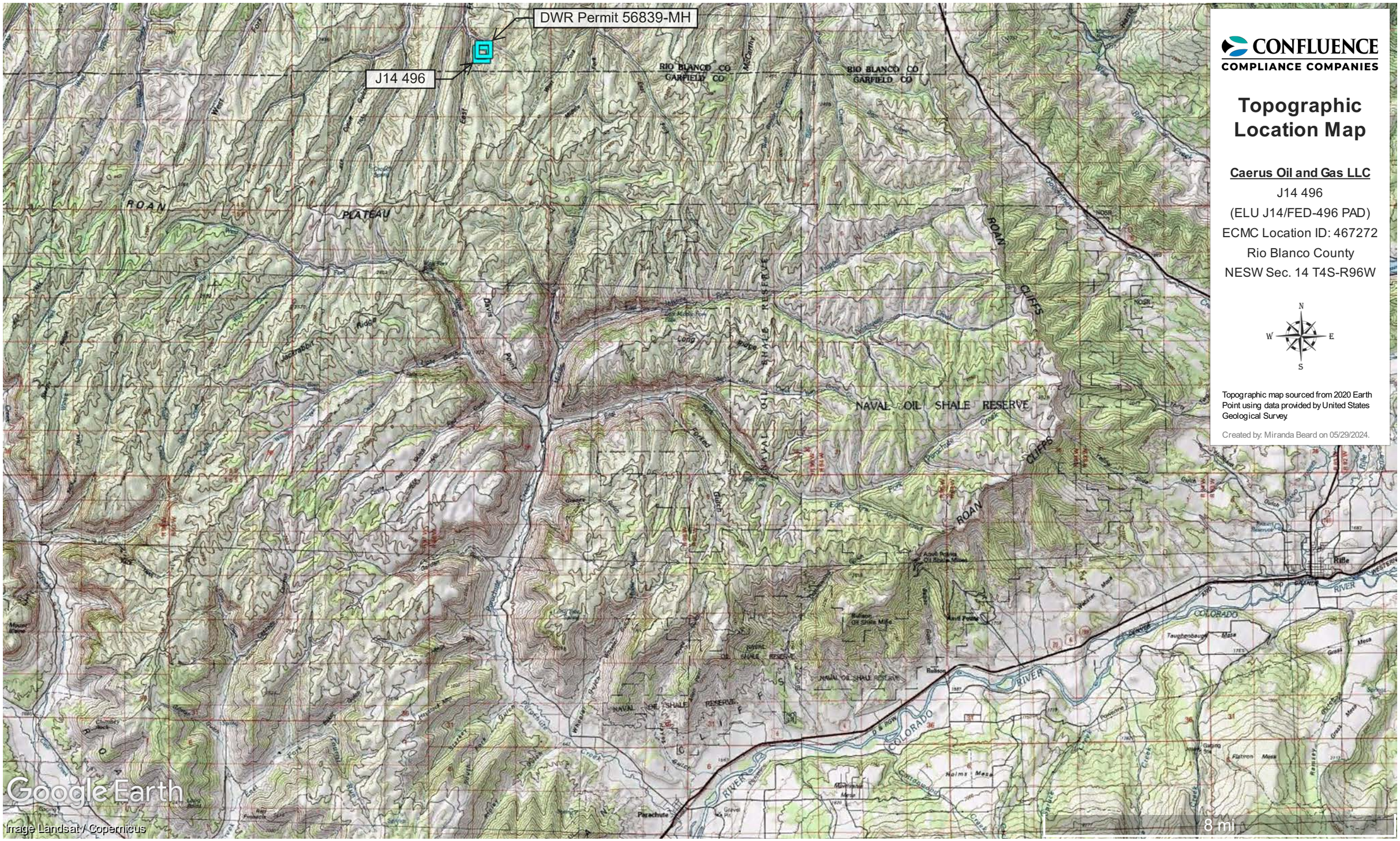
Attachments

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



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Topographic Location Map

Caerus Oil and Gas LLC

J14 496

(ELU J14/FED-496 PAD)

ECMC Location ID: 467272

Rio Blanco County

NESW 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: Miranda Beard on 05/29/2024.

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Site Diagram
Initial Investigation

Caerus Oil and Gas LLC
J14 496 (23B-14)
(ELU J14/FED-496 PAD)
ECMC Location ID: 467272
Rio Blanco County
NESW Sec. 14 T4S-R96W

N
W E
S

Legend

- Soil Sample
- Excavation Extent

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: Miranda Beard on 07/17/2024.

CONFLUENCE
COMPLIANCE COMPANIES

Site Diagram
Background Samples

Caerus Oil and Gas LLC
J14 496 (23B-14)
(ELU J14/FED-496 PAD)
ECMC Location ID: 467272
Rio Blanco County
NESW Sec. 14 T4S-R96W

N
W E
S

Legend

- Background Soil Sample
- Excavation Extent – 07/15/2024

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

Map created by: Amanda Baca on 08/19/2024.

CONFLUENCE

Laboratory Results Summary Table - Soil
J14 496 (23B-14)

8/16/2024

ECMC Soil Screening Levels					Organic Compounds (mg/kg [ppm])																										
ECMC Table 915-1 Residential -->				NA	500	NA	NA	NA	1.2	490	5.8	58	30	27	360	1800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	18	24	2	180
Sample Date	Solid/Soil Source (Equipment) [Vault/Sump, Separator, Tank Battery, Dump Line, Pit, Cuttings, Background, etc.]	Depth - Z (feet) (NEGATIVE VALUE) below ground surface (bgs)	Sample ID	PID (ppm)	TPH (total volatile and extractable petroleum hydrocarbons) (GRO+DRO+ORO)	TPH-GRO (C6-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
7/15/2024	Flowline	-4	20240715-ELU J14 496-(23B-14-POR)@4	60.1	640	0.149	248	392	0.000825	0.00423	0.00100	0.0132	0.00510	0.00807	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	0.0218	0.0503	0.0137	<0.00600
7/15/2024	Flowline	-3	20240715-ELU J14 496-(23B-14-BASE)@3	3.2	33.0	<0.100	10.4	22.6	<0.00100	<0.00500	<0.00250	0.00468	0.00228	<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	0.00560	<0.0200	<0.00600
7/15/2024	Flowline	-4	20240715-ELU J14 496-(23B-14-NW)@4	462.2	592	1.39	261	330	0.00659	0.00603	0.00237	0.0695	0.0564	0.772	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	0.00716	<0.00600	0.00328	<0.00600	<0.00600	0.113	0.149	0.0425	0.0159
7/15/2024	Flowline	-2	20240715-ELU J14 496-(23B-14-SW)@2	3.1	25.6	0.0506	6.71	18.8	<0.00100	<0.00500	<0.00250	0.00222	0.00197	<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	0.00831	<0.0200	<0.00600
7/15/2024	Flowline	-3.5	20240715-ELU J14 496-(23B-14-EW)@3.5	10.1	1052	0.727	371	680	0.00140	0.00270	0.00160	0.0200	0.00765	0.0151	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	0.238	0.700	0.225	0.0187
7/15/2024	Flowline	-2.5	20240715-ELU J14 496-(23B-14-WW)@2.5	4.6	70.8	0.0458	29.7	41.1	<0.00100	<0.00500	<0.00250	0.00393	0.00228	0.00210	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	0.0295	<0.00600	0.0396	0.113	0.0207	<0.00600

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

CONFLUENCE

Laboratory Results Summary Table - Soil
J14 496 (23B-14)

8/16/2024

ECMC Soil Screening Levels					Soil Suitability for Reclamation				Metals (mg/kg [ppm])									
ECMC 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
7/15/2024	Flowline	-4	**20240715-ELU J14 496-(23B-14-POR)@4**	**60.1**	**8.300**	**15.5**	**7.30**	**1.1**	**4.3**	**1760**	**0.24**	**0.292**	**19.5**	**11.4**	**14.1**	*<0.46*	*<0.46*	**54.4**
7/15/2024	Flowline	-3	**20240715-ELU J14 496-(23B-14-BASE)@3**	**3.2**	**0.885**	**4.0**	**8.08**	*<0.30*	**3.6**	**522**	**0.10**	**0.317**	**8.8**	**6.5**	**12.5**	*<0.48*	*<0.48*	**32.3**
7/15/2024	Flowline	-4	**20240715-ELU J14 496-(23B-14-NW)@4**	**462.2**	**21.800**	**20.5**	**7.57**	**1.6**	**3.9**	**8610**	**0.16**	**0.764**	**57.2**	**9.5**	**16.1**	*<0.47*	*<0.47*	**127**
7/15/2024	Flowline	-2	**20240715-ELU J14 496-(23B-14-SW)@2**	**3.1**	**1.050**	**2.9**	**8.06**	*<0.30*	**2.9**	**384**	**0.11**	**0.395**	**8.4**	**6.0**	**11.1**	*<0.46*	*<0.46*	**31.2**
7/15/2024	Flowline	-3.5	**20240715-ELU J14 496-(23B-14-EW)@3.5**	**10.1**	**4.260**	**3.9**	**7.70**	**0.46**	**4.0**	**7910**	**0.23**	**0.968**	**50.2**	**9.9**	**17.6**	*<0.46*	*<0.46*	**133**
7/15/2024	Flowline	-2.5	**20240715-ELU J14 496-(23B-14-WW)@2.5**	**4.6**	**3.940**	**4.7**	**7.71**	**0.40**	**4.7**	**1320**	**0.12**	**0.456**	**13.8**	**10**	**19.1**	*<0.48*	*<0.48*	**79.1**
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	-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	-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**

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

Photographic Log

Initial Release Investigation

J14 496 [23B-14 Flowline Release] (ECMC Location ID: 467272)

J14 496 Pad Overview: Orientation Northwest

J14 496 Pad Overview: Orientation Southwest

J14 496 Pad Overview: Orientation Northwest

J14 496 Pad Overview: Orientation East

J14 496 Pad Overview: Orientation West

J14 496 (23B-14) Flowline Release Excavation Overview: Orientation North

J14 496 (23B-14) Flowline Release Excavation Overview: View North

J14 496 (23B-14) Flowline Release Excavation Overview: View Northwest

POR@4 Sample Location

NW@4 Sample Location

EW@3.5 Sample Location

WW@2.5 Sample Location

BASE@4 Sample Location: View North

SW@2 Sample Location: View Southwest

ANALYTICAL REPORT

August 13, 2024

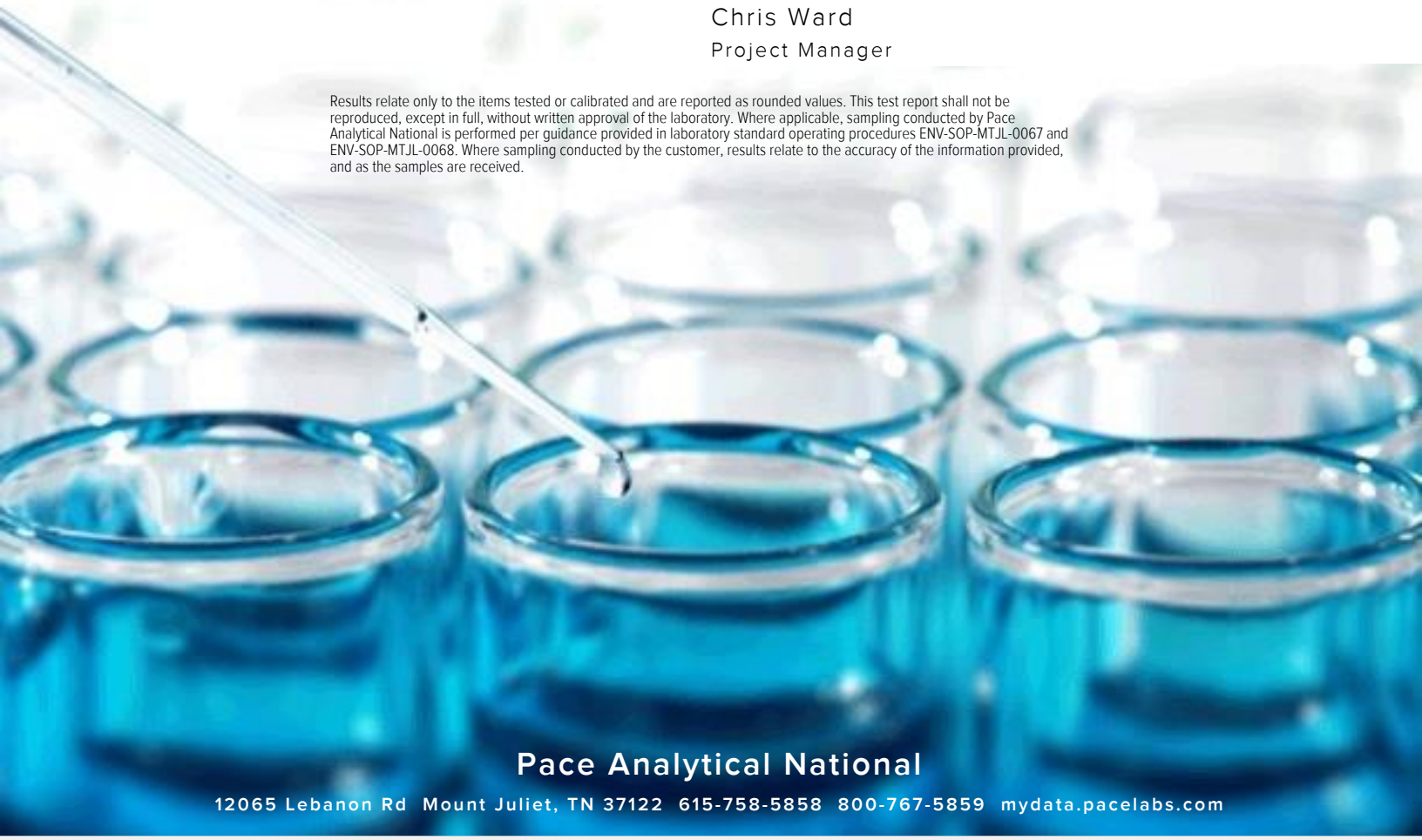
1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Caerus Oil and Gas

Sample Delivery Group:	L1757520
Samples Received:	07/17/2024
Project Number:	
Description:	J14-496 238-14 Flowline Release
Site:	J14-496
Report To:	Jake J. / Brett M. / Blair R. / Andy V. 143 Diamond Avenue Parachute, CO 81635

Entire Report Reviewed By: Chris Ward

Chris Ward
Project Manager



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

TABLE OF CONTENTS

20240715-ELU J14 496-(23B-14-POR)@4 L1757520-01 Solid

Collected by: Olivia Floyd | Collected date/time: 07/15/24 10:15 | Received date/time: 07/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 7199	WG2325683	1	07/26/24 00:08	07/26/24 14:48	EKB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2328388	1	07/21/24 21:44	07/23/24 17:27	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2327819	1	07/21/24 21:44	07/23/24 05:19	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2329372	1	07/24/24 17:19	07/24/24 22:53	JAS	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2329372	5	07/24/24 17:19	07/25/24 01:46	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2328846	1	07/24/24 11:36	07/24/24 21:48	MKM	Mt. Juliet, TN
Subcontracted Analyses	WG2325486	1	08/13/24 00:00	08/13/24 00:00	-	Minneapolis, MN 55414

20240715-ELU J14 496-(23B-14-BASE)@3 L1757520-02 Solid

Collected by: Olivia Floyd | Collected date/time: 07/15/24 10:40 | Received date/time: 07/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 7199	WG2325683	1	07/26/24 00:08	07/26/24 14:57	EKB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2328388	1	07/21/24 21:44	07/23/24 17:49	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2327819	1	07/21/24 21:44	07/23/24 05:38	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2329372	1	07/24/24 17:19	07/24/24 22:28	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2328846	1	07/24/24 11:36	07/24/24 22:05	MKM	Mt. Juliet, TN
Subcontracted Analyses	WG2325486	1	08/13/24 00:00	08/13/24 00:00	-	Minneapolis, MN 55414

20240715-ELU J14 496-(23B-14-NW)@4 L1757520-03 Solid

Collected by: Olivia Floyd | Collected date/time: 07/15/24 10:05 | Received date/time: 07/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 7199	WG2325683	1	07/26/24 00:08	07/26/24 15:06	EKB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2328388	1	07/21/24 21:44	07/23/24 18:16	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2327819	1.01	07/21/24 21:44	07/23/24 05:57	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2329372	1	07/24/24 17:19	07/24/24 22:40	JAS	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2329372	5	07/24/24 17:19	07/25/24 01:34	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2328846	1	07/24/24 11:36	07/24/24 21:13	MKM	Mt. Juliet, TN
Subcontracted Analyses	WG2325486	1	08/13/24 00:00	08/13/24 00:00	-	Minneapolis, MN 55414

20240715-ELU J14 496-(23B-14-SW)@2 L1757520-04 Solid

Collected by: Olivia Floyd | Collected date/time: 07/15/24 10:35 | Received date/time: 07/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 7199	WG2325683	1	07/26/24 00:08	07/26/24 15:32	EKB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2328388	1	07/21/24 21:44	07/23/24 18:48	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2327819	1	07/21/24 21:44	07/23/24 06:16	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2329372	1	07/24/24 17:19	07/25/24 00:07	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2328846	1	07/24/24 11:36	07/24/24 22:57	MKM	Mt. Juliet, TN
Subcontracted Analyses	WG2325486	1	08/13/24 00:00	08/13/24 00:00	-	Minneapolis, MN 55414

20240715-ELU J14 496-(23B-14-EW)@3.5 L1757520-05 Solid

Collected by: Olivia Floyd | Collected date/time: 07/15/24 10:20 | Received date/time: 07/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 7199	WG2325683	1	07/26/24 00:08	07/26/24 15:41	EKB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2328388	1	07/21/24 21:44	07/23/24 19:09	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2327819	1	07/21/24 21:44	07/23/24 06:35	ACG	Mt. Juliet, TN

20240715-ELU J14 496-(23B-14-EW)@3.5 L1757520-05 Solid

Collected by: Olivia Floyd
Collected date/time: 07/15/24 10:20
Received date/time: 07/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2329372	5	07/24/24 17:19	07/24/24 23:42	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2328846	1	07/24/24 11:36	07/24/24 23:48	MKM	Mt. Juliet, TN
Subcontracted Analyses	WG2325486	1	08/13/24 00:00	08/13/24 00:00	-	Minneapolis, MN 55414

20240715-ELU J14 496-(23B-14-WW)@2.5 L1757520-06 Solid

Collected by: Olivia Floyd
Collected date/time: 07/15/24 10:30
Received date/time: 07/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 7199	WG2326501	1	07/26/24 00:14	07/26/24 11:37	EKB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2328388	1	07/21/24 21:44	07/23/24 19:30	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2327819	1	07/21/24 21:44	07/23/24 06:54	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2329372	1	07/24/24 17:19	07/24/24 22:03	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2328846	1	07/24/24 11:36	07/24/24 21:31	MKM	Mt. Juliet, TN
Subcontracted Analyses	WG2325486	1	08/13/24 00:00	08/13/24 00:00	-	Minneapolis, MN 55414

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

Project Narrative

L1757520 -01, -02, -03, -04, -05, -06 contains subout data that is included after the chain of custody.

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.292	J	0.255	1.00	1	07/26/2024 14:48	WG2325683

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	0.149	B	0.0217	0.100	1	07/23/2024 17:27	WG2328388
(S) a,a,a-Trifluorotoluene(FID)	*102*			*77.0-120*		*07/23/2024 17:27*	WG2328388

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	0.000825	J	0.000467	0.00100	1	07/23/2024 05:19	WG2327819
Toluene	0.00423	J	0.00130	0.00500	1	07/23/2024 05:19	WG2327819
Ethylbenzene	0.00100	J	0.000737	0.00250	1	07/23/2024 05:19	WG2327819
Xylenes, Total	0.0132		0.000880	0.00650	1	07/23/2024 05:19	WG2327819
1,2,4-Trimethylbenzene	0.00510		0.00158	0.00500	1	07/23/2024 05:19	WG2327819
1,3,5-Trimethylbenzene	0.00807		0.00200	0.00500	1	07/23/2024 05:19	WG2327819
(S) Toluene-d8	*104*			*75.0-131*		*07/23/2024 05:19*	WG2327819
(S) 4-Bromofluorobenzene	*105*			*67.0-138*		*07/23/2024 05:19*	WG2327819
(S) 1,2-Dichloroethane-d4	*91.4*			*70.0-130*		*07/23/2024 05:19*	WG2327819

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	248		1.61	4.00	1	07/24/2024 22:53	WG2329372
C28-C36 Motor Oil Range	392		1.37	20.0	5	07/25/2024 01:46	WG2329372
(S) o-Terphenyl	*51.6*			*18.0-148*		*07/24/2024 22:53*	WG2329372
(S) o-Terphenyl	*52.5*			*18.0-148*		*07/25/2024 01:46*	WG2329372

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	07/24/2024 21:48	WG2328846
Anthracene	U		0.00230	0.00600	1	07/24/2024 21:48	WG2328846
Benzo(a)anthracene	U		0.00173	0.00600	1	07/24/2024 21:48	WG2328846
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/24/2024 21:48	WG2328846
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/24/2024 21:48	WG2328846
Benzo(a)pyrene	U		0.00179	0.00600	1	07/24/2024 21:48	WG2328846
Chrysene	U		0.00232	0.00600	1	07/24/2024 21:48	WG2328846
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/24/2024 21:48	WG2328846
Fluoranthene	U		0.00227	0.00600	1	07/24/2024 21:48	WG2328846
Fluorene	U		0.00205	0.00600	1	07/24/2024 21:48	WG2328846
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/24/2024 21:48	WG2328846
1-Methylnaphthalene	0.0218		0.00449	0.0200	1	07/24/2024 21:48	WG2328846
2-Methylnaphthalene	0.0503		0.00427	0.0200	1	07/24/2024 21:48	WG2328846
Naphthalene	0.0137	J	0.00408	0.0200	1	07/24/2024 21:48	WG2328846
Pyrene	U		0.00200	0.00600	1	07/24/2024 21:48	WG2328846
(S) p-Terphenyl-d14	*72.1*			*23.0-120*		*07/24/2024 21:48*	WG2328846
(S) Nitrobenzene-d5	*88.4*			*14.0-149*		*07/24/2024 21:48*	WG2328846
(S) 2-Fluorobiphenyl	*71.1*			*34.0-125*		*07/24/2024 21:48*	WG2328846

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.317	J	0.255	1.00	1	07/26/2024 14:57	WG2325683

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	07/23/2024 17:49	WG2328388
(S) a,a,a-Trifluorotoluene(FID)	*100*			*77.0-120*		*07/23/2024 17:49*	WG2328388

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	07/23/2024 05:38	WG2327819
Toluene	U		0.00130	0.00500	1	07/23/2024 05:38	WG2327819
Ethylbenzene	U		0.000737	0.00250	1	07/23/2024 05:38	WG2327819
Xylenes, Total	0.00468	J	0.000880	0.00650	1	07/23/2024 05:38	WG2327819
1,2,4-Trimethylbenzene	0.00228	J	0.00158	0.00500	1	07/23/2024 05:38	WG2327819
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/23/2024 05:38	WG2327819
(S) Toluene-d8	*104*			*75.0-131*		*07/23/2024 05:38*	WG2327819
(S) 4-Bromofluorobenzene	*104*			*67.0-138*		*07/23/2024 05:38*	WG2327819
(S) 1,2-Dichloroethane-d4	*89.5*			*70.0-130*		*07/23/2024 05:38*	WG2327819

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	10.4		1.61	4.00	1	07/24/2024 22:28	WG2329372
C28-C36 Motor Oil Range	22.6		0.274	4.00	1	07/24/2024 22:28	WG2329372
(S) o-Terphenyl	*63.9*			*18.0-148*		*07/24/2024 22:28*	WG2329372

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	07/24/2024 22:05	WG2328846
Anthracene	U		0.00230	0.00600	1	07/24/2024 22:05	WG2328846
Benzo(a)anthracene	U		0.00173	0.00600	1	07/24/2024 22:05	WG2328846
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/24/2024 22:05	WG2328846
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/24/2024 22:05	WG2328846
Benzo(a)pyrene	U		0.00179	0.00600	1	07/24/2024 22:05	WG2328846
Chrysene	U		0.00232	0.00600	1	07/24/2024 22:05	WG2328846
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/24/2024 22:05	WG2328846
Fluoranthene	U		0.00227	0.00600	1	07/24/2024 22:05	WG2328846
Fluorene	U		0.00205	0.00600	1	07/24/2024 22:05	WG2328846
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/24/2024 22:05	WG2328846
1-Methylnaphthalene	U		0.00449	0.0200	1	07/24/2024 22:05	WG2328846
2-Methylnaphthalene	0.00560	J	0.00427	0.0200	1	07/24/2024 22:05	WG2328846
Naphthalene	U		0.00408	0.0200	1	07/24/2024 22:05	WG2328846
Pyrene	U		0.00200	0.00600	1	07/24/2024 22:05	WG2328846
(S) p-Terphenyl-d14	*53.0*			*23.0-120*		*07/24/2024 22:05*	WG2328846
(S) Nitrobenzene-d5	*61.7*			*14.0-149*		*07/24/2024 22:05*	WG2328846
(S) 2-Fluorobiphenyl	*56.6*			*34.0-125*		*07/24/2024 22:05*	WG2328846

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.764	J	0.255	1.00	1	07/26/2024 15:06	WG2325683

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	1.39		0.0217	0.100	1	07/23/2024 18:16	WG2328388
(S) a,a,a-Trifluorotoluene(FID)	*96.9*			*77.0-120*		*07/23/2024 18:16*	WG2328388

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	0.00659		0.000472	0.00101	1.01	07/23/2024 05:57	WG2327819
Toluene	0.00603		0.00131	0.00505	1.01	07/23/2024 05:57	WG2327819
Ethylbenzene	0.00237	J	0.000744	0.00253	1.01	07/23/2024 05:57	WG2327819
Xylenes, Total	0.0695		0.000889	0.00656	1.01	07/23/2024 05:57	WG2327819
1,2,4-Trimethylbenzene	0.0564		0.00160	0.00505	1.01	07/23/2024 05:57	WG2327819
1,3,5-Trimethylbenzene	0.772		0.00202	0.00505	1.01	07/23/2024 05:57	WG2327819
(S) Toluene-d8	*103*			*75.0-131*		*07/23/2024 05:57*	WG2327819
(S) 4-Bromofluorobenzene	*113*			*67.0-138*		*07/23/2024 05:57*	WG2327819
(S) 1,2-Dichloroethane-d4	*91.3*			*70.0-130*		*07/23/2024 05:57*	WG2327819

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	261		1.61	4.00	1	07/24/2024 22:40	WG2329372
C28-C36 Motor Oil Range	330		1.37	20.0	5	07/25/2024 01:34	WG2329372
(S) o-Terphenyl	*49.7*			*18.0-148*		*07/24/2024 22:40*	WG2329372
(S) o-Terphenyl	*58.7*			*18.0-148*		*07/25/2024 01:34*	WG2329372

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	07/24/2024 21:13	WG2328846
Anthracene	U		0.00230	0.00600	1	07/24/2024 21:13	WG2328846
Benzo(a)anthracene	U		0.00173	0.00600	1	07/24/2024 21:13	WG2328846
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/24/2024 21:13	WG2328846
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/24/2024 21:13	WG2328846
Benzo(a)pyrene	U		0.00179	0.00600	1	07/24/2024 21:13	WG2328846
Chrysene	0.00716		0.00232	0.00600	1	07/24/2024 21:13	WG2328846
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/24/2024 21:13	WG2328846
Fluoranthene	0.00328	J	0.00227	0.00600	1	07/24/2024 21:13	WG2328846
Fluorene	U		0.00205	0.00600	1	07/24/2024 21:13	WG2328846
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/24/2024 21:13	WG2328846
1-Methylnaphthalene	0.113		0.00449	0.0200	1	07/24/2024 21:13	WG2328846
2-Methylnaphthalene	0.149		0.00427	0.0200	1	07/24/2024 21:13	WG2328846
Naphthalene	0.0425		0.00408	0.0200	1	07/24/2024 21:13	WG2328846
Pyrene	0.0159		0.00200	0.00600	1	07/24/2024 21:13	WG2328846
(S) p-Terphenyl-d14	*72.2*			*23.0-120*		*07/24/2024 21:13*	WG2328846
(S) Nitrobenzene-d5	*132*			*14.0-149*		*07/24/2024 21:13*	WG2328846
(S) 2-Fluorobiphenyl	*80.4*			*34.0-125*		*07/24/2024 21:13*	WG2328846

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.395	J	0.255	1.00	1	07/26/2024 15:32	WG2325683

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	0.0506	B J	0.0217	0.100	1	07/23/2024 18:48	WG2328388
(S) a,a,a-Trifluorotoluene(FID)	*102*			*77.0-120*		*07/23/2024 18:48*	WG2328388

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	07/23/2024 06:16	WG2327819
Toluene	U		0.00130	0.00500	1	07/23/2024 06:16	WG2327819
Ethylbenzene	U		0.000737	0.00250	1	07/23/2024 06:16	WG2327819
Xylenes, Total	0.00222	J	0.000880	0.00650	1	07/23/2024 06:16	WG2327819
1,2,4-Trimethylbenzene	0.00197	J	0.00158	0.00500	1	07/23/2024 06:16	WG2327819
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/23/2024 06:16	WG2327819
(S) Toluene-d8	*104*			*75.0-131*		*07/23/2024 06:16*	WG2327819
(S) 4-Bromofluorobenzene	*104*			*67.0-138*		*07/23/2024 06:16*	WG2327819
(S) 1,2-Dichloroethane-d4	*90.9*			*70.0-130*		*07/23/2024 06:16*	WG2327819

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	6.71		1.61	4.00	1	07/25/2024 00:07	WG2329372
C28-C36 Motor Oil Range	18.8		0.274	4.00	1	07/25/2024 00:07	WG2329372
(S) o-Terphenyl	*71.1*			*18.0-148*		*07/25/2024 00:07*	WG2329372

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	07/24/2024 22:57	WG2328846
Anthracene	U		0.00230	0.00600	1	07/24/2024 22:57	WG2328846
Benzo(a)anthracene	U		0.00173	0.00600	1	07/24/2024 22:57	WG2328846
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/24/2024 22:57	WG2328846
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/24/2024 22:57	WG2328846
Benzo(a)pyrene	U		0.00179	0.00600	1	07/24/2024 22:57	WG2328846
Chrysene	U		0.00232	0.00600	1	07/24/2024 22:57	WG2328846
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/24/2024 22:57	WG2328846
Fluoranthene	U		0.00227	0.00600	1	07/24/2024 22:57	WG2328846
Fluorene	U		0.00205	0.00600	1	07/24/2024 22:57	WG2328846
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/24/2024 22:57	WG2328846
1-Methylnaphthalene	U		0.00449	0.0200	1	07/24/2024 22:57	WG2328846
2-Methylnaphthalene	0.00831	J	0.00427	0.0200	1	07/24/2024 22:57	WG2328846
Naphthalene	U		0.00408	0.0200	1	07/24/2024 22:57	WG2328846
Pyrene	U		0.00200	0.00600	1	07/24/2024 22:57	WG2328846
(S) p-Terphenyl-d14	*57.5*			*23.0-120*		*07/24/2024 22:57*	WG2328846
(S) Nitrobenzene-d5	*64.3*			*14.0-149*		*07/24/2024 22:57*	WG2328846
(S) 2-Fluorobiphenyl	*60.8*			*34.0-125*		*07/24/2024 22:57*	WG2328846

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.968	J	0.255	1.00	1	07/26/2024 15:41	WG2325683

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	0.727		0.0217	0.100	1	07/23/2024 19:09	WG2328388
(S) a,a,a-Trifluorotoluene(FID)	*95.3*			*77.0-120*		*07/23/2024 19:09*	WG2328388

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	0.00140		0.000467	0.00100	1	07/23/2024 06:35	WG2327819
Toluene	0.00270	J	0.00130	0.00500	1	07/23/2024 06:35	WG2327819
Ethylbenzene	0.00160	J	0.000737	0.00250	1	07/23/2024 06:35	WG2327819
Xylenes, Total	0.0200		0.000880	0.00650	1	07/23/2024 06:35	WG2327819
1,2,4-Trimethylbenzene	0.00765		0.00158	0.00500	1	07/23/2024 06:35	WG2327819
1,3,5-Trimethylbenzene	0.0151		0.00200	0.00500	1	07/23/2024 06:35	WG2327819
(S) Toluene-d8	*105*			*75.0-131*		*07/23/2024 06:35*	WG2327819
(S) 4-Bromofluorobenzene	*105*			*67.0-138*		*07/23/2024 06:35*	WG2327819
(S) 1,2-Dichloroethane-d4	*92.1*			*70.0-130*		*07/23/2024 06:35*	WG2327819

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	371		8.05	20.0	5	07/24/2024 23:42	WG2329372
C28-C36 Motor Oil Range	680		1.37	20.0	5	07/24/2024 23:42	WG2329372
(S) o-Terphenyl	*69.0*			*18.0-148*		*07/24/2024 23:42*	WG2329372

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	07/24/2024 23:48	WG2328846
Anthracene	U		0.00230	0.00600	1	07/24/2024 23:48	WG2328846
Benzo(a)anthracene	U		0.00173	0.00600	1	07/24/2024 23:48	WG2328846
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/24/2024 23:48	WG2328846
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/24/2024 23:48	WG2328846
Benzo(a)pyrene	U		0.00179	0.00600	1	07/24/2024 23:48	WG2328846
Chrysene	U		0.00232	0.00600	1	07/24/2024 23:48	WG2328846
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/24/2024 23:48	WG2328846
Fluoranthene	U		0.00227	0.00600	1	07/24/2024 23:48	WG2328846
Fluorene	U		0.00205	0.00600	1	07/24/2024 23:48	WG2328846
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/24/2024 23:48	WG2328846
1-Methylnaphthalene	0.238		0.00449	0.0200	1	07/24/2024 23:48	WG2328846
2-Methylnaphthalene	0.700		0.00427	0.0200	1	07/24/2024 23:48	WG2328846
Naphthalene	0.225		0.00408	0.0200	1	07/24/2024 23:48	WG2328846
Pyrene	0.0187		0.00200	0.00600	1	07/24/2024 23:48	WG2328846
(S) p-Terphenyl-d14	*68.7*			*23.0-120*		*07/24/2024 23:48*	WG2328846
(S) Nitrobenzene-d5	*84.9*			*14.0-149*		*07/24/2024 23:48*	WG2328846
(S) 2-Fluorobiphenyl	*76.0*			*34.0-125*		*07/24/2024 23:48*	WG2328846

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.456	J	0.255	1.00	1	07/26/2024 11:37	WG2326501

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	0.0458	B J	0.0217	0.100	1	07/23/2024 19:30	WG2328388
(S) a,a,a-Trifluorotoluene(FID)	*103*			*77.0-120*		*07/23/2024 19:30*	WG2328388

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	07/23/2024 06:54	WG2327819
Toluene	U		0.00130	0.00500	1	07/23/2024 06:54	WG2327819
Ethylbenzene	U		0.000737	0.00250	1	07/23/2024 06:54	WG2327819
Xylenes, Total	0.00393	J	0.000880	0.00650	1	07/23/2024 06:54	WG2327819
1,2,4-Trimethylbenzene	0.00228	J	0.00158	0.00500	1	07/23/2024 06:54	WG2327819
1,3,5-Trimethylbenzene	0.00210	J	0.00200	0.00500	1	07/23/2024 06:54	WG2327819
(S) Toluene-d8	*104*			*75.0-131*		*07/23/2024 06:54*	WG2327819
(S) 4-Bromofluorobenzene	*105*			*67.0-138*		*07/23/2024 06:54*	WG2327819
(S) 1,2-Dichloroethane-d4	*86.9*			*70.0-130*		*07/23/2024 06:54*	WG2327819

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	29.7		1.61	4.00	1	07/24/2024 22:03	WG2329372
C28-C36 Motor Oil Range	41.1		0.274	4.00	1	07/24/2024 22:03	WG2329372
(S) o-Terphenyl	*58.6*			*18.0-148*		*07/24/2024 22:03*	WG2329372

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	07/24/2024 21:31	WG2328846
Anthracene	U		0.00230	0.00600	1	07/24/2024 21:31	WG2328846
Benzo(a)anthracene	U		0.00173	0.00600	1	07/24/2024 21:31	WG2328846
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/24/2024 21:31	WG2328846
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/24/2024 21:31	WG2328846
Benzo(a)pyrene	U		0.00179	0.00600	1	07/24/2024 21:31	WG2328846
Chrysene	U		0.00232	0.00600	1	07/24/2024 21:31	WG2328846
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/24/2024 21:31	WG2328846
Fluoranthene	U		0.00227	0.00600	1	07/24/2024 21:31	WG2328846
Fluorene	0.0295		0.00205	0.00600	1	07/24/2024 21:31	WG2328846
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/24/2024 21:31	WG2328846
1-Methylnaphthalene	0.0396		0.00449	0.0200	1	07/24/2024 21:31	WG2328846
2-Methylnaphthalene	0.113		0.00427	0.0200	1	07/24/2024 21:31	WG2328846
Naphthalene	0.0207		0.00408	0.0200	1	07/24/2024 21:31	WG2328846
Pyrene	U		0.00200	0.00600	1	07/24/2024 21:31	WG2328846
(S) p-Terphenyl-d14	*63.7*			*23.0-120*		*07/24/2024 21:31*	WG2328846
(S) Nitrobenzene-d5	*74.9*			*14.0-149*		*07/24/2024 21:31*	WG2328846
(S) 2-Fluorobiphenyl	*67.5*			*34.0-125*		*07/24/2024 21:31*	WG2328846

Method Blank (MB)

(MB) R4099034-1 07/26/24 10:13

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

L1757465-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1757465-07 07/26/24 12:53 • (DUP) R4099034-11 07/26/24 13:01

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

L1757476-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1757476-03 07/26/24 13:46 • (DUP) R4099034-12 07/26/24 13:55

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) R4099034-2 07/26/24 10:21

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	10.0	9.12	91.2	80.0-120	

L1757465-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1757465-05 07/26/24 11:06 • (MS) R4099034-3 07/26/24 11:15 • (MSD) R4099034-4 07/26/24 11:24

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	20.0	U	18.8	17.9	94.2	89.6	1	75.0-125			5.01	20

L1757465-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1757465-06 07/26/24 12:08 • (MS) R4099034-7 07/26/24 12:17 • (MSD) R4099034-8 07/26/24 12:26

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	20.0	U	19.2	18.3	95.9	91.4	1	75.0-125			4.77	20

L1757465-05 Original Sample (OS) • Matrix Spike (MS)

(OS) L1757465-05 07/26/24 11:06 • (MS) R4099034-5 07/26/24 11:33

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	651	U	574	88.1	50	75.0-125	

L1757465-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L1757465-06 07/26/24 12:08 • (MS) R4099034-9 07/26/24 12:35

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	646	U	561	86.9	50	75.0-125	

Method Blank (MB)

(MB) R4098969-1 07/26/24 10:57

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

L1757476-26 Original Sample (OS) • Duplicate (DUP)

(OS) L1757476-26 07/26/24 11:24 • (DUP) R4098969-3 07/26/24 11:30

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	0.313	0.373	1	17.5	J	20

L1757601-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1757601-04 07/26/24 12:14 • (DUP) R4098969-4 07/26/24 12:20

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	0.283	U	1	200	P1	20

Laboratory Control Sample (LCS)

(LCS) R4098969-2 07/26/24 11:06

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	

L1757987-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1757987-01 07/26/24 12:38 • (MS) R4098969-5 07/26/24 12:45 • (MSD) R4098969-6 07/26/24 12:51

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	20.0	U	19.9	19.1	99.6	95.7	1	75.0-125			4.02	20

L1757987-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1757987-05 07/26/24 13:40 • (MS) R4098969-9 07/26/24 13:46 • (MSD) R4098969-10 07/26/24 13:53

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	20.0	U	20.1	20.1	100	100	1	75.0-125			0.0966	20

L1757987-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1757987-01 07/26/24 12:38 • (MS) R4098969-7 07/26/24 12:57

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	654	U	565	86.4	50	75.0-125	

L1757987-05 Original Sample (OS) • Matrix Spike (MS)

(OS) L1757987-05 07/26/24 13:40 • (MS) R4098969-11 07/26/24 13:59

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	633	U	555	87.7	50	75.0-125	

Method Blank (MB)

(MB) R4097952-2 07/23/24 11:47

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0280	J	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*112*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R4097952-1 07/23/24 11:03

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.00	5.45	109	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*112*	*77.0-120*	

Method Blank (MB)

(MB) R4097675-3 07/22/24 22:08

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	*104*			*75.0-131*
(S) 4-Bromofluorobenzene	*101*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*91.8*			*70.0-130*

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

(LCS) R4097675-1 07/22/24 20:33 • (LCSD) R4097675-2 07/22/24 20:52

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.113	0.117	90.4	93.6	70.0-123			3.48	20
Toluene	0.125	0.109	0.114	87.2	91.2	75.0-121			4.48	20
Ethylbenzene	0.125	0.116	0.118	92.8	94.4	74.0-126			1.71	20
Xylenes, Total	0.375	0.356	0.370	94.9	98.7	72.0-127			3.86	20
1,2,4-Trimethylbenzene	0.125	0.119	0.121	95.2	96.8	70.0-126			1.67	20
1,3,5-Trimethylbenzene	0.125	0.120	0.122	96.0	97.6	73.0-127			1.65	20
(S) Toluene-d8				*101*	*103*	*75.0-131*				
(S) 4-Bromofluorobenzene				*103*	*102*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*97.9*	*97.4*	*70.0-130*				

Method Blank (MB)

(MB) R4098178-1 07/24/24 22:03

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
(S) o-Terphenyl	*80.2*			*18.0-148*

Method Blank (MB)

(MB) R4098331-3 07/25/24 10:41

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
(S) o-Terphenyl	*80.5*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R4098178-2 07/24/24 22:15

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	38.5	77.0	50.0-150	
(S) o-Terphenyl			*79.9*	*18.0-148*	

L1758007-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1758007-06 07/25/24 10:02 • (MS) R4098331-1 07/25/24 10:15 • (MSD) R4098331-2 07/25/24 10:28

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	48.9	U	26.9	24.2	55.0	50.1	1	50.0-150			10.6	20
(S) o-Terphenyl					*52.9*	*47.8*		*18.0-148*				

Method Blank (MB)

(MB) R4098111-2 07/24/24 18:38

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	*106*			*23.0-120*
(S) Nitrobenzene-d5	*84.8*			*14.0-149*
(S) 2-Fluorobiphenyl	*97.7*			*34.0-125*

Laboratory Control Sample (LCS)

(LCS) R4098111-1 07/24/24 18:04

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0769	96.1	50.0-120	
Anthracene	0.0800	0.0808	101	50.0-126	
Benzo(a)anthracene	0.0800	0.0804	101	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0945	118	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0864	108	49.0-125	
Benzo(a)pyrene	0.0800	0.0764	95.5	42.0-120	
Chrysene	0.0800	0.0889	111	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0836	105	47.0-125	
Fluoranthene	0.0800	0.0867	108	49.0-129	
Fluorene	0.0800	0.0867	108	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0793	99.1	46.0-125	
1-Methylnaphthalene	0.0800	0.0812	102	51.0-121	
2-Methylnaphthalene	0.0800	0.0787	98.4	50.0-120	
Naphthalene	0.0800	0.0773	96.6	50.0-120	
Pyrene	0.0800	0.0884	111	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R4098111-1 07/24/24 18:04

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
(S) p-Terphenyl-d14			*95.1*	*23.0-120*	
(S) Nitrobenzene-d5			*88.8*	*14.0-149*	
(S) 2-Fluorobiphenyl			*95.2*	*34.0-125*	

L1757520-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1757520-04 07/24/24 22:57 • (MS) R4098111-3 07/24/24 23:14 • (MSD) R4098111-4 07/24/24 23:31

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.0764	U	0.0632	0.0660	82.7	85.9	1	14.0-127			4.33	27
Anthracene	0.0764	U	0.0691	0.0713	90.4	92.8	1	10.0-145			3.13	30
Benzo(a)anthracene	0.0764	U	0.0704	0.0711	92.1	92.6	1	10.0-139			0.989	30
Benzo(b)fluoranthene	0.0764	U	0.0753	0.0761	98.6	99.1	1	10.0-140			1.06	36
Benzo(k)fluoranthene	0.0764	U	0.0706	0.0721	92.4	93.9	1	10.0-137			2.10	31
Benzo(a)pyrene	0.0764	U	0.0717	0.0722	93.8	94.0	1	10.0-141			0.695	31
Chrysene	0.0764	U	0.0745	0.0762	97.5	99.2	1	10.0-145			2.26	30
Dibenz(a,h)anthracene	0.0764	U	0.0734	0.0754	96.1	98.2	1	10.0-132			2.69	31
Fluoranthene	0.0764	U	0.0731	0.0749	95.7	97.5	1	10.0-153			2.43	33
Fluorene	0.0764	U	0.0713	0.0749	93.3	97.5	1	11.0-130			4.92	29
Indeno(1,2,3-cd)pyrene	0.0764	U	0.0718	0.0719	94.0	93.6	1	10.0-137			0.139	32
1-Methylnaphthalene	0.0764	U	0.0703	0.0727	92.0	94.7	1	10.0-142			3.36	28
2-Methylnaphthalene	0.0764	0.00831	0.0745	0.0739	86.6	85.4	1	10.0-137			0.809	28
Naphthalene	0.0764	U	0.0644	0.0677	84.3	88.2	1	10.0-135			5.00	27
Pyrene	0.0764	U	0.0713	0.0730	93.3	95.1	1	10.0-148			2.36	35
(S) p-Terphenyl-d14					*83.3*	*80.8*		*23.0-120*				
(S) Nitrobenzene-d5					*84.4*	*83.1*		*14.0-149*				
(S) 2-Fluorobiphenyl					*84.0*	*83.4*		*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
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

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: F229

ALL BOLD OUTLINED AREAS are for LAB USE ONLY

L1757520

Company: Caerus Oil and Gas LLC	Billing Information: Info on file
Address: Info on file	
Report To: Jake Janicek, Brett Middleton, Blair Rollins, Andy Verbonitz	Email To: Info on file
Copy To: N/A	Site Collection Info/Address: N/A
Customer Project Name/Number: J14 496 23B-14 Flowline Release	State: CO / County/City: Garfield / Time Zone Collected: [ ]PT [X]MT [ ]CT [ ]ET
Phone: 303-870-8828 Email: olivia.floyd@confluence-cc.com	Site/Facility ID #: J14 496 / Compliance Monitoring? [ ] Yes [X] No
Collected By (print): Olivia Floyd	Purchase Order # : N/A Quote #: N/A / DW PWS ID #: N/A DW Location Code: N/A
Collected By (signature): Olivia Floyd	Turnaround Date Required: Standard Turnaround / Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: (Expedite Charges Apply) [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day / Field Filtered (if applicable): N/A [ ] Yes [ ] No Analysis: _____

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

Container Preservative Type **

Lab Project Manager:

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

Analyses

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Container Type: Plastic (P) or Glass (G)	Table 915-1 VOCs	TPH (ORO, GRO, DRO)	Table 915-1 Metals	Table 915-1 PAHs	pH, EC, SAR	Boron (Hot Water Soluble Soil)	Cr6IC				Lab Sample # / Comments:
20240715-ELU J14 496-(23B-14-POR)@ 4	SL	G	7/15/2024	1015				4	G	X	X	X	X	X	X	X				-01
20240715-ELU J14 496-(23B-14-BASE)@ 3	SL	G	7/15/2024	1040				4	G	X	X	X	X	X	X	X				-02
20240715-ELU J14 496-(23B-14-NW)@ 4	SL	G	7/15/2024	1005				4	G	X	X	X	X	X	X	X				-03
20240715-ELU J14 496-(23B-14-SW)@ 2	SL	G	7/15/2024	1035				4	G	X	X	X	X	X	X	X				-04
20240715-ELU J14 496-(23B-14-EW)@ 3.5	SL	G	7/15/2024	1020				4	G	X	X	X	X	X	X	X				-05
20240715-ELU J14 496-(23B-14-WW)@ 2.5	SL	G	7/15/2024	1030				4	G	X	X	X	X	X	X	X				-06

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 #: 8126 8306 9800

Samples received via: FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: 4.6 4.0 3 2 4.9 EDA9
Cooler 1 Temp Upon Receipt: __oC
Cooler 1 Therm Corr. Factor: __oC
Cooler 1 Corrected Temp: __oC
Comments:

Relinquished by/Company: Olivia Floyd	Date/Time: 7/16/24 1130	Received by/Company:	Date/Time:
Relinquished by/Company: (Signature)	Date/Time: 7/16/24 1500	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature) Ei Davis	Date/Time: 7-17-24 0900

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

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

August 09, 2024

Client Services
Pace National
12065 Lebanon Rd
Mt. Juliet, TN 37122

RE: Project: L1757520 WG2325486
Pace Project No.: 10700597

Dear Client Services:

Enclosed are the analytical results for sample(s) received by the laboratory on July 19, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Yeng Ozawa
yeng.ozawa@pacelabs.com
(612)607-1700
Project Manager

Enclosures

cc: Jimmy Huckaba, Pace Analytical National Center for Testing & Innovation

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: L1757520 WG2325486
Pace Project No.: 10700597

Pace Analytical Services, LLC - Minneapolis MN
1700 Elm Street SE, Minneapolis, MN 55414
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
DoD Certification via A2LA #: 2926.01
EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
GMP+ Certification #: GMP050884
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
ISO/IEC 17025 Certification via A2LA #: 2926.01
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: AI-03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Approval: via MN 027-053-137
Minnesota Petrofund Registration #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification (A2LA) #: R-036
North Dakota Certification (MN) #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification (1700) #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification via A2LA #: 2926.01
USDA Permit #: P330-19-00208

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: L1757520 WG2325486
Pace Project No.: 10700597

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10700597001	**20240715-ELU J14 496-(23B-14-P**	Solid	07/15/24 10:15	07/19/24 10:10
10700597002	**20240715-ELU J14 496-(23B-14-B**	Solid	07/15/24 10:40	07/19/24 10:10
10700597003	**20240715-ELU J14 496-(23B-14-N**	Solid	07/15/24 10:05	07/19/24 10:10
10700597004	**20240715-ELU J14 496-(23B-14-S**	Solid	07/15/24 10:35	07/19/24 10:10
10700597005	**20240715-ELU J14 496-(23B-14-E**	Solid	07/15/24 10:20	07/19/24 10:10
10700597006	**20240715-ELU J14 496-(23B-14-W**	Solid	07/15/24 10:30	07/19/24 10:10

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: L1757520 WG2325486
Pace Project No.: 10700597

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10700597001	**20240715-ELU J14 496-(23B-14-P**	WREP 125, S-7.10	DM	1	PASI-M
		WREP 125 S-1.6	DM	4	PASI-M
		EPA 6020B	NN2	9	PASI-M
		ASTM D2974	JDL	1	PASI-M
		WREP 125 S-1.20	SMB	1	PASI-M
		WREP 125 S-1.10	MER	1	PASI-M
10700597002	**20240715-ELU J14 496-(23B-14-B**	WREP 125, S-7.10	DM	1	PASI-M
		WREP 125 S-1.6	DM	4	PASI-M
		EPA 6020B	NN2	9	PASI-M
		ASTM D2974	JDL	1	PASI-M
		WREP 125 S-1.20	SMB	1	PASI-M
		WREP 125 S-1.10	MER	1	PASI-M
10700597003	**20240715-ELU J14 496-(23B-14-N**	WREP 125, S-7.10	DM	1	PASI-M
		WREP 125 S-1.6	DM	4	PASI-M
		EPA 6020B	NN2	9	PASI-M
		ASTM D2974	JDL	1	PASI-M
		WREP 125 S-1.20	SMB	1	PASI-M
		WREP 125 S-1.10	MER	1	PASI-M
10700597004	**20240715-ELU J14 496-(23B-14-S**	WREP 125, S-7.10	DM	1	PASI-M
		WREP 125 S-1.6	DM	4	PASI-M
		EPA 6020B	NN2	9	PASI-M
		ASTM D2974	JDL	1	PASI-M
		WREP 125 S-1.20	SMB	1	PASI-M
		WREP 125 S-1.10	MER	1	PASI-M
10700597005	**20240715-ELU J14 496-(23B-14-E**	WREP 125, S-7.10	DM	1	PASI-M
		WREP 125 S-1.6	DM	4	PASI-M
		EPA 6020B	NN2	9	PASI-M
		ASTM D2974	JDL	1	PASI-M
		WREP 125 S-1.20	SMB	1	PASI-M
		WREP 125 S-1.10	MER	1	PASI-M
10700597006	**20240715-ELU J14 496-(23B-14-W**	WREP 125, S-7.10	DM	1	PASI-M
		WREP 125 S-1.6	DM	4	PASI-M
		EPA 6020B	NN2	9	PASI-M
		ASTM D2974	JDL	1	PASI-M
		WREP 125 S-1.20	SMB	1	PASI-M
		WREP 125 S-1.10	MER	1	PASI-M

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: L1757520 WG2325486
Pace Project No.: 10700597

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory

PASI-M = Pace Analytical Services - Minneapolis

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: L1757520 WG2325486
Pace Project No.: 10700597

Sample: 20240715-ELU J14 496-(23B-14-P **Lab ID: 10700597001** Collected: 07/15/24 10:15 Received: 07/19/24 10:10 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Hot Water Soluble Boron	Analytical Method: WREP 125, S-7.10 Preparation Method: N/A Pace Analytical Services - Minneapolis							
Boron	**1.1**	mg/kg	0.30	1	07/30/24 11:25	07/30/24 14:54	7440-42-8	N2
Sodium Adsorption Ratio, SAR	Analytical Method: WREP 125 S-1.6 Pace Analytical Services - Minneapolis							
Calcium saturated paste	**16.8**	meq/L	0.25	10		08/08/24 11:34	7440-70-2	N2
Magnesium saturated paste	**7.2**	meq/L	0.41	10		08/08/24 11:34	7439-95-4	N2
Sodium Adsorption Ratio	**15.5**			10		08/08/24 11:34		N2
Sodium saturated paste	**53.9**	meq/L	0.44	10		08/08/24 11:34	7440-23-5	N2
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**4.3**	mg/kg	0.46	20	07/22/24 15:49	07/23/24 21:50	7440-38-2	
Barium	**1760**	mg/kg	2.8	200	07/22/24 15:49	07/24/24 10:05	7440-39-3	
Cadmium	**0.24**	mg/kg	0.074	20	07/22/24 15:49	07/23/24 21:50	7440-43-9	
Copper	**19.5**	mg/kg	0.93	20	07/22/24 15:49	07/23/24 21:50	7440-50-8	
Lead	**11.4**	mg/kg	0.46	20	07/22/24 15:49	07/23/24 21:50	7439-92-1	
Nickel	**14.1**	mg/kg	0.46	20	07/22/24 15:49	07/23/24 21:50	7440-02-0	
Selenium	ND	mg/kg	0.46	20	07/22/24 15:49	07/23/24 21:50	7782-49-2	
Silver	ND	mg/kg	0.46	20	07/22/24 15:49	07/23/24 21:50	7440-22-4	
Zinc	**54.4**	mg/kg	4.6	20	07/22/24 15:49	07/23/24 21:50	7440-66-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**6.4**	%	0.10	1		07/23/24 11:25		N2
Saturated Paste Elect. Cond.	Analytical Method: WREP 125 S-1.20 Pace Analytical Services - Minneapolis							
Specific Conductance	**8300**	umhos/cm	5.0	1		08/08/24 14:38		N2
Saturated Paste pH	Analytical Method: WREP 125 S-1.10 Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.30**	Std. Units	0.100	1		08/07/24 15:04		N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: L1757520 WG2325486
Pace Project No.: 10700597

Sample: 20240715-ELU J14 496-(23B-14-B **Lab ID: 10700597002** Collected: 07/15/24 10:40 Received: 07/19/24 10:10 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Hot Water Soluble Boron	Analytical Method: WREP 125, S-7.10 Preparation Method: N/A Pace Analytical Services - Minneapolis							
Boron	ND	mg/kg	0.30	1	07/30/24 11:25	07/30/24 14:55	7440-42-8	N2
Sodium Adsorption Ratio, SAR	Analytical Method: WREP 125 S-1.6 Pace Analytical Services - Minneapolis							
Calcium saturated paste	**2.2**	meq/L	0.25	10		08/08/24 11:39	7440-70-2	N2
Magnesium saturated paste	**1.3**	meq/L	0.41	10		08/08/24 11:39	7439-95-4	N2
Sodium Adsorption Ratio	**4.0**			10		08/08/24 11:39		N2
Sodium saturated paste	**5.3**	meq/L	0.44	10		08/08/24 11:39	7440-23-5	N2
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**3.6**	mg/kg	0.48	20	07/22/24 15:49	07/23/24 22:09	7440-38-2	
Barium	**522**	mg/kg	1.4	100	07/22/24 15:49	07/24/24 10:25	7440-39-3	
Cadmium	**0.10**	mg/kg	0.077	20	07/22/24 15:49	07/23/24 22:09	7440-43-9	
Copper	**8.8**	mg/kg	0.96	20	07/22/24 15:49	07/23/24 22:09	7440-50-8	
Lead	**6.5**	mg/kg	0.48	20	07/22/24 15:49	07/23/24 22:09	7439-92-1	
Nickel	**12.5**	mg/kg	0.48	20	07/22/24 15:49	07/23/24 22:09	7440-02-0	
Selenium	ND	mg/kg	0.48	20	07/22/24 15:49	07/23/24 22:09	7782-49-2	
Silver	ND	mg/kg	0.48	20	07/22/24 15:49	07/23/24 22:09	7440-22-4	
Zinc	**32.3**	mg/kg	4.8	20	07/22/24 15:49	07/23/24 22:09	7440-66-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**26.5**	%	0.10	1		07/23/24 11:25		N2
Saturated Paste Elect. Cond.	Analytical Method: WREP 125 S-1.20 Pace Analytical Services - Minneapolis							
Specific Conductance	**885**	umhos/cm	5.0	1		08/08/24 14:40		N2
Saturated Paste pH	Analytical Method: WREP 125 S-1.10 Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**8.08**	Std. Units	0.100	1		08/07/24 15:05		N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: L1757520 WG2325486
Pace Project No.: 10700597

Sample: 20240715-ELU J14 496-(23B-14-N **Lab ID: 10700597003** Collected: 07/15/24 10:05 Received: 07/19/24 10:10 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Hot Water Soluble Boron	Analytical Method: WREP 125, S-7.10 Preparation Method: N/A Pace Analytical Services - Minneapolis							
Boron	**1.6**	mg/kg	0.30	1	07/30/24 11:25	07/30/24 14:57	7440-42-8	N2
Sodium Adsorption Ratio, SAR	Analytical Method: WREP 125 S-1.6 Pace Analytical Services - Minneapolis							
Calcium saturated paste	**65.3**	meq/L	0.50	20		08/08/24 11:50	7440-70-2	N2
Magnesium saturated paste	**23.1**	meq/L	0.82	20		08/08/24 11:50	7439-95-4	N2
Sodium Adsorption Ratio	**20.5**			20		08/08/24 11:50		N2
Sodium saturated paste	**136**	meq/L	0.87	20		08/08/24 11:50	7440-23-5	N2
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**3.9**	mg/kg	0.47	20	07/22/24 15:49	07/23/24 21:47	7440-38-2	
Barium	**8610**	mg/kg	7.1	500	07/22/24 15:49	07/24/24 10:02	7440-39-3	
Cadmium	**0.16**	mg/kg	0.075	20	07/22/24 15:49	07/23/24 21:47	7440-43-9	
Copper	**57.2**	mg/kg	0.94	20	07/22/24 15:49	07/23/24 21:47	7440-50-8	
Lead	**9.5**	mg/kg	0.47	20	07/22/24 15:49	07/23/24 21:47	7439-92-1	
Nickel	**16.1**	mg/kg	0.47	20	07/22/24 15:49	07/23/24 21:47	7440-02-0	
Selenium	ND	mg/kg	0.47	20	07/22/24 15:49	07/23/24 21:47	7782-49-2	
Silver	ND	mg/kg	0.47	20	07/22/24 15:49	07/23/24 21:47	7440-22-4	
Zinc	**127**	mg/kg	4.7	20	07/22/24 15:49	07/23/24 21:47	7440-66-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**19.5**	%	0.10	1		07/23/24 11:25		N2
Saturated Paste Elect. Cond.	Analytical Method: WREP 125 S-1.20 Pace Analytical Services - Minneapolis							
Specific Conductance	**21800**	umhos/cm	5.0	1		08/08/24 14:41		N2
Saturated Paste pH	Analytical Method: WREP 125 S-1.10 Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.57**	Std. Units	0.100	1		08/07/24 15:06		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: L1757520 WG2325486
Pace Project No.: 10700597

Sample: 20240715-ELU J14 496-(23B-14-S **Lab ID: 10700597004** Collected: 07/15/24 10:35 Received: 07/19/24 10:10 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Hot Water Soluble Boron	Analytical Method: WREP 125, S-7.10 Preparation Method: N/A Pace Analytical Services - Minneapolis							
Boron	ND	mg/kg	0.30	1	07/30/24 11:25	07/30/24 15:04	7440-42-8	N2
Sodium Adsorption Ratio, SAR	Analytical Method: WREP 125 S-1.6 Pace Analytical Services - Minneapolis							
Calcium saturated paste	**3.6**	meq/L	0.25	10		08/08/24 11:42	7440-70-2	N2
Magnesium saturated paste	**1.8**	meq/L	0.41	10		08/08/24 11:42	7439-95-4	N2
Sodium Adsorption Ratio	**2.9**			10		08/08/24 11:42		N2
Sodium saturated paste	**4.9**	meq/L	0.44	10		08/08/24 11:42	7440-23-5	N2
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**2.9**	mg/kg	0.46	20	07/22/24 15:49	07/23/24 22:06	7440-38-2	
Barium	**384**	mg/kg	1.4	100	07/22/24 15:49	07/24/24 10:22	7440-39-3	
Cadmium	**0.11**	mg/kg	0.074	20	07/22/24 15:49	07/23/24 22:06	7440-43-9	
Copper	**8.4**	mg/kg	0.93	20	07/22/24 15:49	07/23/24 22:06	7440-50-8	
Lead	**6.0**	mg/kg	0.46	20	07/22/24 15:49	07/23/24 22:06	7439-92-1	
Nickel	**11.1**	mg/kg	0.46	20	07/22/24 15:49	07/23/24 22:06	7440-02-0	
Selenium	ND	mg/kg	0.46	20	07/22/24 15:49	07/23/24 22:06	7782-49-2	
Silver	ND	mg/kg	0.46	20	07/22/24 15:49	07/23/24 22:06	7440-22-4	
Zinc	**31.2**	mg/kg	4.6	20	07/22/24 15:49	07/23/24 22:06	7440-66-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**32.3**	%	0.10	1		07/23/24 11:25		N2
Saturated Paste Elect. Cond.	Analytical Method: WREP 125 S-1.20 Pace Analytical Services - Minneapolis							
Specific Conductance	**1050**	umhos/cm	5.0	1		08/08/24 14:43		N2
Saturated Paste pH	Analytical Method: WREP 125 S-1.10 Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**8.06**	Std. Units	0.100	1		08/07/24 15:08		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: L1757520 WG2325486
Pace Project No.: 10700597

Sample: 20240715-ELU J14 496-(23B-14-E **Lab ID: 10700597005** Collected: 07/15/24 10:20 Received: 07/19/24 10:10 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Hot Water Soluble Boron	Analytical Method: WREP 125, S-7.10 Preparation Method: N/A Pace Analytical Services - Minneapolis							
Boron	**0.46**	mg/kg	0.30	1	07/30/24 11:25	07/30/24 15:05	7440-42-8	N2
Sodium Adsorption Ratio, SAR	Analytical Method: WREP 125 S-1.6 Pace Analytical Services - Minneapolis							
Calcium saturated paste	**19.2**	meq/L	0.25	10		08/08/24 11:44	7440-70-2	N2
Magnesium saturated paste	**6.4**	meq/L	0.41	10		08/08/24 11:44	7439-95-4	N2
Sodium Adsorption Ratio	**3.9**			10		08/08/24 11:44		N2
Sodium saturated paste	**13.9**	meq/L	0.44	10		08/08/24 11:44	7440-23-5	N2
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**4.0**	mg/kg	0.46	20	07/22/24 15:49	07/23/24 21:53	7440-38-2	
Barium	**7910**	mg/kg	7.0	500	07/22/24 15:49	07/24/24 10:15	7440-39-3	
Cadmium	**0.23**	mg/kg	0.074	20	07/22/24 15:49	07/23/24 21:53	7440-43-9	
Copper	**50.2**	mg/kg	0.93	20	07/22/24 15:49	07/23/24 21:53	7440-50-8	
Lead	**9.9**	mg/kg	0.46	20	07/22/24 15:49	07/23/24 21:53	7439-92-1	
Nickel	**17.6**	mg/kg	0.46	20	07/22/24 15:49	07/23/24 21:53	7440-02-0	
Selenium	ND	mg/kg	0.46	20	07/22/24 15:49	07/23/24 21:53	7782-49-2	
Silver	ND	mg/kg	0.46	20	07/22/24 15:49	07/23/24 21:53	7440-22-4	
Zinc	**133**	mg/kg	4.6	20	07/22/24 15:49	07/23/24 21:53	7440-66-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**19.0**	%	0.10	1		07/23/24 11:26		N2
Saturated Paste Elect. Cond.	Analytical Method: WREP 125 S-1.20 Pace Analytical Services - Minneapolis							
Specific Conductance	**4260**	umhos/cm	5.0	1		08/08/24 14:43		N2
Saturated Paste pH	Analytical Method: WREP 125 S-1.10 Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.70**	Std. Units	0.100	1		08/07/24 15:09		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: L1757520 WG2325486
Pace Project No.: 10700597

Sample: 20240715-ELU J14 496-(23B-14-W **Lab ID: 10700597006** Collected: 07/15/24 10:30 Received: 07/19/24 10:10 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Hot Water Soluble Boron	Analytical Method: WREP 125, S-7.10 Preparation Method: N/A Pace Analytical Services - Minneapolis							
Boron	**0.40**	mg/kg	0.30	1	07/30/24 11:25	07/30/24 15:07	7440-42-8	N2
Sodium Adsorption Ratio, SAR	Analytical Method: WREP 125 S-1.6 Pace Analytical Services - Minneapolis							
Calcium saturated paste	**13.9**	meq/L	0.25	10		08/08/24 11:46	7440-70-2	N2
Magnesium saturated paste	**7.7**	meq/L	0.41	10		08/08/24 11:46	7439-95-4	N2
Sodium Adsorption Ratio	**4.7**			10		08/08/24 11:46		N2
Sodium saturated paste	**15.4**	meq/L	0.44	10		08/08/24 11:46	7440-23-5	N2
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**4.7**	mg/kg	0.48	20	07/22/24 15:49	07/23/24 22:03	7440-38-2	
Barium	**1320**	mg/kg	2.9	200	07/22/24 15:49	07/24/24 10:19	7440-39-3	
Cadmium	**0.12**	mg/kg	0.077	20	07/22/24 15:49	07/23/24 22:03	7440-43-9	
Copper	**13.8**	mg/kg	0.96	20	07/22/24 15:49	07/23/24 22:03	7440-50-8	
Lead	**10**	mg/kg	0.48	20	07/22/24 15:49	07/23/24 22:03	7439-92-1	
Nickel	**19.1**	mg/kg	0.48	20	07/22/24 15:49	07/23/24 22:03	7440-02-0	
Selenium	ND	mg/kg	0.48	20	07/22/24 15:49	07/23/24 22:03	7782-49-2	
Silver	ND	mg/kg	0.48	20	07/22/24 15:49	07/23/24 22:03	7440-22-4	
Zinc	**79.1**	mg/kg	4.8	20	07/22/24 15:49	07/23/24 22:03	7440-66-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**10.7**	%	0.10	1		07/23/24 11:26		N2
Saturated Paste Elect. Cond.	Analytical Method: WREP 125 S-1.20 Pace Analytical Services - Minneapolis							
Specific Conductance	**3940**	umhos/cm	5.0	1		08/08/24 14:45		N2
Saturated Paste pH	Analytical Method: WREP 125 S-1.10 Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.71**	Std. Units	0.100	1		08/07/24 15:10		N2

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: L1757520 WG2325486
Pace Project No.: 10700597

QC Batch: 961421
QC Batch Method: WREP 125 S-1.6
Analysis Method: WREP 125 S-1.6
Analysis Description: Saturated Paste SAR
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10700597001, 10700597002, 10700597003, 10700597004, 10700597005, 10700597006

METHOD BLANK: 5025073 Matrix: Solid
Associated Lab Samples: 10700597001, 10700597002, 10700597003, 10700597004, 10700597005, 10700597006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Calcium saturated paste	meq/L	ND	0.025	08/08/24 11:05	N2
Magnesium saturated paste	meq/L	ND	0.041	08/08/24 11:05	N2
Sodium Adsorption Ratio		0.0061		08/08/24 11:05	N2
Sodium saturated paste	meq/L	ND	0.044	08/08/24 11:05	N2

LABORATORY CONTROL SAMPLE & LCSD: 5025074 5025075

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Calcium saturated paste	meq/L	1	0.96	0.96	96	96	80-120	0	20	N2
Magnesium saturated paste	meq/L	1.6	1.6	1.6	96	96	80-120	0	20	N2
Sodium Adsorption Ratio			0.74	0.75				0	20	N2
Sodium saturated paste	meq/L	0.87	0.84	0.84	96	97	80-120	0	20	N2

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: L1757520 WG2325486
Pace Project No.: 10700597

QC Batch: 957695
QC Batch Method: EPA 3050B
Analysis Method: EPA 6020B
Analysis Description: 6020B Solids UPD5
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10700597001, 10700597002, 10700597003, 10700597004, 10700597005, 10700597006

METHOD BLANK: 5006729 Matrix: Solid
Associated Lab Samples: 10700597001, 10700597002, 10700597003, 10700597004, 10700597005, 10700597006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	ND	0.47	07/23/24 21:25	
Barium	mg/kg	ND	0.28	07/24/24 09:40	
Cadmium	mg/kg	ND	0.075	07/23/24 21:25	
Copper	mg/kg	ND	0.93	07/23/24 21:25	
Lead	mg/kg	ND	0.47	07/23/24 21:25	
Nickel	mg/kg	ND	0.47	07/23/24 21:25	
Selenium	mg/kg	ND	0.47	07/23/24 21:25	
Silver	mg/kg	ND	0.47	07/23/24 21:25	
Zinc	mg/kg	ND	4.7	07/23/24 21:25	

LABORATORY CONTROL SAMPLE: 5006730

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	45.8	45.2	99	80-120	
Barium	mg/kg	45.8	46.5	102	80-120	
Cadmium	mg/kg	45.8	45.4	99	80-120	
Copper	mg/kg	45.8	47.7	104	80-120	
Lead	mg/kg	45.8	46.2	101	80-120	
Nickel	mg/kg	45.8	46.0	101	80-120	
Selenium	mg/kg	45.8	47.0	103	80-120	
Silver	mg/kg	22.9	23.4	102	80-120	
Zinc	mg/kg	45.8	47.8	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 5006731 5006732

Parameter	Units	10700774001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	15.8	56.1	55.3	77.2	71.7	105	96	75-125	7	20	
Barium	mg/kg	335	56.1	55.3	399	646	13	461	75-125	47	20	E,P6, R1
Cadmium	mg/kg	0.35	56.1	55.3	53.1	55.2	94	99	75-125	4	20	
Copper	mg/kg	22.2	56.1	55.3	75.7	76.7	89	92	75-125	1	20	
Lead	mg/kg	16.0	56.1	55.3	69.4	71.7	90	96	75-125	3	20	
Nickel	mg/kg	17.6	56.1	55.3	70.9	75.6	90	100	75-125	6	20	
Selenium	mg/kg	0.58	56.1	55.3	53.9	55.0	95	98	75-125	2	20	
Silver	mg/kg	ND	28	27.7	26.1	27.2	93	98	75-125	4	20	
Zinc	mg/kg	59.6	56.1	55.3	120	127	89	103	75-125	6	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: L1757520 WG2325486
Pace Project No.: 10700597

QC Batch: 959290
QC Batch Method: N/A
Analysis Method: WREP 125, S-7.10
Analysis Description: Hot Water Soluble Boron
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10700597001, 10700597002, 10700597003, 10700597004, 10700597005, 10700597006

METHOD BLANK: 5015514 Matrix: Solid
Associated Lab Samples: 10700597001, 10700597002, 10700597003, 10700597004, 10700597005, 10700597006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	mg/kg	ND	0.30	07/30/24 14:20	N2

LABORATORY CONTROL SAMPLE: 5015515

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/kg	2	2.0	100	80-120	N2

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 5015516 5015517

Parameter	Units	10700498006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	mg/kg	0.80	2	2	1.7	1.5	45	35	75-125	11	20	M1,N2

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: L1757520 WG2325486
Pace Project No.: 10700597

QC Batch: 957988
QC Batch Method: ASTM D2974
Analysis Method: ASTM D2974
Analysis Description: Dry Weight / %M by ASTM D2974
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10700597001, 10700597002, 10700597003, 10700597004, 10700597005, 10700597006

SAMPLE DUPLICATE: 5007916

Parameter	Units	10700591001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	16.3	16.8	3	30	N2

SAMPLE DUPLICATE: 5008065

Parameter	Units	10700659004 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	2.7	2.4	9	30	N2

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: L1757520 WG2325486
Pace Project No.: 10700597

QC Batch: 961121 | Analysis Method: WREP 125 S-1.20
QC Batch Method: WREP 125 S-1.20 | Analysis Description: Electrical Conductivity Paste
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10700597001, 10700597002, 10700597003, 10700597004, 10700597005, 10700597006

METHOD BLANK: 5023923 Matrix: Solid
Associated Lab Samples: 10700597001, 10700597002, 10700597003, 10700597004, 10700597005, 10700597006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Specific Conductance	umhos/cm	ND	5.0	08/08/24 14:36	N2

LABORATORY CONTROL SAMPLE: 5023924

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Specific Conductance	umhos/cm	1000	957	96	90-110	N2

SAMPLE DUPLICATE: 5025000

Parameter	Units	10700597001 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	8300	8250	1	20	N2

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: L1757520 WG2325486
Pace Project No.: 10700597

QC Batch: 961120
QC Batch Method: WREP 125 S-1.10
Analysis Method: WREP 125 S-1.10
Analysis Description: Saturated Paste pH
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10700597001, 10700597002, 10700597003, 10700597004, 10700597005, 10700597006

SAMPLE DUPLICATE: 5023921

Parameter	Units	10700498001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.79	7.76	0.386	3	N2

SAMPLE DUPLICATE: 5023922

Parameter	Units	10700498011 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.74	6.68	0.894	3	N2

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: L1757520 WG2325486
Pace Project No.: 10700597

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: 961421

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

E	Analyte concentration exceeded the calibration range. The reported result is estimated.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
R1	RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: L1757520 WG2325486
Pace Project No.: 10700597

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10700597003	**20240715-ELU J14 496-(23B-14-N**	N/A	959290	WREP 125, S-7.10	959441
10700597001	**20240715-ELU J14 496-(23B-14-P**	N/A	959290	WREP 125, S-7.10	959441
10700597005	**20240715-ELU J14 496-(23B-14-E**	N/A	959290	WREP 125, S-7.10	959441
10700597006	**20240715-ELU J14 496-(23B-14-W**	N/A	959290	WREP 125, S-7.10	959441
10700597004	**20240715-ELU J14 496-(23B-14-S**	N/A	959290	WREP 125, S-7.10	959441
10700597002	**20240715-ELU J14 496-(23B-14-B**	N/A	959290	WREP 125, S-7.10	959441
10700597003	**20240715-ELU J14 496-(23B-14-N**	WREP 125 S-1.6	961421		
10700597001	**20240715-ELU J14 496-(23B-14-P**	WREP 125 S-1.6	961421		
10700597005	**20240715-ELU J14 496-(23B-14-E**	WREP 125 S-1.6	961421		
10700597006	**20240715-ELU J14 496-(23B-14-W**	WREP 125 S-1.6	961421		
10700597004	**20240715-ELU J14 496-(23B-14-S**	WREP 125 S-1.6	961421		
10700597002	**20240715-ELU J14 496-(23B-14-B**	WREP 125 S-1.6	961421		
10700597003	**20240715-ELU J14 496-(23B-14-N**	EPA 3050B	957695	EPA 6020B	958131
10700597001	**20240715-ELU J14 496-(23B-14-P**	EPA 3050B	957695	EPA 6020B	958131
10700597005	**20240715-ELU J14 496-(23B-14-E**	EPA 3050B	957695	EPA 6020B	958131
10700597006	**20240715-ELU J14 496-(23B-14-W**	EPA 3050B	957695	EPA 6020B	958131
10700597004	**20240715-ELU J14 496-(23B-14-S**	EPA 3050B	957695	EPA 6020B	958131
10700597002	**20240715-ELU J14 496-(23B-14-B**	EPA 3050B	957695	EPA 6020B	958131
10700597003	**20240715-ELU J14 496-(23B-14-N**	ASTM D2974	957988		
10700597001	**20240715-ELU J14 496-(23B-14-P**	ASTM D2974	957988		
10700597005	**20240715-ELU J14 496-(23B-14-E**	ASTM D2974	957988		
10700597006	**20240715-ELU J14 496-(23B-14-W**	ASTM D2974	957988		
10700597004	**20240715-ELU J14 496-(23B-14-S**	ASTM D2974	957988		
10700597002	**20240715-ELU J14 496-(23B-14-B**	ASTM D2974	957988		
10700597003	**20240715-ELU J14 496-(23B-14-N**	WREP 125 S-1.20	961121		
10700597001	**20240715-ELU J14 496-(23B-14-P**	WREP 125 S-1.20	961121		
10700597005	**20240715-ELU J14 496-(23B-14-E**	WREP 125 S-1.20	961121		
10700597006	**20240715-ELU J14 496-(23B-14-W**	WREP 125 S-1.20	961121		
10700597004	**20240715-ELU J14 496-(23B-14-S**	WREP 125 S-1.20	961121		
10700597002	**20240715-ELU J14 496-(23B-14-B**	WREP 125 S-1.20	961121		
10700597003	**20240715-ELU J14 496-(23B-14-N**	WREP 125 S-1.10	961120		
10700597001	**20240715-ELU J14 496-(23B-14-P**	WREP 125 S-1.10	961120		
10700597005	**20240715-ELU J14 496-(23B-14-E**	WREP 125 S-1.10	961120		
10700597006	**20240715-ELU J14 496-(23B-14-W**	WREP 125 S-1.10	961120		
10700597004	**20240715-ELU J14 496-(23B-14-S**	WREP 125 S-1.10	961120		
10700597002	**20240715-ELU J14 496-(23B-14-B**	WREP 125 S-1.10	961120		

Sub-Contract Chain of Custody

Batch Date/Time: 07/18/24 10:11
Sub-Contract Lab: PACEMN
Address: 1700 Elm Street Suite 200 SE
City/State: Minneapolis, MN 55414
Contact: Kirsten.Hogberg@pacelabs.com
Owner Lab: PACEMTJL
Address: 12065 Lebanon Rd.
City/State: Mt. Juliet, TN 37122
Phone: (615) 773-9756
Fax: (615) 758-5859

WO: WG2325486
Email: MTJLSuboutTeam@pacelabs.com
Results Due Date: 07/24/24
ESC Purchase Order #: L1757520
Send Reports to: James C Huckaba

Pace Analytical®

12065 Lebanon Rd.
Mt. Juliet, TN 37122
Phone:(615) 773-9756
Fax:(615) 758-5859

Sample ID Container ID	Matrix	State	Collect Date	Description	Sample Number Lab Use Only	Sample Comments Lab Use Only	
20240715-ELU J14 496-(23B-14-POR)@4	SS	CO	07/15/24 10:15	SUB TABLE 915 INORGANICS	1. L1757520-01	Hot Water Soluble Boron, SAR including pH and EC, 6020 Ag, As, Ba, Cd, Cu, Ni, Pb, Se, Zn	01
20240715-ELU J14 496-(23B-14-BASE)@3	SS	CO	07/15/24 10:40	SUB TABLE 915 INORGANICS	2. L1757520-02	Hot Water Soluble Boron, SAR including pH and EC, 6020 Ag, As, Ba, Cd, Cu, Ni, Pb, Se, Zn	02
20240715-ELU J14 496-(23B-14-NW)@4	SS	CO	07/15/24 10:05	SUB TABLE 915 INORGANICS	3. L1757520-03	Hot Water Soluble Boron, SAR including pH and EC, 6020 Ag, As, Ba, Cd, Cu, Ni, Pb, Se, Zn	03
20240715-ELU J14 496-(23B-14-SW)@2	SS	CO	07/15/24 10:35	SUB TABLE 915 INORGANICS	4. L1757520-04	Hot Water Soluble Boron, SAR including pH and EC, 6020 Ag, As, Ba, Cd, Cu, Ni, Pb, Se, Zn	04
20240715-ELU J14 496-(23B-14-EW)@3.5	SS	CO	07/15/24 10:20	SUB TABLE 915 INORGANICS	5. L1757520-05	Hot Water Soluble Boron, SAR including pH and EC, 6020 Ag, As, Ba, Cd, Cu, Ni, Pb, Se, Zn	05
20240715-ELU J14 496-(23B-14-WW)@2.5	SS	CO	07/15/24 10:30	SUB TABLE 915 INORGANICS	6. L1757520-06	Hot Water Soluble Boron, SAR including pH and EC, 6020 Ag, As, Ba, Cd, Cu, Ni, Pb, Se, Zn	06

*= Container used for multiple Samples and/or Analyses

Relinquished by: _____ **Date** 7.18.24

Recieved by: _____ **Date** 7/18/24 10:10/ cooler#2 945

Relinquished by: _____ **Date** _____

Recieved by: _____ **Date** _____

WO# : 10700597

10700597

ENV-FRM-MIN4-0150 v17_Sample Condition Upon Receipt

CLIENT NAME: Pace National **PROJECT #:** **WO#: 10700597**

PM: Y01 **Due Date: 07/30/24**

CLIENT: PASI-TN

COURIER: ☐ Client ☐ Commercial ☑ FedEx ☐ Pace ☐ SpeeDee ☐ UPS ☐ USPS

TRACKING NUMBER: 404104705061 ☐ See Exceptions form ENV-FRM-MIN4-0142

Custody Seal on Cooler/Box Present: ☐ YES ☑ NO **Seals Intact:** ☐ YES ☑ NO **Biological Tissue Frozen:** ☐ YES ☐ NO ☑ N/A

Packing Material: ☑ Bubble Bags ☑ Bubble Wrap ☐ None ☐ Other **Temp Blank:** ☑ YES ☐ NO **Type of Ice:** ☐ Blue ☐ Dry ☑ Wet ☐ Melted ☐ None

Thermometer: ☐ T1 (0461) ☐ T2 (0436) ☐ T3 (0459) ☐ T4 (0402) ☐ T5 (0178) ☐ T6 (0235) ☐ T7 (0042) ☐ T8 (0775) ☑ T9 (0727) ☐ 01339252 (1710)

Did Samples Originate in West Virginia: ☐ YES ☑ NO	**Were All Container Temps taken:** ☐ YES ☐ NO ☑ N/A
Correction Factor: +0.1 **Cooler Temp Read w/Temp Blank:** 1.6 °C **Cooler Temp Corrected w/Temp Blank:** 1.6 °C	**Average Corrected Temp (no Temp Blank Only):** _____ °C
***NOTE:** Temp should be above freezing to 6°C.*	☐ See Exceptions Form ENV-FRM-MIN4-0142 ☐ 1 Container
USDA Regulated Soil: ☐ N/A – Water Sample/Other (describe): _____	**Initials & Date of Person Examining Contents:** JMW 7/19/24
Did Samples originate from one of the following states (check maps) – AL, AR, AZ, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA: ☐ YES ☑ NO	Did samples originate from a foreign source (international, including Hawaii and Puerto Rico): ☐ YES ☑ NO
NOTE: If YES to either question, fill out a Regulated Soil Checklist (ENV-FRM-MIN4-0154) and include with SCUR/COC paperwork.	

LOCATION (check one): ☐ DULUTH ☑ MINNEAPOLIS ☐ VIRGINIA	YES	NO	N/A	COMMENT(S)
Chain of Custody Present and Filled Out?	☑	☐		1.
Chain of Custody Relinquished?	☑	☐		2.
Sampler Name and/or Signature on COC?	☐	☐	☑	3.
Samples Arrived within Hold Time?	☑	☐		4. If Fecal: ☐ <8 hrs ☐ >8 hr, <24 hr ☐ No
Short Hold Time Analysis (<72 hr)?	☐	☑		5. ☐ BOD / cBOD ☐ Fecal coliform ☐ Hex Chrom ☐ HPC ☐ Nitrate ☐ Nitrite ☐ Ortho Phos ☐ Total coliform/*E. coli* ☐ Other: _____
Rush Turn Around Time Requested?	☑	☐		6.
Sufficient Sample Volume?	☑	☐		7.
Correct Containers Used? – Pace Containers Used?	☑ ☐	☐ ☑	☐	8.
Containers Intact?	☑	☐		9.
Field Filtered Volume Received for Dissolved Tests?	☐	☐	☑	10. Is sediment visible in the dissolved container: ☐ YES ☐ NO
Is sufficient information available to reconcile the samples to the COC? **NOTE:** If ID/Date/Time don't match fill out section 11. Matrix: ☐ Oil ☑ Soil ☐ Water ☐ Other	☑	☐		11. **If NO, write ID/Date/Time of container below:** ☐ See Exceptions form ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked?	☐	☐	☑	12. Sample #:
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, < 2 pH, NaOH > 9 Sulfide, NaOH > 10 Cyanide)	☐	☐	☑	☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC, Oil & Grease, DRO/8015 (water) and Dioxins/PFAS	☐	☐	☑	Positive for Residual Chlorine: ☐ YES ☐ NO
NOTE: If adding preservation to the container, **verify with the PM first.** Clients may require adding preservative to the field and equipment blanks when this occurs.				**pH Paper Lot #** (Residual Chlorine / 0-6 Roll / 0-6 Strip / 0-14 Strip) ☐ See Exceptions form ENV-FRM-MIN4-0142
Headspace in Methyl Mercury Container?	☐	☐	☑	13.
Extra labels present on soil VOA or WIDRO containers?	☐	☐	☑	14.
Headspace in VOA Vials (greater than 6mm)?	☐	☐	☑	☐ See Exceptions form ENV-FRM-MIN4-0140
Trip Blanks Present?	☐	☐	☑	15.
Trip Blank Custody Seals Present?	☐	☐	☑	Pace Trip Blank Lot # (if purchased): _____

CLIENT NOTIFICATION / RESOLUTION **FIELD DATA REQUIRED:** ☐ YES ☐ NO

Person Contacted: _____ Date & Time: _____

Comments / Resolution: _____

Project Manager Review: Yeng Ozawa **Date:** 7/19/24

***NOTE:** When there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEQ Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers).*

Labeled By: JMW **Line:** 5

Workorder #: _____

No Temp Blank		
Read Temp	**Corrected Temp**	**Average temp**

PM Notified of Out of Temp Cooler? ☐ YES ☐ NO

If yes, indicate who was contacted, date and time.
If no, indicate reason why.

_____

Multiple Cooler Project? ☐ YES ☐ NO

If anything is OVER 6.0°C, you MUST document containers in this section HERE

Tracking Number	Temperature
404104705072	1.9

Out of Temp Sample ID	Container Type	# of Containers

pH Adjustment Log for Preserved Samples

Sample ID	Type Of Preserve	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance After Addition?		Initials
								YES	NO	
								☐	☐	
								☐	☐	
								☐	☐	
								☐	☐	
								☐	☐	
								☐	☐	
								☐	☐	
								☐	☐	

Comments:

_____

_____

_____

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:		**Section B** Required Project Information:		**Section C** Invoice Information:	
Company:	Pace Analytical	Report To:	Pace Analytical Subout Team	Attention:	Jake J. / Brett M. / Blair R. / Andy V.
Address:	12065 Lebanon Rd.	Copy To:		Company Name:	
Mt. Juliet, TN 37122				Address:	
Email:	MTJLSuboutTeam@pacelabs.com	Purchase Order #:	L1757520	Pace Quote:	
Phone: (615) 773-9756	Fax: (615) 758-5859	Project Name:	J14-496 238-14 Flowline Release	Pace Project Manager:	Kirsten Hogberg
Requested Due Date:	31-Jul	Project #:		Pace Profile #:	38076

Regulatory Agency
State / Location
CO

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	SUB TABLE 915 INORGANIC	Residual Chlorine (Y/N)	
1	20240715-ELU J14 496-(23B-14-P	SL				15-Jul	10:15		1								1				Hot Water Soluble Boron, SAR i
2	20240715-ELU J14 496-(23B-14-B	SL				15-Jul	10:40		1								1				Hot Water Soluble Boron, SAR i
3	20240715-ELU J14 496-(23B-14-N	SL				15-Jul	10:05		1								1				Hot Water Soluble Boron, SAR i
4	20240715-ELU J14 496-(23B-14-S	SL				15-Jul	10:35		1								1				Hot Water Soluble Boron, SAR i
5	20240715-ELU J14 496-(23B-14-E	SL				15-Jul	10:20		1								1				Hot Water Soluble Boron, SAR i
6	20240715-ELU J14 496-(23B-14-W	SL				15-Jul	10:30		1								1				Hot Water Soluble Boron, SAR i
7																					
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	James C Huckaba	18-Jul	10:12			
Pace Analytical Batch: WG2325486						
Pace Analytical SDGs: L1757520						
Location: Minneapolis, MN 55414						

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: **DATE Signed:**

SAMPLE CONDITIONS			
TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

ANALYTICAL REPORT

July 18, 2022

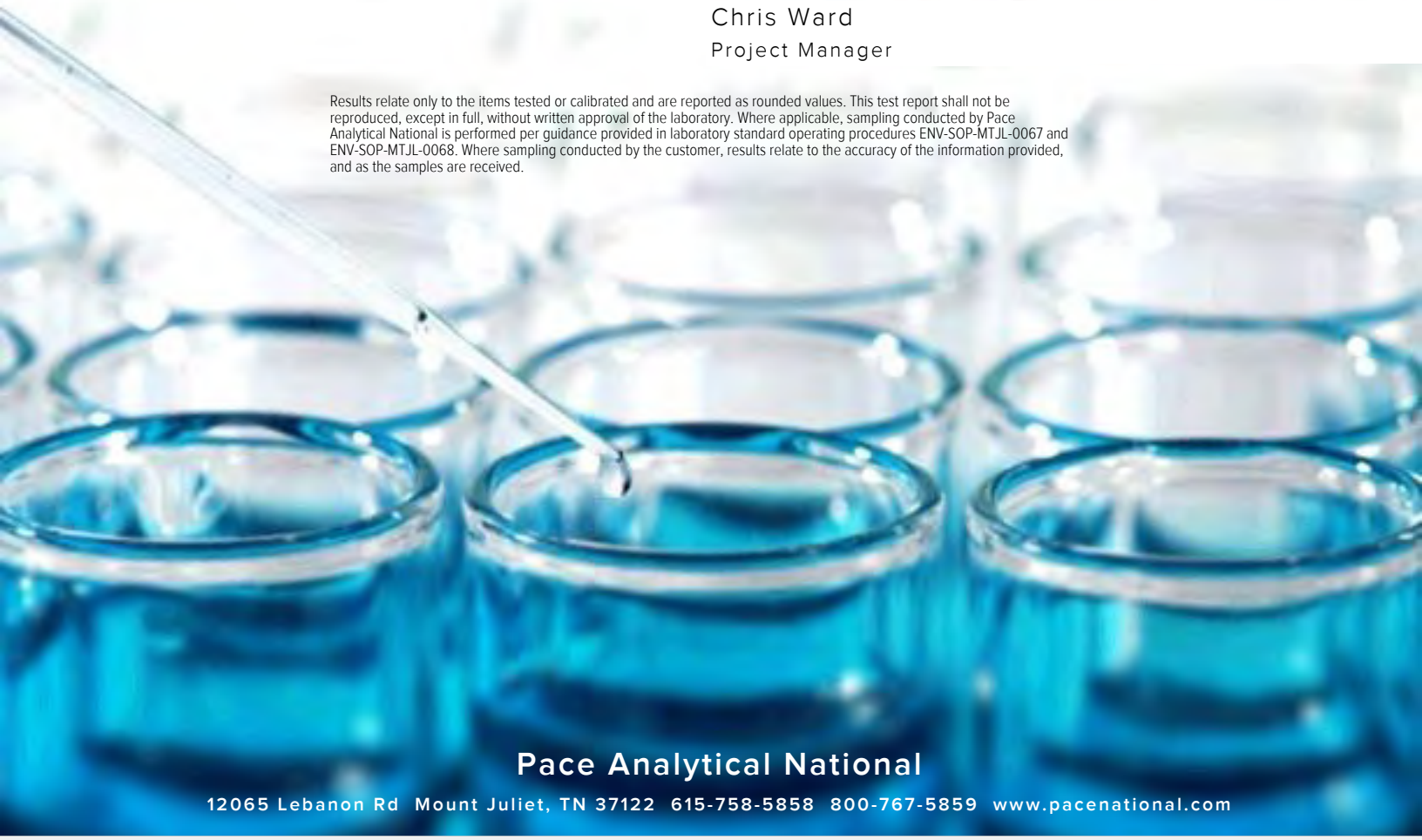
Caerus Oil and Gas

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
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

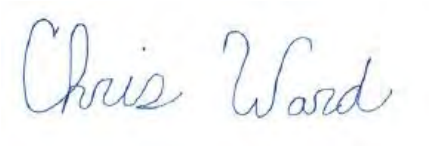
20220620-J14_496-BGE(1520)@30' L1507626-01 Solid

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

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

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	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

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

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

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

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

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

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: ____

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

Container Preservative Type **

Lab Project Manager:

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

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Container Type: Plastic (P) or Glass (G)	Table 915-1 VOCs	TPH (ORO, GRO, DRO)	Table 915-1 Metal's	Table 915-1 PAHs	pH, EC, SAR, Arsenic	Boron (Hot Water Soluble Soil)	Analyses	Analyses	Analyses	Analyses	Lab Profile/Line:
20220620-J14_496-BGE(1620)@30'	SL	G	6/20/2022	1520				1	P		X	X		X	X					L1507626 -01

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 #: 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: 0.0 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

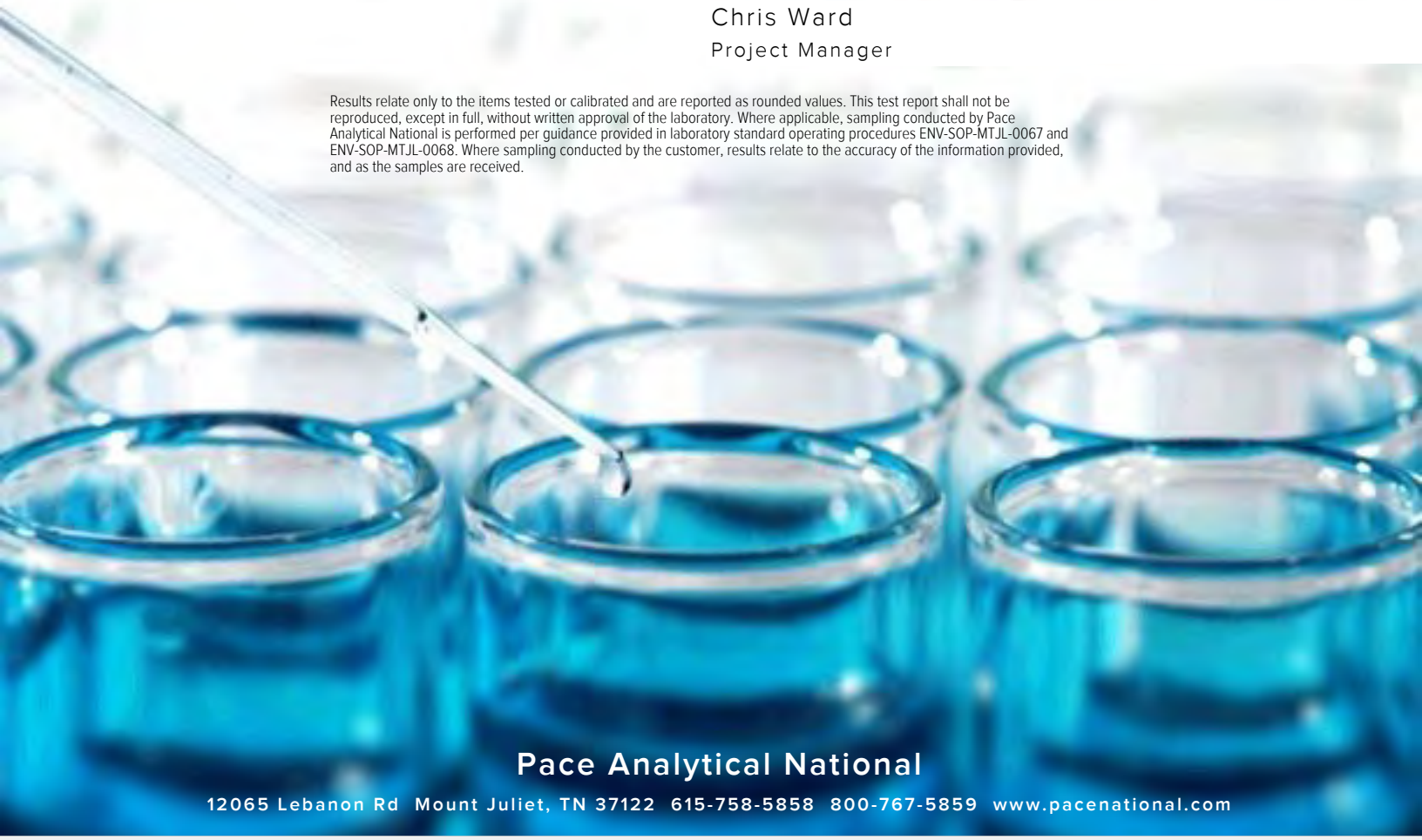
Caerus Oil and Gas

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
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

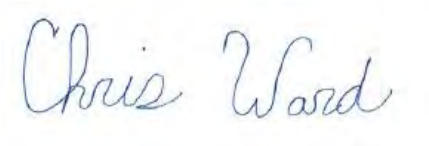
20220620-J14_496BGE(1640)@40' L1507629-01 Solid

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

QUALITY CONTROL SUMMARY

L1507629-01

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	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

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

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

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

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

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

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)	Lab Sample # / Comments
20220620-J14_496-BGE(1640)@40'	SL	G	6/20/2022	1640				1	P		X	X		X	X	L1507629

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

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

F229

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

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

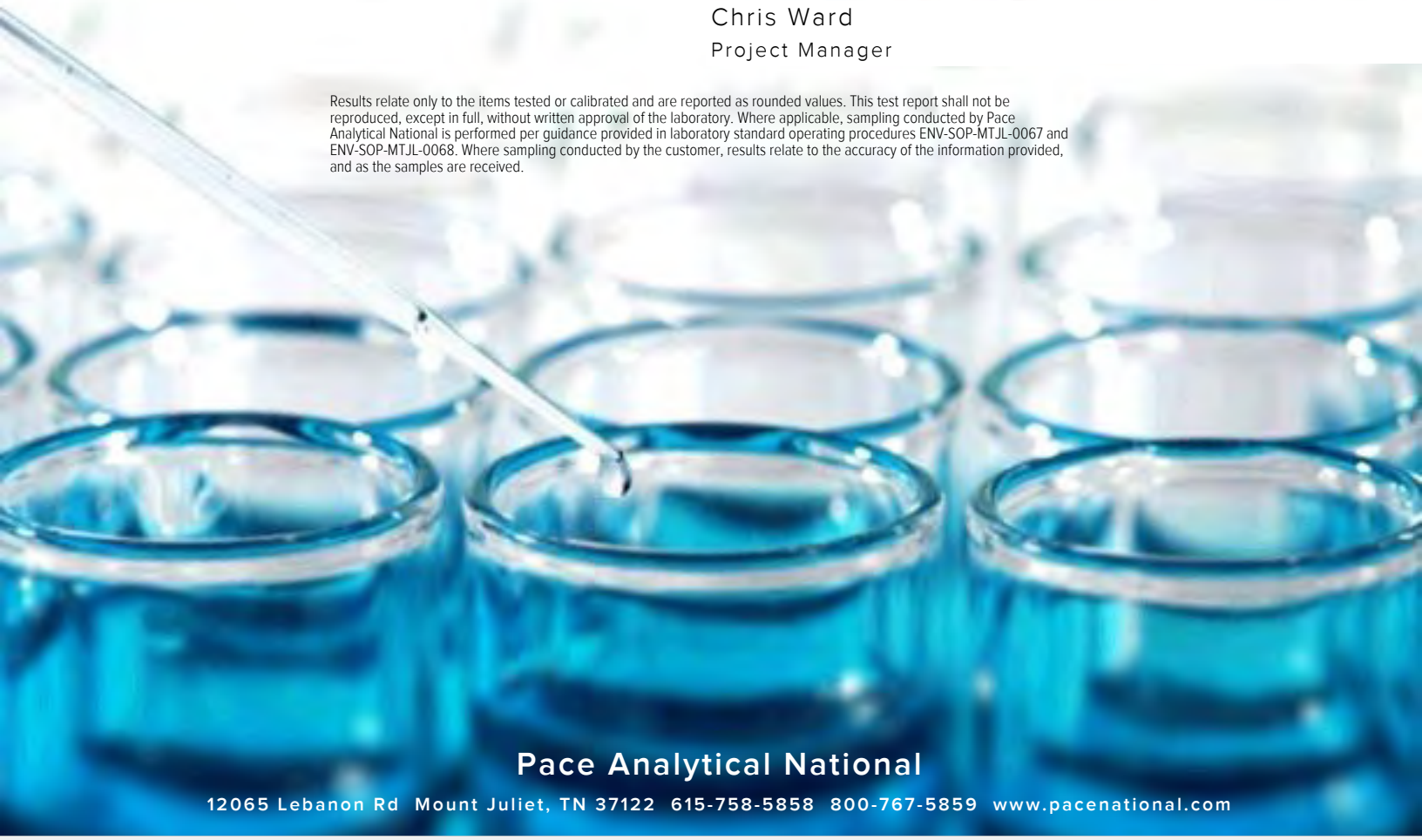
Caerus Oil and Gas

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
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

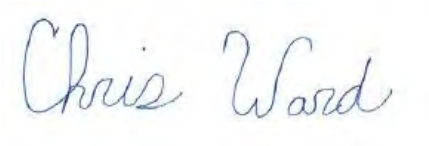
20220620-J14_496BGE(1455)@10'-12' L1507636-01 Solid

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
	SAR				
Sodium Adsorption Ratio	1.38		1	07/14/2022 15:10	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 13:41	WG1887036

Wet Chemistry by Method 9045D

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

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Arsenic	3.66		1.00	5	06/30/2022 17:52	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 04:49	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	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

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

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

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

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

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

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

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)					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

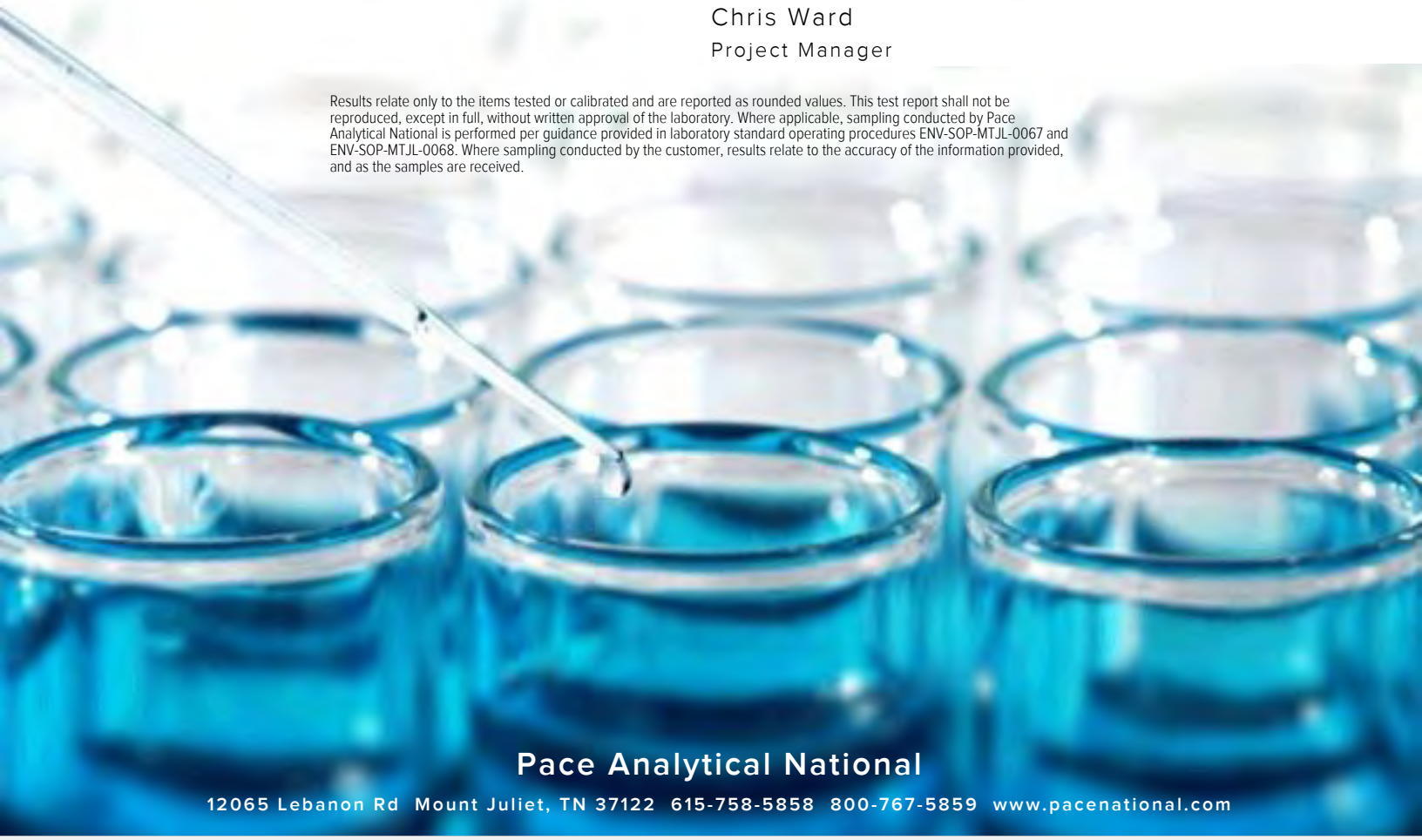
Caerus Oil and Gas

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
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

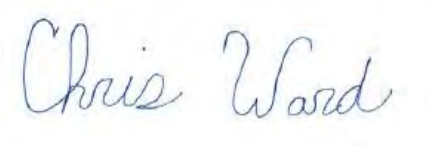
20220620-J14_496BGE(1510)@20' L1507638-01 Solid

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 su	DUP Result su	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
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 su	DUP Result su	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
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 su	LCS Result su	LCS Rec. %	Rec. Limits %	LCS Qualifier
pH	10.0	9.92	99.2	99.0-101	

Sample Narrative:

LCS: 9.92 at 23C

QUALITY CONTROL SUMMARY

L1507638-01

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

QUALITY CONTROL SUMMARY

L1507638-01

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 **

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(1510)@20'	SL	G	6/20/2022	1510				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:
L1507638
-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: DRY

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