December 5, 2022

Blair Rollins
Environmental Specialist
Caerus Oil & Gas LLC
brollins@caerusoilandgas.com

Report of Work Completed – Meter Skid Release

COGCC Location Name (ID)	SG/L24 496 (426478)
Client Location Name	L24 496
COGCC Remediation Project Number	26046
Legal Description	NWSW Sec. 24 T4S-R96W
Coordinates (Lat/Long)	39.685031 / -108.123236
County	Garfield County, Colorado

Mr. Rollins,

Confluence Compliance Companies, LLC (Confluence) prepared this Report of Work Completed (ROWC) for Caerus Oil & Gas LLC (Caerus) to document findings of site investigation conducted in association with release investigation at the L24 496 well pad (Location). The Location is 16.4 miles northwest of Parachute, Colorado in Garfield County, as illustrated in the attached Topographic Location Map. Additional information on the Location is provided in the title block above, attached Site Diagram, and laboratory analytical reports. This ROWC provides background on the Location, methods used to complete the investigation, results of the investigation, and recommendations for how to proceed with this information.

Background

On August 4, 2022, a field inspection identified a leaking bull plug on a meter skid. Soil which was visually saturated with produced water was removed using a hydrovacuum truck. Colorado Oil and Gas Conservation Commission (COGCC) Form 19 Document 403127657 was submitted to open Spill/Release Point ID 482681. COGCC Form 27 Document 403231000 was later submitted to open Remediation Project Number 26046.

Methodology

On October 20, 2022, Confluence provided sampling support to characterize soil beneath the point of release (POR). One soil sample was collected in the excavated area at 1.5 feet below ground surface (bgs). The soil sample was characterized using visual and olfactory observations and field-screened with a photoionization detector (PID).

The soil sample was collected in laboratory provided jars, immediately placed on ice, and shipped under a completed chain-of-custody form to Pace Analytical Services (Pace) for analysis of COGCC 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 site investigation activities.

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

Lithology and Hydrogeology

Lithology at the Location is characterized as clayey sand with shale. Groundwater is expected to flow northwest toward East Fork and ultimately to the White River, located 22.4 miles north of the Location. Depth to groundwater is estimated to be greater than 300 feet bgs because the Location sits approximately 380 feet higher in elevation than the East Fork tributary, located 0.21 miles northwest of the Location.

Initial Site Investigation

During site investigation, field screening results did not indicate soil impacts. No hydrocarbon staining or odor were noted in the investigation area with a PID measurement of 2.4 parts per million (ppm). Analytical results of the POR sample are within allowable limits for COGCC Table 915-1 Residential Soil Screening Levels except for pH and arsenic. Arsenic exceeds allowable limits at 1.61 milligrams per kilogram (mg/kg), and pH exceeds allowable limits at 8.66.

Recommendations and Analysis

Although arsenic and pH values exceed allowable limits within the investigation area, analytical results of background samples collected from the nearby K24 Compressor Station (COGCC Location ID 431429) and A24 Pad (COGCC Location ID 458475) exceed allowable limits for arsenic at values ranging from 2.61 to 4.67 mg/kg and allowable limits for pH at values ranging from 8.31 to 8.74. The K24 Compressor Station is 0.14 miles east of the Location, and the A24 is 0.62 miles northwest of the Location. According to the United States Geologic Survey (USGS) [1] and National Resource Conservation Service (NRCS) [2], the Location is found within both the Parachute-Rhone Loam and Irigul-Starman channery loams soil types, the K24 Compressor station is found within the Parachute-Rhone Loam, and the A24 is found within the Irigul-Starman channery loams. Due to the identical soil types, it is reasonable to conclude that the background samples collected from the K24 Compressor Station and A24 are representative of soil conditions at the Location.

Based on background data, Confluence recommends that Caerus request consideration of COGCC Table 915-1 Footnote 1 to establish an alternative allowable limit for pH of 8.74 and Footnote 11 to establish an alternative allowable limit for arsenic of 5.84 mg/kg. Due to the significant elevation difference between the Location and nearest surface water, Confluence recommends that Caerus request to compare analytical results to COGCC Table 915-1 Residential Soil Screening Levels. Assuming the proposed screening levels and alternative allowable limit are approved, Confluence recommends that Caerus request closure of the remediation project with a no further action (NFA) determination.

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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Project Manager
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Chris McKisson
Managing Partner
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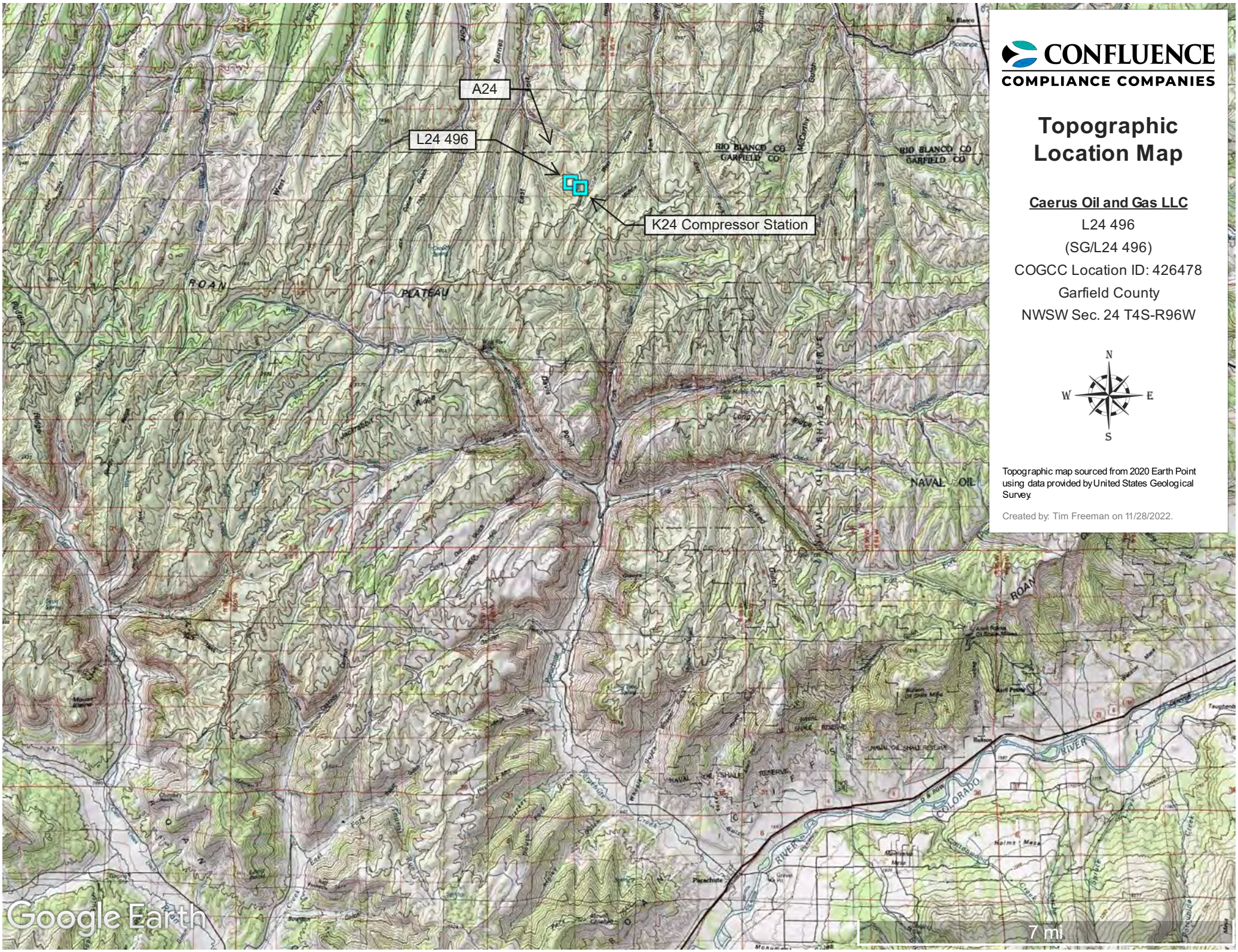
Attachments

- Topographic Location Map
- Site Diagram – Excavation
- Laboratory Results Summary Table
- Laboratory Reports

References

1. USGS Staff, United States Geological Survey, United States Department of Interior. National Geologic Map Database. Available online at the following link: https://ngmdb.usgs.gov/Prodesc/proddesc_68589.htm. Accessed [11/28/2022].
2. Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at the following link: http://websoilsurvey.sc.egov.usda.gov/. Accessed [11/28/2022].



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COMPLIANCE COMPANIES

Topographic Location Map

Caerus Oil and Gas LLC

L24 496

(SG/L24 496)

COGCC Location ID: 426478

Garfield County

NWSW Sec. 24 T4S-R96W

N
W E
S

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

Created by: Tim Freeman on 11/28/2022.

CONFLUENCE
COMPLIANCE COMPANIES

Site Diagram
Excavation

Caerus Oil and Gas LLC
L24 496
(SG/L24 496)
COGCC Location ID: 426478
Garfield County
NWSW Sec. 24 T4S-R96W

N
W E
S

Legend
Soil Sample – 10/20/2022
Excavation Extent – 10/20/2022

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

Map created by: Andrew Smith on 10/24/2022.

CONFLUENCE

Laboratory Results Summary Table - Soil
L24 Meter Skid Release

12/2/2022

	Soil Screening and Remediation Limits				Organic Compounds (mg/kg [ppm])																									
			COGCC Table 915-1 Residential -->	NA	500	NA	NA	NA	1.2	490	5.8	58	30	27	360	1800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	18	24	2	180
Sample Date	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
10/20/2022	Meter Skid	-1.5	**20221020-L24-POR@1.5'**	**2.4**	**6.73**	**0.149**	*<4.00*	**6.58**	*<0.00100*	*<0.00500*	**0.00300**	**0.0156**	**0.00858**	*<0.00500*	*<0.00600*	*<0.00600*	*<0.00600*	*<0.00600*	*<0.00600*	*<0.00600*	*<0.00600*	*<0.00600*	*<0.00600*	*<0.00600*	*<0.00600*	*<0.00600*	*<0.0200*	*<0.0200*	*<0.0200*	*<0.00600*
8/5/2021	Background	-0.5	**20210805-K24-SBG-6"-1330**	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
8/5/2021	Background	-0.5	**20210805-K24-EBG-6"-1340**	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
3/20/2019	Background	-0.5	**20190320-A24-496 (SS01) 0-6**	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
3/20/2019	Background	-0.5	**20190320-A24-496 (SS02) 0-6**	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
3/20/2019	Background	-0.5	**20190320-A24-496 (SS03) 0-6**	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*

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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
L24 Meter Skid Release

12/2/2022

		Soil Screening and Remediation Limits			Soil Suitability for Reclamation				Metals (mg/kg [ppm])									
			COGCC Table 915-1 Residential -->	NA	4	6	6-8.3	2	0.68	15000	71	0.3	3100	400	1500	390	390	23000
Sample Date	Solid/Soil Source (Equipment) [Vault/Sump, Separator, Tank Battery, Dump Line, Pit, Cuttings, Background, etc.]	Depth - Z (feet) (NEGATIVE VALUE) below ground surface (bgs)	Sample ID	PID (ppm)	EC (Specific Conductance) (millimhos/centimeter) (by saturated paste method)	SAR (Sodium Adsorption Ratio) (calculation) (by saturated paste method)	pH (pH Units) (by saturated paste method)	Boron - Hot Water Soluble (mg/L)	Arsenic	Barium	Cadmium (mg/kg)	Chromium (VI)	Copper	Lead	Nickel	Selenium	Silver	Zinc
10/20/2022	Meter Skid	-1.5	**20221020-L24-POR@1.5'**	**2.4**	**0.305**	**5.72**	**8.66**	**0.325**	**1.61**	**735**	*<0.500*	*<1.00*	**12.5**	**8.64**	**12.2**	*<2.00*	*<1.00*	**33.8**
8/5/2021	Background	-0.5	**20210805-K24-SBG-6"-1330**	*NA*	**0.102**	**0.0826**	**6.94**	*NA*	**2.61**	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
8/5/2021	Background	-0.5	**20210805-K24-EBG-6"-1340**	*NA*	**0.119**	**0.136**	**7.15**	*NA*	**4.67**	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
3/20/2019	Background	-0.5	**20190320-A24-496 (SS01) 0-6**	*NA*	**0.115**	**2.15**	**8.31**	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
3/20/2019	Background	-0.5	**20190320-A24-496 (SS02) 0-6**	*NA*	**0.095**	**1.34**	**8.44**	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
3/20/2019	Background	-0.5	**20190320-A24-496 (SS03) 0-6**	*NA*	**0.0912**	**1.02**	**8.74**	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*

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

ANALYTICAL REPORT

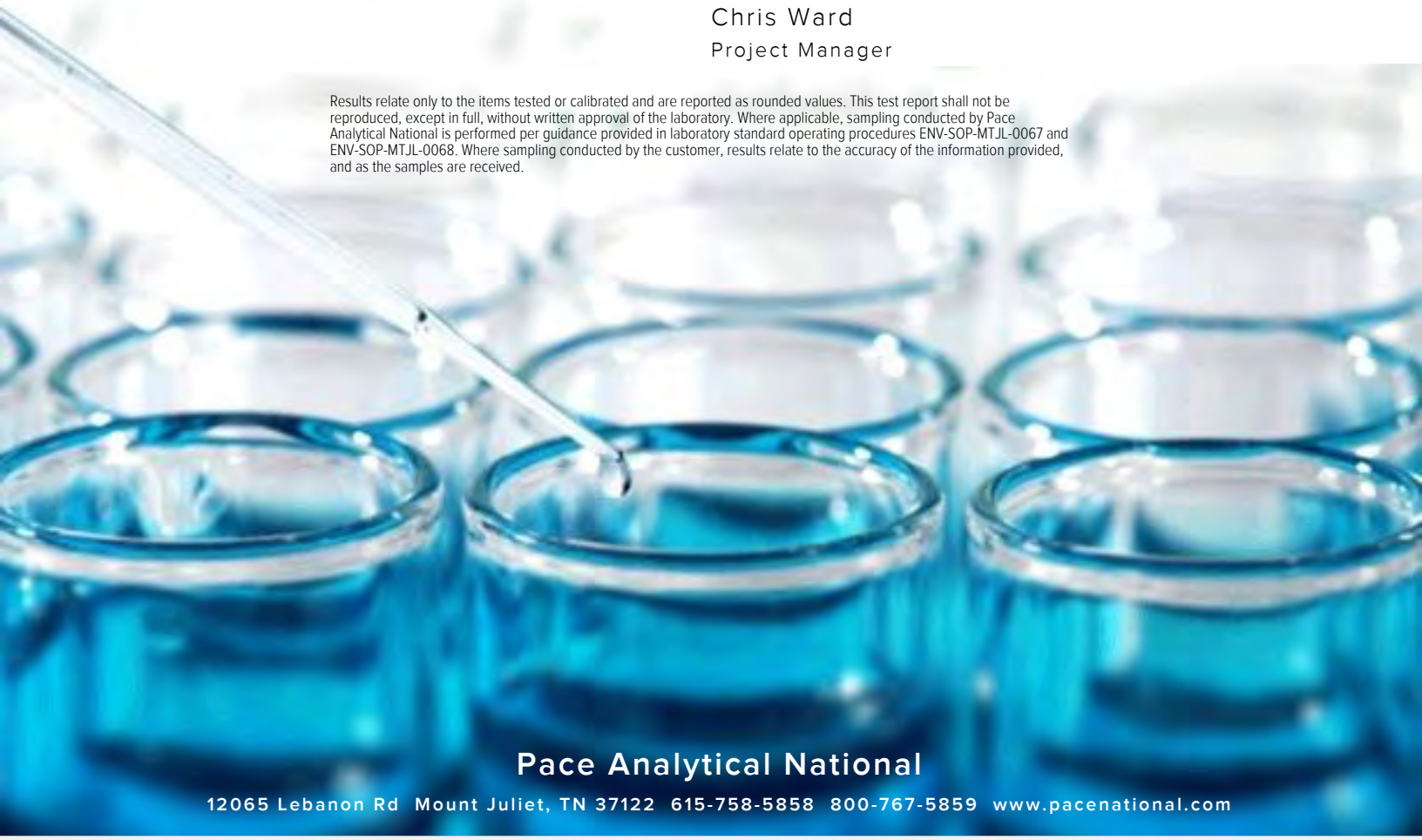
November 07, 2022

Caerus Oil and Gas

Sample Delivery Group:	L1549628
Samples Received:	10/22/2022
Project Number:	
Description:	L24 496 Meter Skid Release
Site:	L24 496
Report To:	Brett Middleton 143 Diamond Avenue Parachute, CO 81635

Entire Report Reviewed By: Chris Ward

Chris Ward
Project Manager



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

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SAMPLE SUMMARY

20221020-L24-POR@1.5' L1549628-01 Solid

Collected by: Andrew Smith
Collected date/time: 10/20/22 09:50
Received date/time: 10/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1953995	1	11/07/22 12:34	11/07/22 12:34	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1950752	1	10/28/22 18:27	11/01/22 10:06	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1951177	1	10/29/22 14:00	10/29/22 16:00	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1948687	1	10/27/22 12:07	10/28/22 12:00	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1950986	1	11/05/22 17:35	11/07/22 11:10	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1947477	1	10/26/22 11:38	10/31/22 19:14	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1950987	5	11/05/22 17:51	11/06/22 20:30	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1951259	1	10/26/22 17:06	10/29/22 19:10	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1950817	1	10/26/22 17:06	10/29/22 12:31	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1949800	1	10/27/22 23:11	10/28/22 10:47	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1949779	1	10/27/22 23:18	10/28/22 10:08	AMM	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	5.72		1	11/07/2022 12:34	WG1953995

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Hexavalent Chromium	ND		1.00	1	11/01/2022 10:06	WG1950752

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	pH				
pH	8.66	T8	1	10/29/2022 16:00	WG1951177

Sample Narrative:

L1549628-01 WG1951177: 8.66 at 20.7C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	305		10.0	1	10/28/2022 12:00	WG1948687

Sample Narrative:

L1549628-01 WG1948687: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Barium	735		0.500	1	11/07/2022 11:10	WG1950986
Cadmium	ND		0.500	1	11/07/2022 11:10	WG1950986
Copper	12.5		2.00	1	11/07/2022 11:10	WG1950986
Lead	8.64		0.500	1	11/07/2022 11:10	WG1950986
Nickel	12.2		2.00	1	11/07/2022 11:10	WG1950986
Selenium	ND		2.00	1	11/07/2022 11:10	WG1950986
Silver	ND		1.00	1	11/07/2022 11:10	WG1950986
Zinc	33.8		5.00	1	11/07/2022 11:10	WG1950986

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/l		mg/l			
Hot Water Sol. Boron	0.325		0.200	1	10/31/2022 19:14	WG1947477

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Arsenic	1.61		1.00	5	11/06/2022 20:30	WG1950987

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	0.149		0.100	1	10/29/2022 19:10	WG1951259
(S) a,a,a-Trifluorotoluene(FID)	*81.3*		*77.0-120*		*10/29/2022 19:10*	WG1951259

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	10/29/2022 12:31	WG1950817
Toluene	ND		0.00500	1	10/29/2022 12:31	WG1950817
Ethylbenzene	0.00300		0.00250	1	10/29/2022 12:31	WG1950817
Xylenes, Total	0.0156		0.00650	1	10/29/2022 12:31	WG1950817
1,2,4-Trimethylbenzene	0.00858		0.00500	1	10/29/2022 12:31	WG1950817
1,3,5-Trimethylbenzene	ND		0.00500	1	10/29/2022 12:31	WG1950817
(S) Toluene-d8	*101*		*75.0-131*		*10/29/2022 12:31*	WG1950817
(S) 4-Bromofluorobenzene	*106*		*67.0-138*		*10/29/2022 12:31*	WG1950817
(S) 1,2-Dichloroethane-d4	*85.1*		*70.0-130*		*10/29/2022 12:31*	WG1950817

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	10/28/2022 10:47	WG1949800
C28-C36 Motor Oil Range	6.58		4.00	1	10/28/2022 10:47	WG1949800
(S) o-Terphenyl	*46.5*		*18.0-148*		*10/28/2022 10:47*	WG1949800

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.00600	1	10/28/2022 10:08	WG1949779
Anthracene	ND		0.00600	1	10/28/2022 10:08	WG1949779
Benzo(a)anthracene	ND		0.00600	1	10/28/2022 10:08	WG1949779
Benzo(b)fluoranthene	ND		0.00600	1	10/28/2022 10:08	WG1949779
Benzo(k)fluoranthene	ND		0.00600	1	10/28/2022 10:08	WG1949779
Benzo(a)pyrene	ND		0.00600	1	10/28/2022 10:08	WG1949779
Chrysene	ND		0.00600	1	10/28/2022 10:08	WG1949779
Dibenz(a,h)anthracene	ND		0.00600	1	10/28/2022 10:08	WG1949779
Fluoranthene	ND		0.00600	1	10/28/2022 10:08	WG1949779
Fluorene	ND		0.00600	1	10/28/2022 10:08	WG1949779
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/28/2022 10:08	WG1949779
1-Methylnaphthalene	ND		0.0200	1	10/28/2022 10:08	WG1949779
2-Methylnaphthalene	ND		0.0200	1	10/28/2022 10:08	WG1949779
Naphthalene	ND		0.0200	1	10/28/2022 10:08	WG1949779
Pyrene	ND		0.00600	1	10/28/2022 10:08	WG1949779
(S) p-Terphenyl-d14	*86.7*		*23.0-120*		*10/28/2022 10:08*	WG1949779
(S) Nitrobenzene-d5	*75.9*		*14.0-149*		*10/28/2022 10:08*	WG1949779
(S) 2-Fluorobiphenyl	*75.6*		*34.0-125*		*10/28/2022 10:08*	WG1949779

Method Blank (MB)

(MB) R3856506-1 11/01/22 09:33

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

L1548093-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1548093-03 11/01/22 09:56 • (DUP) R3856506-3 11/01/22 10:01

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	1.12	ND	1	200	P1	20

L1550319-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1550319-01 11/01/22 11:50 • (DUP) R3856506-8 11/01/22 11:55

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) R3856506-2 11/01/22 09:40

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	10.0	11.0	110	80.0-120	

L1550314-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1550314-01 11/01/22 11:14 • (MS) R3856506-5 11/01/22 11:24 • (MSD) R3856506-6 11/01/22 11:40

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	20.0	ND	20.6	21.1	101	103	1	75.0-125			2.28	20

L1550314-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1550314-01 11/01/22 11:14 • (MS) R3856506-7 11/01/22 11:45

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	643	ND	634	98.6	50	75.0-125	

L1549652-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1549652-01 10/29/22 16:00 • (DUP) R3854591-2 10/29/22 16:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.67	7.67	1	0.000		1

Sample Narrative:

OS: 7.67 at 20.6C

DUP: 7.67 at 20.7C

L1549685-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1549685-10 10/29/22 16:00 • (DUP) R3854591-3 10/29/22 16:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.58	8.57	1	0.117		1

Sample Narrative:

OS: 8.58 at 20.2C

DUP: 8.57 at 20.3C

Laboratory Control Sample (LCS)

(LCS) R3854591-1 10/29/22 16:00

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

Sample Narrative:

LCS: 9.91 at 20.1C

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

Method Blank (MB)

(MB) R3854202-1 10/28/22 12:00

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

Sample Narrative:
BLANK: at 25C

L1549639-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1549639-02 10/28/22 12:00 • (DUP) R3854202-3 10/28/22 12:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	1980	1970	1	0.405		20

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

L1550477-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1550477-01 10/28/22 12:00 • (DUP) R3854202-4 10/28/22 12:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	3110	3120	1	0.321		20

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

Laboratory Control Sample (LCS)

(LCS) R3854202-2 10/28/22 12:00

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	1120	1130	101	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3857786-1 11/07/22 10:21

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	0.503	J	0.400	2.00
Lead	U		0.208	0.500
Nickel	U		0.132	2.00
Selenium	U		0.764	2.00
Silver	U		0.127	1.00
Zinc	U		0.832	5.00

Laboratory Control Sample (LCS)

(LCS) R3857786-2 11/07/22 10:23

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	100	100	80.0-120	
Cadmium	100	99.4	99.4	80.0-120	
Copper	100	105	105	80.0-120	
Lead	100	94.1	94.1	80.0-120	
Nickel	100	93.1	93.1	80.0-120	
Selenium	100	98.3	98.3	80.0-120	
Silver	20.0	18.7	93.5	80.0-120	
Zinc	100	95.2	95.2	80.0-120	

L1549429-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1549429-01 11/07/22 10:26 • (MS) R3857786-5 11/07/22 10:34 • (MSD) R3857786-6 11/07/22 10:37

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	1340	1510	1990	172	648	1	75.0-125	V	J3 V	27.2	20
Cadmium	100	ND	103	112	103	112	1	75.0-125			7.91	20
Copper	100	11.6	123	131	111	120	1	75.0-125			6.71	20
Lead	100	10.1	110	115	99.9	105	1	75.0-125			4.21	20
Nickel	100	14.6	111	122	96.0	107	1	75.0-125			9.48	20
Selenium	100	ND	98.0	106	98.0	106	1	75.0-125			7.53	20
Silver	20.0	ND	18.8	20.6	94.0	103	1	75.0-125			9.25	20
Zinc	100	47.1	137	141	89.6	93.7	1	75.0-125			2.99	20

Method Blank (MB)

(MB) R3855266-1 10/31/22 18:04

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) R3855266-2 10/31/22 18:06 • (LCSD) R3855266-3 10/31/22 18:09

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	0.936	0.949	93.6	94.9	80.0-120			1.37	20

Method Blank (MB)

(MB) R3857571-1 11/06/22 19:29

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) R3857571-2 11/06/22 19:33

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	96.5	96.5	80.0-120	

L1549429-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1549429-01 11/06/22 19:36 • (MS) R3857571-5 11/06/22 19:45 • (MSD) R3857571-6 11/06/22 19:48

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	3.17	98.2	109	95.1	105	5	75.0-125			10.1	20

Method Blank (MB)

(MB) R3855147-2 10/29/22 18:35

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)	*85.3*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3855147-1 10/29/22 17:23

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.16	75.6	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*89.1*	*77.0-120*	

Method Blank (MB)

(MB) R3856714-3 10/29/22 06:31

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	*100*			*75.0-131*
(S) 4-Bromofluorobenzene	*109*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*91.3*			*70.0-130*

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

(LCS) R3856714-1 10/29/22 05:14 • (LCSD) R3856714-2 10/29/22 05:33

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	0.117	0.124	93.6	99.2	70.0-123			5.81	20
Toluene	0.125	0.110	0.116	88.0	92.8	75.0-121			5.31	20
Ethylbenzene	0.125	0.107	0.110	85.6	88.0	74.0-126			2.76	20
Xylenes, Total	0.375	0.337	0.353	89.9	94.1	72.0-127			4.64	20
1,2,4-Trimethylbenzene	0.125	0.107	0.111	85.6	88.8	70.0-126			3.67	20
1,3,5-Trimethylbenzene	0.125	0.105	0.109	84.0	87.2	73.0-127			3.74	20
(S) Toluene-d8				*95.7*	*96.5*	*75.0-131*				
(S) 4-Bromofluorobenzene				*110*	*108*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*97.8*	*99.4*	*70.0-130*				

Method Blank (MB)

(MB) R3854328-1 10/28/22 08:37

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	*78.8*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3854328-2 10/28/22 08:50

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	40.4	80.8	50.0-150	
(S) o-Terphenyl			*85.1*	*18.0-148*	

L1549633-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1549633-01 10/28/22 12:05 • (MS) R3854328-3 10/28/22 12:18 • (MSD) R3854328-4 10/28/22 12:31

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	47.7	ND	67.0	73.0	64.8	77.5	10	50.0-150			8.57	20
(S) o-Terphenyl					*88.1*	*98.4*		*18.0-148*				

Sample Narrative:

OS: Cannot run at lower dilution due to viscosity of extract

Method Blank (MB)

(MB) R3854167-2 10/28/22 03:12

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	*84.1*			*23.0-120*
(S) Nitrobenzene-d5	*74.3*			*14.0-149*
(S) 2-Fluorobiphenyl	*81.2*			*34.0-125*

Laboratory Control Sample (LCS)

(LCS) R3854167-1 10/28/22 02:52

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0552	69.0	50.0-120	
Anthracene	0.0800	0.0540	67.5	50.0-126	
Benzo(a)anthracene	0.0800	0.0552	69.0	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0537	67.1	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0529	66.1	49.0-125	
Benzo(a)pyrene	0.0800	0.0500	62.5	42.0-120	
Chrysene	0.0800	0.0581	72.6	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0545	68.1	47.0-125	
Fluoranthene	0.0800	0.0554	69.3	49.0-129	
Fluorene	0.0800	0.0562	70.3	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0559	69.9	46.0-125	
1-Methylnaphthalene	0.0800	0.0525	65.6	51.0-121	
2-Methylnaphthalene	0.0800	0.0536	67.0	50.0-120	
Naphthalene	0.0800	0.0554	69.3	50.0-120	
Pyrene	0.0800	0.0528	66.0	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R3854167-1 10/28/22 02:52

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
(S) p-Terphenyl-d14			*91.8*	*23.0-120*	
(S) Nitrobenzene-d5			*78.9*	*14.0-149*	
(S) 2-Fluorobiphenyl			*88.4*	*34.0-125*	

L1549545-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1549545-01 10/28/22 08:49 • (MS) R3854167-3 10/28/22 09:08 • (MSD) R3854167-4 10/28/22 09:28

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 %
Acenaphthene	0.0788	ND	0.0494	0.0481	62.7	61.0	1	14.0-127			2.67	27
Anthracene	0.0788	ND	0.0473	0.0474	60.0	60.2	1	10.0-145			0.211	30
Benzo(a)anthracene	0.0788	ND	0.0483	0.0479	61.3	60.8	1	10.0-139			0.832	30
Benzo(b)fluoranthene	0.0788	ND	0.0462	0.0440	58.6	55.8	1	10.0-140			4.88	36
Benzo(k)fluoranthene	0.0788	ND	0.0447	0.0425	56.7	53.9	1	10.0-137			5.05	31
Benzo(a)pyrene	0.0788	ND	0.0483	0.0470	61.3	59.6	1	10.0-141			2.73	31
Chrysene	0.0788	ND	0.0529	0.0513	67.1	65.1	1	10.0-145			3.07	30
Dibenz(a,h)anthracene	0.0788	ND	0.0470	0.0455	59.6	57.7	1	10.0-132			3.24	31
Fluoranthene	0.0788	ND	0.0508	0.0508	64.5	64.5	1	10.0-153			0.000	33
Fluorene	0.0788	ND	0.0501	0.0504	63.6	64.0	1	11.0-130			0.597	29
Indeno(1,2,3-cd)pyrene	0.0788	ND	0.0483	0.0469	61.3	59.5	1	10.0-137			2.94	32
1-Methylnaphthalene	0.0788	ND	0.0483	0.0486	61.3	61.7	1	10.0-142			0.619	28
2-Methylnaphthalene	0.0788	ND	0.0506	0.0507	64.2	64.3	1	10.0-137			0.197	28
Naphthalene	0.0788	ND	0.0496	0.0501	62.9	63.6	1	10.0-135			1.00	27
Pyrene	0.0788	ND	0.0495	0.0478	62.8	60.7	1	10.0-148			3.49	35
(S) p-Terphenyl-d14					*80.0*	*74.1*		*23.0-120*				
(S) Nitrobenzene-d5					*78.0*	*72.5*		*14.0-149*				
(S) 2-Fluorobiphenyl					*81.1*	*75.9*		*34.0-125*				

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.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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

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

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

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

Pace Analytical

CHAIN-OF-CUSTODY Analytical Request Document

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

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

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

ALL BOLD OUTLINED AREAS are for LAB USE ONLY

Company: Caerus Oil and Gas LLC	Billing Information: Info on file
Address: Info on file	
Report To: Jake Janicek, Brett Middleton, Blair Rollins	Email To: info on file
Copy To: Chris McKisson, remediation@confluence-cc.com	Site Collection Info/Address:
Customer Project Name/Number: L24 496 Meter Skid Release	State: CO / County/City: Garfield / Time Zone Collected: [ ]PT [X]MT [ ]CT [ ]ET

Container Preservative Type **

Lab Project Manager:

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

Phone: Email:	Site/Facility ID #: L24 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 Turnaround	Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: (Expedite Charges Apply) [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day	Field Filtered (if applicable): [ ] Yes [ ] No Analysis: _____

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

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Container Type: Plastic (P) or Glass (G)	Analyses: Table 915-1 VOCs	TPH (ORO, GRO, DRO)	Table 915-1 Metal's	Table 915-1 PAHs	pH, EC, SAR	Boron (Hot Water Soluble Soil)
20221020-L24-POR@1.5'	SL	G	10/20/2022	0950				2	G	X	X	X	X	X	X

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:
L1549628
-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 #: 5016 1232 4587

Samples received via: FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: GBA7
Cooler 1 Temp Upon Receipt: 1.6 oC
Cooler 1 Therm Corr. Factor: 0 oC
Cooler 1 Corrected Temp: 1.6 oC
Comments:

E094

Relinquished by/Company: (Signature) A Smith	Date/Time: 10/21/22 1400	Received by/Company: (Signature)	Date/Time:	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Acctnum: Template: Prelogin:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time: 10-22-22 0900	PM: PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: ____ of: ____

ANALYTICAL REPORT

August 13, 2021

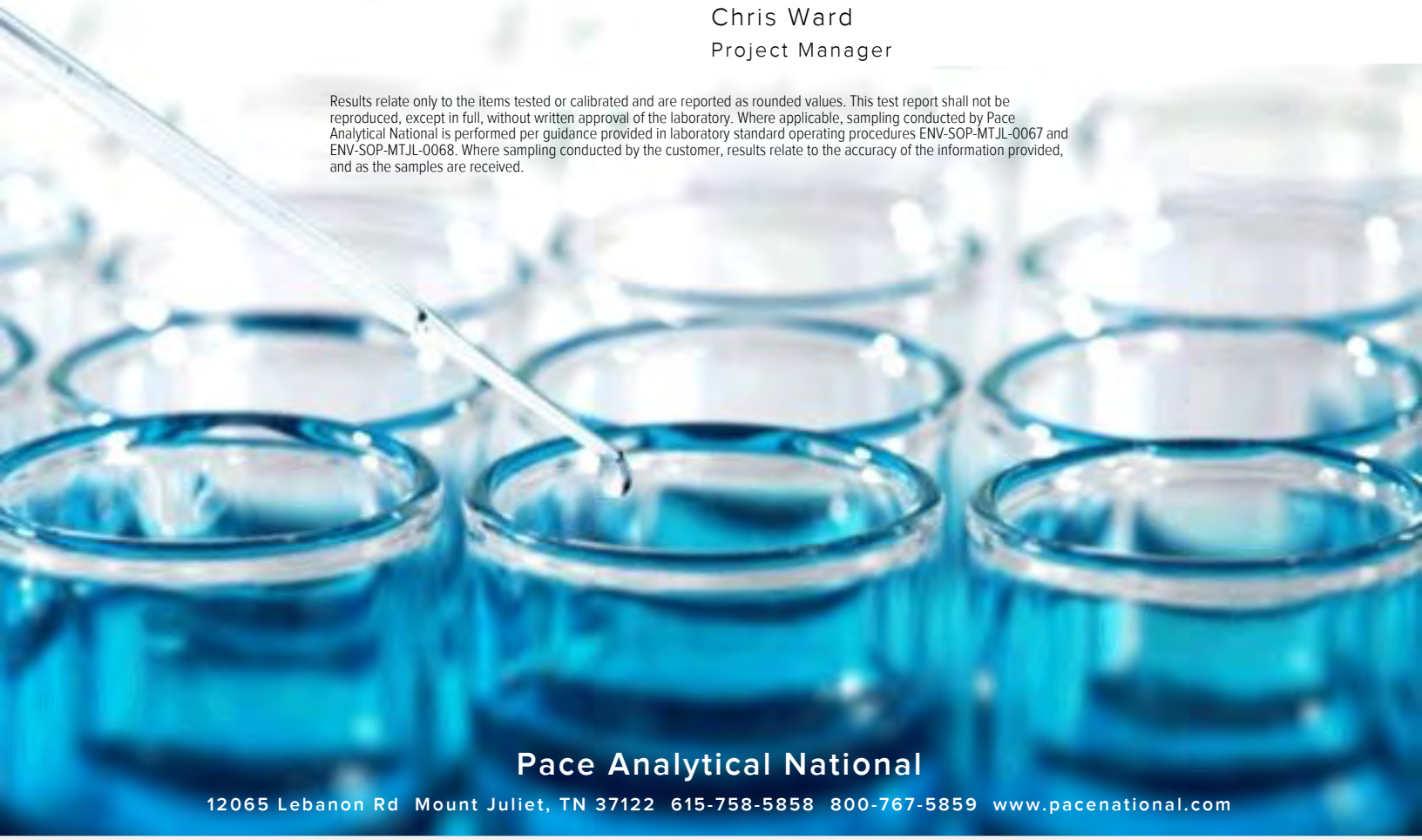
Caerus Oil and Gas

Sample Delivery Group:	L1387472
Samples Received:	08/06/2021
Project Number:	K24
Description:	K24

Report To: Blair Rollins
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By: Chris Ward

Chris Ward
Project Manager



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

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SAMPLE SUMMARY

20210805-K24-SBG-6"-1330 L1387472-01 Solid

Collected by: Chance Holder
Collected date/time: 08/05/21 13:30
Received date/time: 08/06/21 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1719464	1	08/10/21 22:24	08/10/21 22:24	CCE	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1720388	1	08/10/21 10:00	08/11/21 16:00	BMD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1720224	1	08/10/21 16:55	08/11/21 06:31	ARD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1719507	5	08/08/21 11:22	08/09/21 23:10	LD	Mt. Juliet, TN

20210805-K24-EBG-6"-1340 L1387472-02 Solid

Collected by: Chance Holder
Collected date/time: 08/05/21 13:40
Received date/time: 08/06/21 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1719464	1	08/10/21 22:27	08/10/21 22:27	CCE	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1720388	1	08/10/21 10:00	08/11/21 16:00	BMD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1720225	1	08/11/21 02:05	08/11/21 07:26	ARD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1719507	5	08/08/21 11:22	08/09/21 23:26	LD	Mt. Juliet, TN

CASE NARRATIVE

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

Chris Ward
Project Manager

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.0826		1	08/10/2021 22:24	WG1719464

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	su				
pH	6.94	T8	1	08/11/2021 16:00	WG1720388

Sample Narrative:

L1387472-01 WG1720388: 6.94 at 24.5C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	102		10.0	1	08/11/2021 06:31	WG1720224

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Arsenic	2.61	O1	1.00	5	08/09/2021 23:10	WG1719507

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.136		1	08/10/2021 22:27	WG1719464

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	su				
pH	7.15	T8	1	08/11/2021 16:00	WG1720388

Sample Narrative:

L1387472-02 WG1720388: 7.15 at 24.7C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	119		10.0	1	08/11/2021 07:26	WG1720225

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Arsenic	4.67		1.00	5	08/09/2021 23:26	WG1719507

L1386520-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1386520-02 08/11/21 16:00 • (DUP) R3690810-2 08/11/21 16:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	5.19	5.18	1	0.193		1

Sample Narrative:

OS: 5.19 at 24.6C

DUP: 5.18 at 24.4C

L1387469-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1387469-04 08/11/21 16:00 • (DUP) R3690810-3 08/11/21 16:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.93	8.97	1	0.447		1

Sample Narrative:

OS: 8.93 at 24.4C

DUP: 8.97 at 24.5C

Laboratory Control Sample (LCS)

(LCS) R3690810-1 08/11/21 16:00

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

Sample Narrative:

LCS: 10 at 24.1C

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

Method Blank (MB)

(MB) R3690421-1 08/11/21 06:31

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

L1385785-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1385785-01 08/11/21 06:31 • (DUP) R3690421-3 08/11/21 06:31

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	4080	4060	1	0.491		20

L1387469-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1387469-05 08/11/21 06:31 • (DUP) R3690421-4 08/11/21 06:31

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	7230	7670	1	5.91		20

Laboratory Control Sample (LCS)

(LCS) R3690421-2 08/11/21 06:31

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	899	902	100	85.0-115	

Method Blank (MB)

(MB) R3690424-1 08/11/21 07:26

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

L1387526-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1387526-07 08/11/21 07:26 • (DUP) R3690424-3 08/11/21 07:26

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	121	131	1	7.47		20

L1387702-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1387702-02 08/11/21 07:26 • (DUP) R3690424-4 08/11/21 07:26

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	386	378	1	2.09		20

Laboratory Control Sample (LCS)

(LCS) R3690424-2 08/11/21 07:26

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	899	908	101	85.0-115	

Method Blank (MB)

(MB) R3689881-1 08/09/21 23:03

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

Laboratory Control Sample (LCS)

(LCS) R3689881-2 08/09/21 23:07

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	94.0	94.0	80.0-120	

L1387472-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1387472-01 08/09/21 23:10 • (MS) R3689881-5 08/09/21 23:20 • (MSD) R3689881-6 08/09/21 23:23

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	2.61	96.8	92.6	94.2	90.0	5	75.0-125			4.40	20

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
T8	Sample(s) received past/too close to holding time expiration.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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

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

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

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

Caerus Oil and Gas

143 Diamond Ave
Parachute, Co 81635

Billing Information:
Caerus Oil and Gas

Pres Chk

Report to:
Blair Rollins

Email To: **brollins@caerusoilandgas.com; jjanicek@caerusoilandgas.com; bmiddleton@caerusoilandgas.com**

Project Description: K24

City/State Collected:

Please Circle: PT MT CT ET

Phone: **970-640-6919**

Client Project # K24

Lab Project #

Collected by (print): CHANCE HOLDER

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

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

Quote #

Date Results Needed

No. of Cntrs

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Table915 GRO/DRO/ORO 4ozClr-NoPres	Table915 Metals 4ozClr-NoPres	Table915 PAHs 4ozClr-NoPres	Table915 VOCs 4ozClr-NoPres	Table915 pH SPCONSAR 4ozClr-NoPres	EC	SAR	PH	ARSENIC	Remarks	Sample # (lab only)
20210505-K24-SBG-6"-1330	GRAB	SS	6"	8/5/21	1330	1	X	X	X	X	X	X	X	X	X		-01
20210505-K24-EBG-6"-1340	1	1	6"	1	1340	1						X	X	X	X		-02

Chain of Custody Page ___ of ___

Pace Analytical®
National Center for Testing & Innovation

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

SDG # L1387492
D105

Acctnum:
Template:
Prelogin:
PM: **824 - Chris Ward**
PB:
Shipped Via: **FedEX Ground**

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

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # 5016 1232 1305

Sample Receipt Checklist

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

	Date:	Time:		
Relinquished by : (Signature)	8/5/21	1600	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Relinquished by : (Signature)	8/5/21	1730	Received by: (Signature)	Temp: 4.0 °C 2.2-7.2 Bottles Received: 2
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 8/6/21 Time: 8:30

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

March 29, 2019

Caerus Oil and Gas

Sample Delivery Group:	L1081561
Samples Received:	03/22/2019
Project Number:	A24-496
Description:	A24-496
Site:	A24-496
Report To:	Brett Middleton 143 Diamond Avenue Parachute, CO 81635

Entire Report Reviewed By: Chris Ward

Chris Ward
Project Manager

TABLE OF CONTENTS

20190320-A24-496 (SS01) 0-6 L1081561-01 Solid

Collected by: Dustin H
Collected date/time: 03/20/19 13:25
Received date/time: 03/22/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1254688	1	03/26/19 14:59	03/26/19 14:59	CCE	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1254344	1	03/25/19 15:49	03/26/19 11:00	SJM	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1257537	1	03/29/19 10:11	03/29/19 14:21	TCC	Mt. Juliet, TN

20190320-A24-496 (SS02) 0-6 L1081561-02 Solid

Collected by: Dustin H
Collected date/time: 03/20/19 13:40
Received date/time: 03/22/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1254688	1	03/26/19 15:01	03/26/19 15:01	CCE	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1254344	1	03/25/19 15:49	03/26/19 11:00	SJM	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1257537	1	03/29/19 10:11	03/29/19 14:21	TCC	Mt. Juliet, TN

20190320-A24-496 (SS03) 0-6 L1081561-03 Solid

Collected by: Dustin H
Collected date/time: 03/20/19 13:50
Received date/time: 03/22/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1254688	1	03/26/19 15:04	03/26/19 15:04	CCE	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1254344	1	03/25/19 15:49	03/26/19 11:00	SJM	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1257537	1	03/29/19 10:11	03/29/19 14:21	TCC	Mt. Juliet, TN

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

Chris Ward
Project Manager

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.15		1	03/26/2019 14:59	WG1254688

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.31	T8	1	03/26/2019 11:00	WG1254344

Sample Narrative:

L1081561-01 WG1254344: 8.31 at 19.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	115		10.0	1	03/29/2019 14:21	WG1257537

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.34		1	03/26/2019 15:01	WG1254688

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.44	T8	1	03/26/2019 11:00	WG1254344

Sample Narrative:

L1081561-02 WG1254344: 8.44 at 19.8C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	95.0		10.0	1	03/29/2019 14:21	WG1257537

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.02		1	03/26/2019 15:04	WG1254688

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.74	T8	1	03/26/2019 11:00	WG1254344

Sample Narrative:

L1081561-03 WG1254344: 8.74 at 20.1C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	91.2		10.0	1	03/29/2019 14:21	WG1257537

L1081561-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1081561-02 03/26/19 11:00 • (DUP) R3395151-3 03/26/19 11:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.44	8.48	1	0.473		1

Sample Narrative:

OS: 8.44 at 19.8C

DUP: 8.48 at 19.8C

Laboratory Control Sample (LCS)

(LCS) R3395151-1 03/26/19 11:00

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	9.98	99.8	99.0-101	

Sample Narrative:

LCS: 9.98 at 18.4C

Method Blank (MB)

(MB) R3396612-1 03/29/19 14:21

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

L1081548-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1081548-01 03/29/19 14:21 • (DUP) R3396612-3 03/29/19 14:21

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	2170	2170	1	0.138		20

L1082283-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1082283-04 03/29/19 14:21 • (DUP) R3396612-4 03/29/19 14:21

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	247	248	1	0.242		20

Laboratory Control Sample (LCS)

(LCS) R3396612-2 03/29/19 14:21

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	877	881	100	90.0-110	

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.

Abbreviations and Definitions

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

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

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

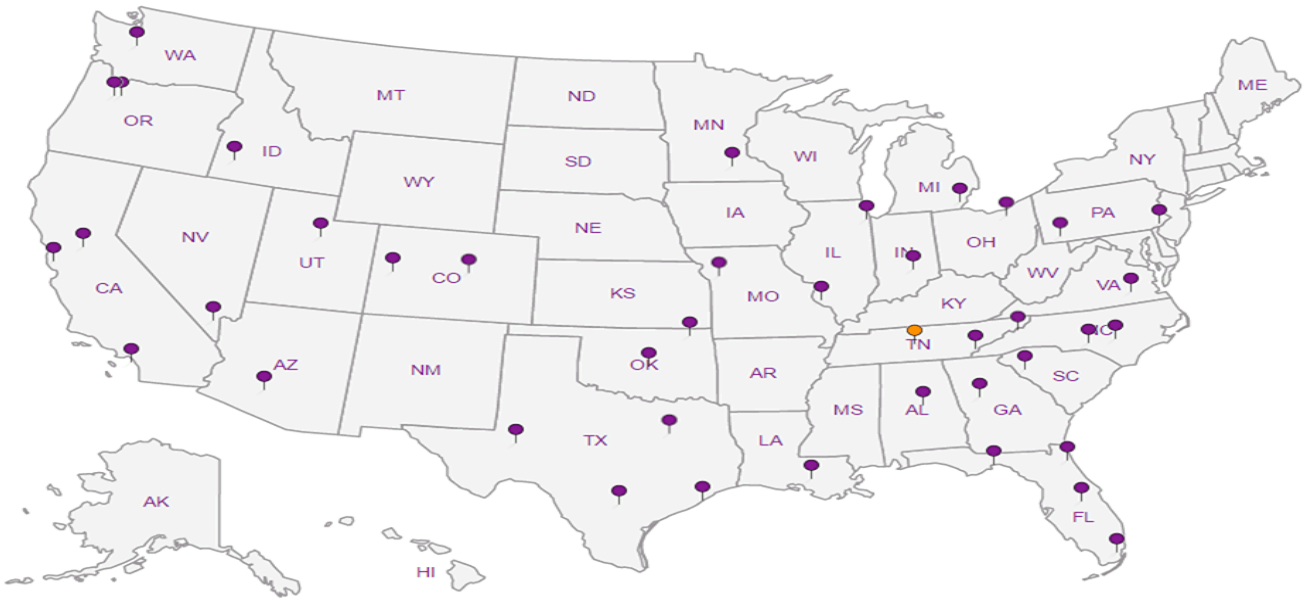
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

Our Locations

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



CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

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

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

ALL SHADED AREAS are for LAB USE ONLY

Company: Caerus Oil & Gas LLC	Billing Information: Same as Above
Address: 143 Diamond Avenue	
Report To: jjanicek@caerusoilandgas.com	Email To: jjanicek@caerusoilandgas.com
Copy To: bmiddleton@caerusoiland gas.com	Site Collection Info/Address: A24-496
Customer Project Name/Number: A24-496	State: CO County/City: Parachute Time Zone Collected: [ ] PT [✓] MT [ ] CT [ ] ET
Phone: 970-285-9606 Email:	Site/Facility ID #: A24-496
Collected By (print): Dustin Hess	Purchase Order #: Quote #:
Collected By (signature):	Turnaround Date Required: Standard TAT
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: ✱ STANDARD ✱ [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply)
	Compliance Monitoring? [ ] Yes [ ] No
	DW PWS ID #: DW Location Code:
	Immediately Packed on Ice: [✓] Yes [ ] No
	Field Filtered (if applicable): [ ] Yes [ ] No Analysis: _____

Container Preservative Type **

Lab Project Manager:

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

Analyses

Lab Profile/Line:

F206

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:

L1081561

* 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	TPH GRO/DRO	BTEX	TABLE 910-1 PAH'S	SAR, EC, pH	TABLE 910- METALS	
20190320-A24-496(SS01)0-6"	SL	G	3/20/19	1325				1				X		-01
20190320-A24-496(SS02)0-6"	SL	G	3/20/19	1340				1				X		-02
20190320-A24-496(SS03)0-6"	SL	G	3/20/19	1350				1				X		-03

RAD SCREEN: <0.5 mR/hr

Customer Remarks / Special Conditions / Possible Hazards:
Standard TAT
3 802

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 #: 4510 1663 2963

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: 2.0 oC
Cooler 1 Therm Corr. Factor: +0 oC
Cooler 1 Corrected Temp: 2.0 oC
Comments: PM. A2

Relinquished by/Company: (Signature)	Date/Time: 3/20/19 1600	Received by/Company: (Signature)	Date/Time: 3/21 1400
Relinquished by/Company: (Signature)	Date/Time: 3/21/19 1730	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time: 5/22/19 0830

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: 1 of: 1