Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

January 17, 2020

Caerus Oil and Gas

Sample Delivery Group:	L1178237
Samples Received:	01/10/2020
Project Number:	C16OU DUMPLINE RELEA
Description:	c16OU Dumpline Release
Site:	C16OU
Report To:	Brett Middleton 143 Diamond Avenue Parachute, CO 81635

Entire Report Reviewed By: Chris Ward

Chris Ward
Project Manager

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20200108-C16OU (N BOTTOM) @ 29' L1178237-01 Solid

Collected by: B. Cocina | Collected date/time: 01/08/20 13:40 | Received date/time: 01/10/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1409917	1	01/15/20 12:33	01/15/20 12:33	TRB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1412115	1	01/16/20 11:45	01/16/20 12:43	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1412101	1	01/17/20 09:50	01/17/20 10:55	EEM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1410721	1	01/11/20 11:44	01/14/20 16:49	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1410414	1	01/11/20 11:44	01/14/20 03:00	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1410779	1	01/14/20 06:50	01/14/20 21:51	KME	Mt. Juliet, TN

20200108-C16OU (N WALL) @ 28' L1178237-02 Solid

Collected by: B. Cocina | Collected date/time: 01/08/20 13:50 | Received date/time: 01/10/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1409917	1	01/15/20 12:36	01/15/20 12:36	TRB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1412115	1	01/16/20 11:45	01/16/20 12:43	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1412101	1	01/17/20 09:50	01/17/20 10:55	EEM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1410721	1	01/11/20 11:44	01/14/20 17:21	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1410414	1	01/11/20 11:44	01/14/20 03:19	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1410779	1	01/14/20 06:50	01/14/20 22:04	KME	Mt. Juliet, TN

20200108-C16OU (E WALL) @ 27' L1178237-03 Solid

Collected by: B. Cocina | Collected date/time: 01/08/20 14:10 | Received date/time: 01/10/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1409917	1	01/15/20 12:39	01/15/20 12:39	TRB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1412115	1	01/16/20 11:45	01/16/20 12:43	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1412101	1	01/17/20 09:50	01/17/20 10:55	EEM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1410721	1	01/11/20 11:44	01/14/20 17:43	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1410414	1	01/11/20 11:44	01/14/20 03:38	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1410779	1	01/14/20 06:50	01/14/20 22:17	KME	Mt. Juliet, TN

20200108-C16OU (W WALL) @ 27' L1178237-04 Solid

Collected by: B. Cocina | Collected date/time: 01/08/20 14:25 | Received date/time: 01/10/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1409917	1	01/15/20 12:41	01/15/20 12:41	TRB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1412115	1	01/16/20 11:45	01/16/20 12:43	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1412101	1	01/17/20 09:50	01/17/20 10:55	EEM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1410721	1	01/11/20 11:44	01/14/20 18:05	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1410414	1	01/11/20 11:44	01/14/20 03:57	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1410779	1	01/14/20 06:50	01/14/20 22:29	KME	Mt. Juliet, TN

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

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

Chris Ward
Project Manager

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	47.2		1	01/15/2020 12:33	WG1409917

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	9.17	T8	1	01/16/2020 12:43	WG1412115

Sample Narrative:

L1178237-01 WG1412115: 9.17 at 20.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	3750		10.0	1	01/17/2020 10:55	WG1412101

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	1.76		0.100	1	01/14/2020 16:49	WG1410721
(S) a,a,a-Trifluorotoluene(FID)	*97.2*		*77.0-120*		*01/14/2020 16:49*	WG1410721

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00905		0.00100	1	01/14/2020 03:00	WG1410414
Toluene	ND		0.00500	1	01/14/2020 03:00	WG1410414
Ethylbenzene	ND		0.00250	1	01/14/2020 03:00	WG1410414
Total Xylenes	ND		0.00650	1	01/14/2020 03:00	WG1410414
(S) Toluene-d8	*104*		*75.0-131*		*01/14/2020 03:00*	WG1410414
(S) 4-Bromofluorobenzene	*98.3*		*67.0-138*		*01/14/2020 03:00*	WG1410414
(S) 1,2-Dichloroethane-d4	*101*		*70.0-130*		*01/14/2020 03:00*	WG1410414

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	9.69	B	4.00	1	01/14/2020 21:51	WG1410779
(S) o-Terphenyl	*61.2*		*18.0-148*		*01/14/2020 21:51*	WG1410779

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	25.7		1	01/15/2020 12:36	WG1409917

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.87	T8	1	01/16/2020 12:43	WG1412115

Sample Narrative:

L1178237-02 WG1412115: 8.87 at 20.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	3280		10.0	1	01/17/2020 10:55	WG1412101

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	0.253	B	0.100	1	01/14/2020 17:21	WG1410721
(S) a,a,a-Trifluorotoluene(FID)	*99.3*		*77.0-120*		*01/14/2020 17:21*	WG1410721

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	01/14/2020 03:19	WG1410414
Toluene	ND		0.00500	1	01/14/2020 03:19	WG1410414
Ethylbenzene	ND		0.00250	1	01/14/2020 03:19	WG1410414
Total Xylenes	ND		0.00650	1	01/14/2020 03:19	WG1410414
(S) Toluene-d8	*106*		*75.0-131*		*01/14/2020 03:19*	WG1410414
(S) 4-Bromofluorobenzene	*99.6*		*67.0-138*		*01/14/2020 03:19*	WG1410414
(S) 1,2-Dichloroethane-d4	*99.9*		*70.0-130*		*01/14/2020 03:19*	WG1410414

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		4.00	1	01/14/2020 22:04	WG1410779
(S) o-Terphenyl	*62.4*		*18.0-148*		*01/14/2020 22:04*	WG1410779

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	53.3		1	01/15/2020 12:39	WG1409917

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.72	T8	1	01/16/2020 12:43	WG1412115

Sample Narrative:

L1178237-03 WG1412115: 8.72 at 20.2C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	3650		10.0	1	01/17/2020 10:55	WG1412101

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	0.229	B	0.100	1	01/14/2020 17:43	WG1410721
(S) a,a,a-Trifluorotoluene(FID)	*100*		*77.0-120*		*01/14/2020 17:43*	WG1410721

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	01/14/2020 03:38	WG1410414
Toluene	ND		0.00500	1	01/14/2020 03:38	WG1410414
Ethylbenzene	ND		0.00250	1	01/14/2020 03:38	WG1410414
Total Xylenes	ND		0.00650	1	01/14/2020 03:38	WG1410414
(S) Toluene-d8	*103*		*75.0-131*		*01/14/2020 03:38*	WG1410414
(S) 4-Bromofluorobenzene	*98.3*		*67.0-138*		*01/14/2020 03:38*	WG1410414
(S) 1,2-Dichloroethane-d4	*101*		*70.0-130*		*01/14/2020 03:38*	WG1410414

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		4.00	1	01/14/2020 22:17	WG1410779
(S) o-Terphenyl	*58.3*		*18.0-148*		*01/14/2020 22:17*	WG1410779

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	22.8		1	01/15/2020 12:41	WG1409917

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	9.03	T8	1	01/16/2020 12:43	WG1412115

Sample Narrative:

L1178237-04 WG1412115: 9.03 at 19.9C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	4040		10.0	1	01/17/2020 10:55	WG1412101

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	0.238	B	0.100	1	01/14/2020 18:05	WG1410721
(S) a,a,a-Trifluorotoluene(FID)	*100*		*77.0-120*		*01/14/2020 18:05*	WG1410721

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	01/14/2020 03:57	WG1410414
Toluene	ND		0.00500	1	01/14/2020 03:57	WG1410414
Ethylbenzene	ND		0.00250	1	01/14/2020 03:57	WG1410414
Total Xylenes	ND		0.00650	1	01/14/2020 03:57	WG1410414
(S) Toluene-d8	*103*		*75.0-131*		*01/14/2020 03:57*	WG1410414
(S) 4-Bromofluorobenzene	*97.2*		*67.0-138*		*01/14/2020 03:57*	WG1410414
(S) 1,2-Dichloroethane-d4	*99.6*		*70.0-130*		*01/14/2020 03:57*	WG1410414

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		4.00	1	01/14/2020 22:29	WG1410779
(S) o-Terphenyl	*57.6*		*18.0-148*		*01/14/2020 22:29*	WG1410779

L1177755-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1177755-01 01/16/20 12:43 • (DUP) R3491335-2 01/16/20 12:43

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.35	8.39	1	0.478		1

Sample Narrative:

OS: 8.35 at 21C

DUP: 8.39 at 20.1C

Laboratory Control Sample (LCS)

(LCS) R3491335-1 01/16/20 12:43

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

Sample Narrative:

LCS: 9.97 at 19.3C

Method Blank (MB)

(MB) R3491660-1 01/17/20 10:55

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

L1178237-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1178237-01 01/17/20 10:55 • (DUP) R3491660-3 01/17/20 10:55

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	umhos/cm	umhos/cm		%		%
Specific Conductance	3750	3150	1	17.4		20

Laboratory Control Sample (LCS)

(LCS) R3491660-2 01/17/20 10:55

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	umhos/cm	umhos/cm	%	%	
Specific Conductance	475	473	99.6	85.0-115	

Method Blank (MB)

(MB) R3490835-3 01/14/20 12:10

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0500	J	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*102*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3490835-2 01/14/20 11:14

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	6.10	111	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*105*	*77.0-120*	

L1178505-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1178505-01 01/14/20 21:08 • (MS) R3490835-4 01/15/20 03:39 • (MSD) R3490835-5 01/15/20 04:01

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 %
TPH (GC/FID) Low Fraction	89.7	1.41	99.1	106	109	117	25	10.0-151			6.73	28
(S) a,a,a-Trifluorotoluene(FID)					*109*	*110*		*77.0-120*				

Method Blank (MB)

(MB) R3490643-2 01/13/20 20:09

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000400	0.00100
Ethylbenzene	U		0.000530	0.00250
Toluene	U		0.00125	0.00500
Xylenes, Total	U		0.00478	0.00650
(S) Toluene-d8	*102*			*75.0-131*
(S) 4-Bromofluorobenzene	*94.9*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*96.9*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3490643-1 01/13/20 19:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.122	97.6	70.0-123	
Ethylbenzene	0.125	0.137	110	74.0-126	
Toluene	0.125	0.132	106	75.0-121	
Xylenes, Total	0.375	0.402	107	72.0-127	
(S) Toluene-d8			*102*	*75.0-131*	
(S) 4-Bromofluorobenzene			*102*	*67.0-138*	
(S) 1,2-Dichloroethane-d4			*102*	*70.0-130*	

Method Blank (MB)

(MB) R3490628-1 01/14/20 14:03

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) High Fraction	1.54	J	0.769	4.00
(S) o-Terphenyl	*61.9*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3490628-2 01/14/20 14:16

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) High Fraction	50.0	41.4	82.8	50.0-150	
(S) o-Terphenyl			*56.0*	*18.0-148*	

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
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
T8	Sample(s) received past/too close to holding time expiration.

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

State Accreditations

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

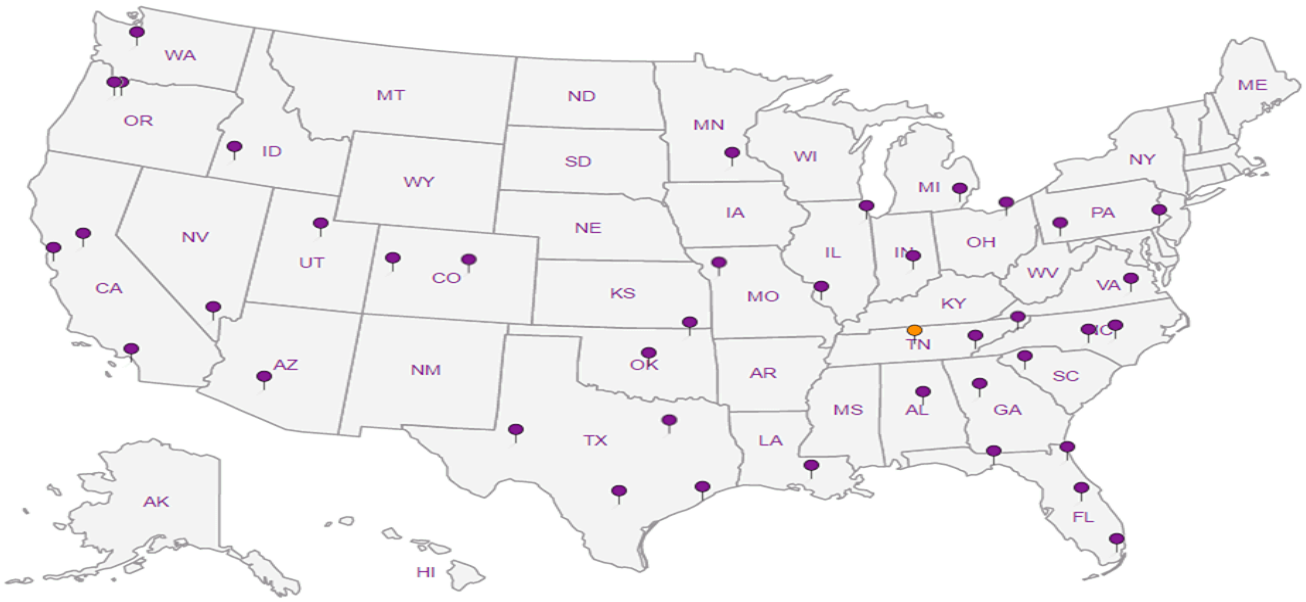
Third Party Federal Accreditations

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

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

Our Locations

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



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

Billing Information: **Same as above**

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

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

Project Description: C160U Dumpline Release

City/State Collected: ~~Rulison~~, CO Parachute

Phone: / Fax:

Client Project #: C160U Dumpline Release

Lab Project #: C160U Dumpline Release

Collected by (print): B. Cocina

Site/Facility ID #: C160U

P.O. #: C160U Dumpline Release

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 #: NA

Date Results Needed: **Standard TAT**

Analysis / Container / Preservative

Pres Chk

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TPH- GRO/DRO	BTEX	TABLE 910- PAH's	SAR	EC	TABLE 910- Metals	pH	Remarks	Sample # (lab only)
20200108-C160U(N BOTTOM)@29'	Grab	SS	29'	01/08/2020	1340	2	X	X		X	X		X		-01
20200108-C160U(N WALL)@28'	G	SS	28'	01/08/2020	1350	2	X	X		X	X		X		02
20200108-C160U(E WALL)@27'	G	SS	27'	01/08/2020	1410	2	X	X		X	X		X		03
20200108-C160U(W WALL)@27'	G	SS	27'	01/08/2020	1425	2	X	X		X	X		X		04

* 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 # 451016634900

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

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
Brittany Cocina	1/8/2020	1700		0	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: ~~for~~ °C Bottles Received:	
	1/9/2020	1700		0.6 8	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: Condition: NCF / OK
				1/10/20 900	

Chain of Custody Page 1 of 1

Pace Analytical®
National Center for Testing & Innovation

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Mount Juliet, TN 37122
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Phone: 800-767-5859
Fax: 615-758-5859

L # L1178237
F036

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Template:
Prelogin:
TSR:
PB:
Shipped Via: